Annual Report of Groundwater Monitoring and Remediation in 2019

Darr Angell #4
Lea County, New Mexico
SRS #2001-10876
NMOCD Abatement Plan Number AP-007

Plains Pipeline LP

Table of Contents

Figure Index

Table Index

Appendix Index

1. Introduction

GHD Services Inc. (GHD) has prepared this report on behalf of Plains All American Pipeline, L.P. (Plains) summarizing quarterly groundwater monitoring conducted at Darr Angell #4 (Site). Activities performed during 2019 also included groundwater remediation of hydrocarbons via pneumatic skimmer pumps, abatement of light non-aqueous phase liquid (LNAPL) via semi-monthly hand-bailing, and enhanced fluid recovery (EFR).

This report contains data gathered during the first, second, third, and fourth quarters of 2019 and is being submitted to the New Mexico Oil Conservation Division (NMOCD) in association with the Abatement Plan Number AP-007 assigned to the Site.

The Site is in NW1/4, NE1/4, Section 11, Township 15 South, Range 37 East and SW1/4, SE1/4, Section 2, Township 15 South, Range 37 East, Lea County, New Mexico and is shown in Figure 1. Latitude and longitude of the Site are 33.038571°N and 103.167629°W, respectively.

1.1 Site History

The Site was formerly the responsibility of Enron Oil Trading and Transportation (EOTT); however, the Site is currently the responsibility of Plains. There were two separate pipeline releases at the Site. The first release occurred on November 9, 1999, and the second on February 2, 2001. The second release was discovered by EOTT employees, and immediate notification was made to the NMOCD. Details of the release were later submitted on a Release Notification and Corrective Action Form (C-141) to the NMOCD on May 21, 2005. According to the release report, an estimated 150 barrels of crude oil were released, and 95 barrels were recovered during initial response actions. The release was reported to have occurred from an 8-inch EOTT pipeline and was attributed to internal pipeline corrosion.

Beginning on May 29, 2004, project management responsibilities were performed by NOVA. GHD was given project management responsibilities on May 2, 2011.

There are 17 groundwater monitor wells (MW-1A, MW-2, MW-3R, MW-4R, MW-5, MW-6, MW-7, MW-8R, MW-9, MW-10R, MW-11, MW-12R, MW-13, MW-14, MW-15, MW-16, and MW-17). There are 16 recovery wells (RW-1, RW-2, RW-3R, RW-4R, RW-5R, RW-7, RW-8, RW-9, RW-10, RW-11, RW-12, RW-13, RW-14, RW-15, RW-16, and RW-17). All monitor wells and recovery wells were drilled and constructed with NMOCD approval. Recovery well RW-4 was plugged and abandoned with NMOCD approval on October 9, 2014. Recovery well RW-4R was drilled and constructed on October 9, 2014. Recovery well RW-3R, RW-14, and RW-15 were drilled and constructed on October 14, 2014. Monitoring wells MW-3, MW-12, and recovery well RW-3 were plugged and abandoned with NMOCD approval on October 15, 2014. Replacement monitoring wells MW-3R and MW-12R were drilled and constructed on October 15, 2014. Monitor wells MW-4, MW-8, MW-10, and recovery wells RW-5 and RW-6 were plugged and abandoned on February 23, 2017. Monitor wells MW-4R, MW-8R, MW-10R, MW-17, and recovery wells RW-5R, RW-16, and RW-17 were drilled and constructed in February and March 2017. Locations of new wells were professionally surveyed on November 11, 2014 and June 29, 2017. A map showing details of the Site is in Figure 2.

2. Regulatory Framework

The Site has been assigned Abatement Plan number AP-007 by the New Mexico Oil Conservation Division (NMOCD). The NMOCD guidelines require groundwater to be analyzed for potential contaminants as defined in the New Mexico Administrative Code 20.6.2.3103 Section A, which provides the Human Health Standards for Groundwater. The constituents of concern (COCs) in impacted groundwater at the Site are LNAPL, benzene, toluene, ethylbenzene, total xylenes (BTEX), benzo(a)pyrene, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene. NMWQCC standards as shown in Table 2.1 are used to guide assessment and remediation of the Site.

Table 2.1 NMWQCC Human Health Standards

Analyte	NMWQCC Regulatory Standard
Benzene	0.01 mg/L
Toluene	0.75 mg/L
Ethylbenzene	0.75 mg/L
Total Xylenes	0.62 mg/L
Benzo(a)pyrene	0.0002 mg/L
Combined Naphthalene and Monomethylnaphthalenes	0.03 mg/L

Table 2.2 is the sampling schedule approved by the NMOCD in a correspondence dated April 28, 2004 and was amended in NMOCD correspondence dated June 21, 2005.

Table 2.2 Sampling Schedule Approved by NMOCD

Location	Schedule	Location	Schedule	Location	Schedule
MW-1A	Annually	MW-11	Annually	RW-5	Plugged/Abandoned
MW-2	Annually	MW-12	Plugged/Abandoned	RW-6	Plugged/Abandoned
MW-3	Plugged/Abandoned	MW-13	Annually	RW-7	Quarterly
MW-4	Plugged/Abandoned	MW-14	Quarterly	RW-8	Quarterly
MW-5	Annually	MW-15	Quarterly	RW-9	Quarterly
MW-6	Quarterly	MW-16	Quarterly	RW-10	Quarterly
MW-7	Annually	RW-1	Quarterly	RW-11	Quarterly
MW-8	Plugged/Abandoned	RW-2	Quarterly	RW-12	Quarterly
MW-9	Semi-Annually	RW-3	Plugged/Abandoned	RW-13	Quarterly
MW-10	Plugged/Abandoned	RW-4	Plugged/Abandoned		

Monitoring and recovery wells MW-3R, MW-4R, MW-8R, MW-10R, MW-12R, MW-17, RW-3R, RW-4R, RW-5R, RW-14, RW-15, RW-16, and RW-17 are currently monitored on a quarterly basis to establish periodic historical data regarding dissolved-phase COCs and LNAPL thickness. These wells will be added to the approved sampling schedule subsequent to approval by the NMOCD. A request for approval by the NMOCD of a modified sampling schedule was submitted with the 2016 Annual Groundwater Monitoring Report in April 2017.

3. Groundwater Monitoring

Quarterly groundwater monitoring was conducted by GHD on February 26-28, May 20-23, July 22-25, and October 21-25, 2019. Wells were sampled in accordance with the sampling schedule in Section 2. Wells containing measureable thicknesses of LNAPL (>0.01 foot) were not sampled.

Several monitor and recovery wells contained no fluid column or so little fluid that they could not be gauged or sampled. They were MW-1A, MW-2, MW-5, MW-6, MW-7, MW-9, MW-11, MW-13, RW-1, RW-2, RW-8, RW-10, and RW-12. Recovery wells RW-7 and RW-13 went dry after the first quarter sampling event. Wells MW-14, MW-15, RW-9, and RW-11 consistently contained two feet of fluid column or less throughout 2019.

3.1 Groundwater Monitoring Methodology

Well caps were removed to allow groundwater levels to stabilize. Static fluid levels were measured with an oil-water interface probe to the nearest hundredth of a foot. Wells not containing LNAPL were purged of three casing volumes of water, and samples of groundwater were collected using clean, disposable polyvinyl chloride (PVC) bailers. Laboratory-supplied sample containers were filled directly from bailers. A set of duplicate samples were collected for every ten wells sampled. Samples were placed on ice in insulated coolers immediately upon collection and chilled to a temperature of approximately 4°C (40°F). Proper chain-of-custody documentation accompanied all samples collected in 2019 to Pace Analytical in Mt. Juliet, Tennessee. Samples were analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) according to method EPA8021B. A sample collected from MW-8R during October was also analyzed for polycyclic aromatic hydrocarbons (PAH) according to method EPA 8270C-SIM. Volumes of groundwater purged from wells monitored during the first, second, third, and fourth quarters of 2019 were 104.8 gallons, 103.3 gallons, 77.0 gallons, and 84.0 gallons, respectively. The total volume of groundwater purged from wells during quarterly monitoring events in 2019 was 369.1 gallons.

3.2 The Potentiometric Surface and Gradient

All fluid level measurements were recorded from the top of casing (TOC) of each well. Elevations of the potentiometric surface were calculated using professionally-surveyed elevations of tops of casings and 0.81 for the specific gravity of LNAPL. Gauging data and elevations of the potentiometric surface during 2018 and 2019 are presented in Table 1. Maps of the potentiometric surface during the first, second, third, and fourth quarterly monitoring events are in Figure 3, Figure 4, Figure 5, and Figure 6, respectively.

Groundwater flow directions were east and east-southeast and are consistent with those from previous monitoring events. Gradients on the potentiometric surface were 0.0011 ft./ft., 0.0014 ft./ft., 0.0011 ft./ft., and 0.0013 ft./ft. during the first, second, third, and fourth quarterly monitoring events, respectively.

Elevations of the potentiometric surface fell in all wells in which elevations of the potentiometric surface could be determined on November 26, 2018 and October 21, 2019. Amounts of decline were between 0.72 foot and 0.90 foot. The average decline was 0.82 foot.

3.3 Presence of Light Non-aqueous Phase Liquids (LNAPL)

LNAPL was observed in recovery wells RW-3R, RW-4R, RW-9, RW-11, RW-16, and RW-17 during all four quarterly monitoring events. The greatest thickness of LNAPL observed during quarterly monitoring events of 2019 was 3.90 feet in recovery well RW-3R on October 21, 2019. LNAPL was not observed in any other well during 2019. Charts of thicknesses of LNAPL versus time in recovery wells RW-1, RW-2, RW-3R, RW-4R, RW-7, RW-8, RW-9, RW-10, RW-11, RW-12, RW-13, RW-16 and RW-17 are in Appendix A. With the exception of RW-3R, these wells show visually decreasing LNAPL thicknesses over time.

3.4 Dissolved-phase Hydrocarbons in Groundwater

Analytical results for monitoring conducted during 2018 and 2019 are included in Table 2. Results of analyses of BTEX during the first, second, third, and fourth quarterly monitoring events are shown on Figure 7, Figure 8, Figure 9, and Figure 10, respectively. Concentrations of PAH compounds that exceed regulatory standards are also included on Figure 10. Certified analytical reports from the laboratory are provided in Appendix C.

Monitor well MW-8R is the only well from which samples contained dissolved benzene at concentrations which exceeded the NMWQCC Human Health Standard of 0.01 mg/L. The greatest of those concentrations was 0.190 mg/L during the second quarterly event. No other wells exhibited dissolved benzene concentrations which exceeded the standard. Charts of concentrations of dissolved benzene over time in MW-8R, MW-10R, MW-17, RW-5/5R (combined data), RW-7, RW-13, RW-14 and RW-15 are provided in Appendix B. All of these wells show visually declining trends of benzene concentrations over time with the exception of MW-10R. The chart for MW-10R shows a visually stable trend.

All wells at the Site that were sampled during 2019 had detections of toluene, ethylbenzene, or total xylenes. All detections of these three analytes were below the corresponding NMWQCC Human Health Standards.

During the groundwater monitoring event in October, a sample was collected from MW-8R for analyses of polycyclic aromatic hydrocarbons (PAH). This well was sampled in accordance with the NMOCD's email correspondence to Plains dated December 12, 2012, regarding PAHs which provided the following directives:

> *Annual sampling of wells that have BTEX concentrations above the respective NMWQCC standard; wells where LNAPL has been removed and is no longer present; and continued sampling of each well for at least two consecutive years until each of the PAHs are at a concentration of 0.001mg/L or less (for PAHs that do not have a NMWQCC standard) and at or below NMWQCC standard for PAHs that have a standard (if applicable).*

Analytical results for PAH compounds are summarized in Table 3. Anthracene, acenaphthene, dibenzofuran, fluorene, phenanthrene, and pyrene were detected in the sample collected from MW-8R; however, these were at concentrations below the standard of 0.001 mg/L required in the correspondence from NMOCD noted above. Concentration of the combined group of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene in monitor well MW-8R was 0.002536, which is

below the NMWQCC Human Health Standard of 0.03 mg/L. Analytical results for PAH are included in the laboratory reports in Appendix C.

4. Corrective Action

Periodic hand-bailing events were conducted in MW-4R MW-8R, MW-10R, MW-17, RW-3R, RW-4R, RW-5R, RW-7, RW-9, RW-14, RW-15, and RW-16 during 2019 to reduce concentrations of dissolved-phase contaminants. The total volume of groundwater recovered during BTEX abatement during the year was 130 gallons.

Recovery wells MW-4R, RW-3R, RW-4R, RW9, RW-16 and RW-17 were targeted for periodic abatement of LNAPL by hand. The total volume of LNAPL recovered in this manner during the year was 9.86 gallons.

Pneumatic LNAPL-skimming pumps were in recovery wells RW-3R, RW-11, and RW-17 during 2019. Total recovery of LNAPL by the system during 2019 was 48.09 gallons. The system recovered 4052.45 gallons of groundwater during 2019.

Ten Enhanced Fluid Recovery (EFR) events were performed on recovery well RW-4R on March 27, April 17, May 15, June 12, July 17, August 20, September 10, October 16, November 19, and December 4 in 2019. Recovery wells RW-3R and RW-17 were the targeted wells on an additional EFR event conducted on February 20, 2019. Approximately 3.2 gallons of LNAPL and 4,536 gallons of groundwater were recovered during EFR events in 2019.

The LNAPL abatement program recovered approximately 61.15 gallons of LNAPL from the Site in 2019. Approximately 8588.45 gallons of groundwater were recovered from the Site during 2019. Total recovery of LNAPL since the beginning of the abatement program in 2001 approximately 17,729.15 gallons (422.12 bbl.).

All waste fluid recovered from purging, remediation system operation, and BTEX and LNAPL abatement were disposed at licensed disposal facilities as directed by Plains.

5. Summary of Findings

Based on groundwater monitoring and remedial activities performed by GHD at the Site in 2019, the following summary of findings is presented:

- There are 17 groundwater monitor wells and 16 recovery wells at the Site. Monitor wells MW-1A, MW-2, MW-5, MW-6, MW-7, MW-9, MW-11, MW-13, and recovery wells RW-1, RW-2, RW-7 RW-8, RW-10, RW-12, and RW-13 were gauged dry or had so little water that samples could not be recovered from them.
- Directions of flow of groundwater are to the east and east-southeast and are consistent with historical data. Magnitudes of gradients on the potentiometric surface were between 0.0011 ft./ft. and 0.0014 ft./ft. during all four quarters of 2019.
- Elevations of the potentiometric surface fell by an average of 0.82 foot between November 26, 2018 and October 21, 2019.

- LNAPL was encountered in recovery wells RW-3R, RW-4R, RW-9, RW-11, RW-16, and RW-17 during all quarterly monitoring events. The maximum thickness of LNAPL observed during 2019 was 3.90 feet in recovery well RW-3R. All wells impacted with LNAPL, with the exception of RW-3R, have a declining trend of thicknesses of LNAPL over time.
- Concentrations of dissolved benzene in MW-8R exceeded the NMWQCC Human Health Standard of 0.01 mg/L during three of four quarterly monitoring events. No other wells exhibited dissolved benzene concentrations which exceeded the standard. Trends of dissolved benzene over time in all wells impacted only by dissolved phase contaminants, except MW-10R, are visually declining. The trend in MW-10R is visually stable.
- All wells at the Site that were sampled during 2019 had detections of toluene, ethylbenzene, or total xylenes. All detections of these three analytes were below the corresponding NMWQCC Human Health Standards.
- During the November groundwater monitoring event, samples collected from monitor well MW-8R were analyzed for polycyclic aromatic hydrocarbons (PAH). The combined concentrations of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene was 0.002536, which is below the NMWQCC regulatory standard of 0.03 mg/L.
- Monitoring and recovery wells which were impacted by LNAPL, but were not fitted with pneumatic skimmer pumps, were hand bailed periodically as part of the LNAPL abatement program. Approximately 9.86 gallons of LNAPL were recovered by hand-bailing during 2019.
- LNAPL recovery was conducted with a pneumatic skimmer pumps in RW-3R, RW-11, and RW-17. Approximately 48.09 gallons of LNAPL were recovered with the recovery system.
- Eleven Enhanced Fluid Recovery (EFR) events were performed at the site on during 2019. A total volume 3.2 gallons of LNAPL recovered by these events.
- Monitoring and remedial activities during 2019 approximately 61.15 gallons of LNAPL and 8588.45 gallons of groundwater.
- Approximately 17,729.15 gallons (422.12 bbl.) of LNAPL have been recovered since the start of the LNAPL abatement program in 2001.

6. Recommendations

Based upon the data and findings presented in this report, the following are recommended for 2020:

- Continue quarterly groundwater monitoring events and annual reporting to the NMOCD. Each quarterly event will include well gauging and sampling of groundwater for BTEX.
- Continue annual analyses of polycyclic aromatic hydrocarbons (PAHs) during the fourth quarter monitoring event. Monitor well MW-8R and any new wells not impacted by LNAPL will require analyses of PAH.
- Continue operating the pneumatic LNAPL-only skimmer pump system in RW-3R, RW-11, and RW-17 to reduce hand-bailing efforts and enhance LNAPL recovery.
- Continue hand-bailing of select monitor wells to decrease benzene concentrations.

- Continue manual LNAPL abatement events on wells impacted by LNAPL but which do not have pneumatic skimmer pumps.
- Continue monthly EFR events on RW-4R and other wells to reduce the LNAPL thickness and the benzene concentrations in groundwater.
- A work plan proposing plugging of MW-1A, MMW-2, MW-5, MW-6, MW-7, MW-9, MW-11, MW-13, RW-1, RW-2, RW-8, RW-10 and RW-12 was submitted to the NMOCD on July 10, 2019. Those wells were dry or had insufficient fluid columns from which to collect samples of groundwater or recover LNAPL. The same work plan proposed installing MW-1R, MW-2R, MW-5R, MW-7R, MW-11R, MW-13R, MW-18, RW-10R, RW-18, and RW-19. The work plan will be implemented during 2020 out of necessity to maintain delineation of the contaminant plume and enhance the ability to recover LNAPL. Details regarding plugging and installation of these wells will be included in the annual report for 2020.

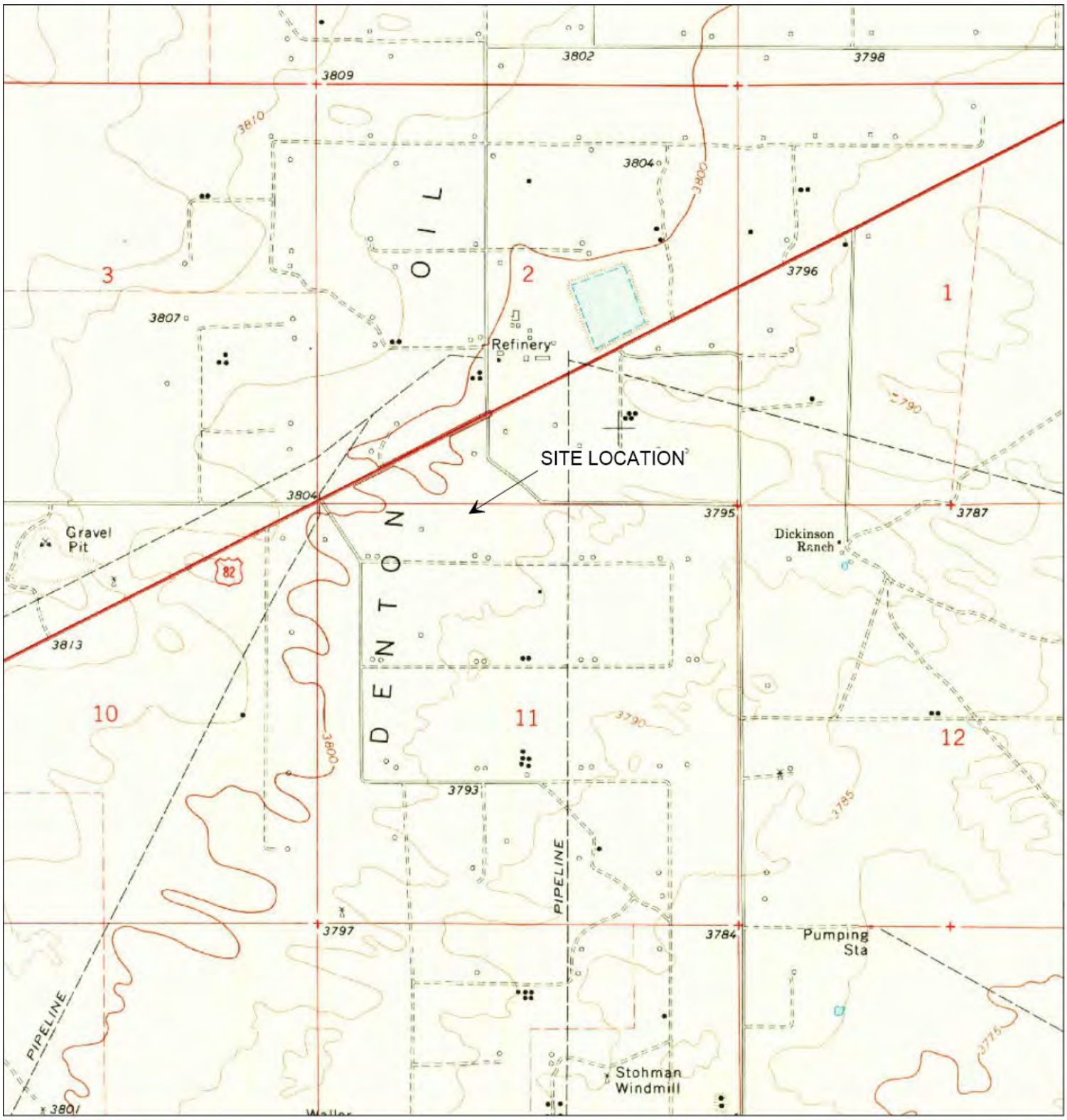
All of which is Respectfully Submitted,

GHD

Ryan Livingston
Project Scientist

John Schnable
Senior Project Manager

Figures



SOURCE: USGS 7.5 MINUTE QUADRANGLE
PRAIRIEVIEW, NEW MEXICO

LAT/LONG: 33.0386° NORTH, 103.1676° WEST
COORDINATE: NAD83 DATUM U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

0 FT 1000 FT 2000 FT

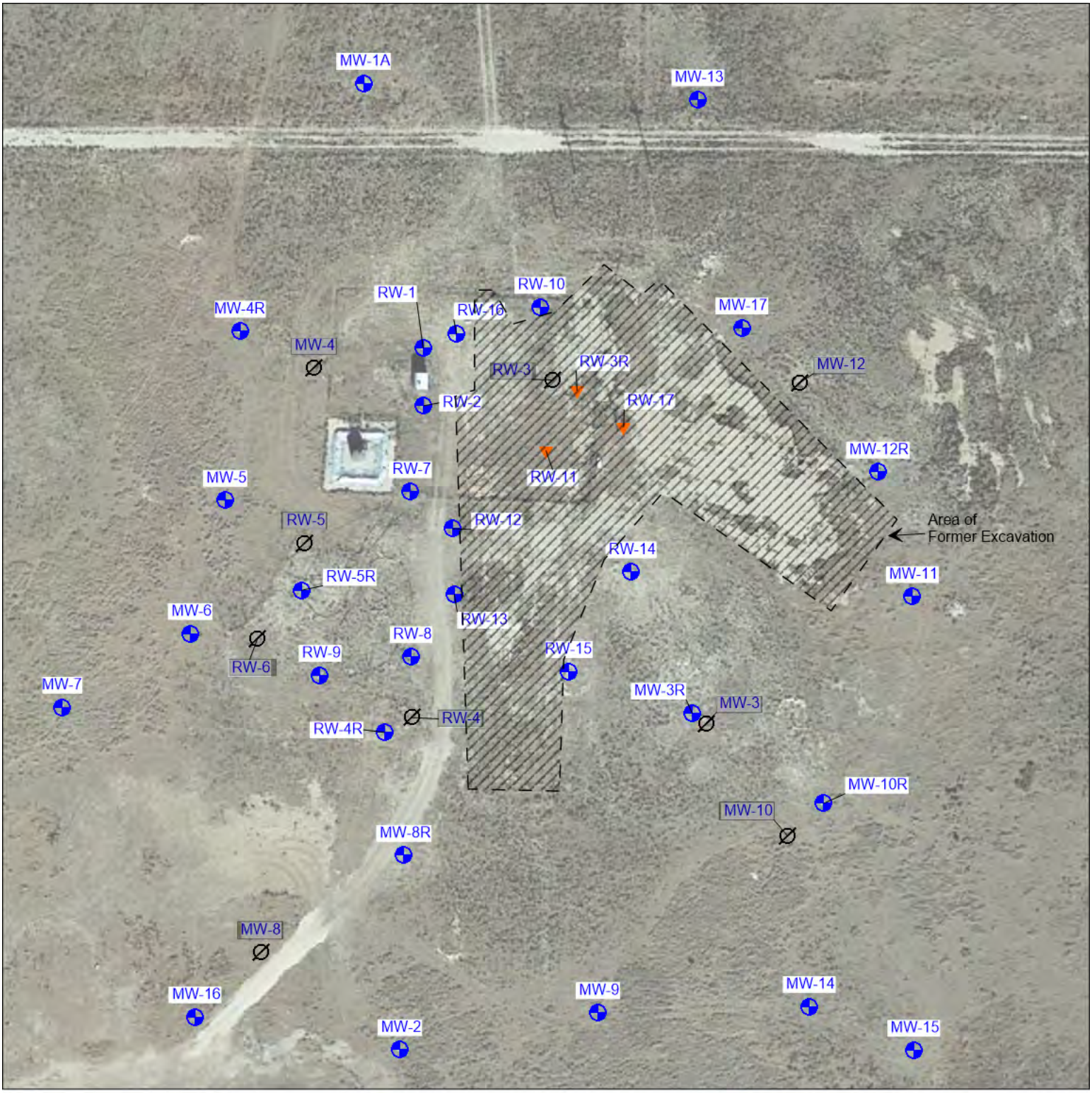
PLAINS ALL AMERICAN PIPELINE COMPANY
DARR ANGELL #4 SRS2001-10876
NMOCD REMEDIATION PERMIT AP-007
ANNUAL REPORT OF GROUNDWATER MONITORING
AND REMEDIATION IN 2019

SITE LOCATION MAP

PROJECT 11209899

February 4, 2020

FIGURE 1



- Well Location
- Plugged Well Location
- Well Equipped with Remediation Pump

0 FT 50 FT 100 FT

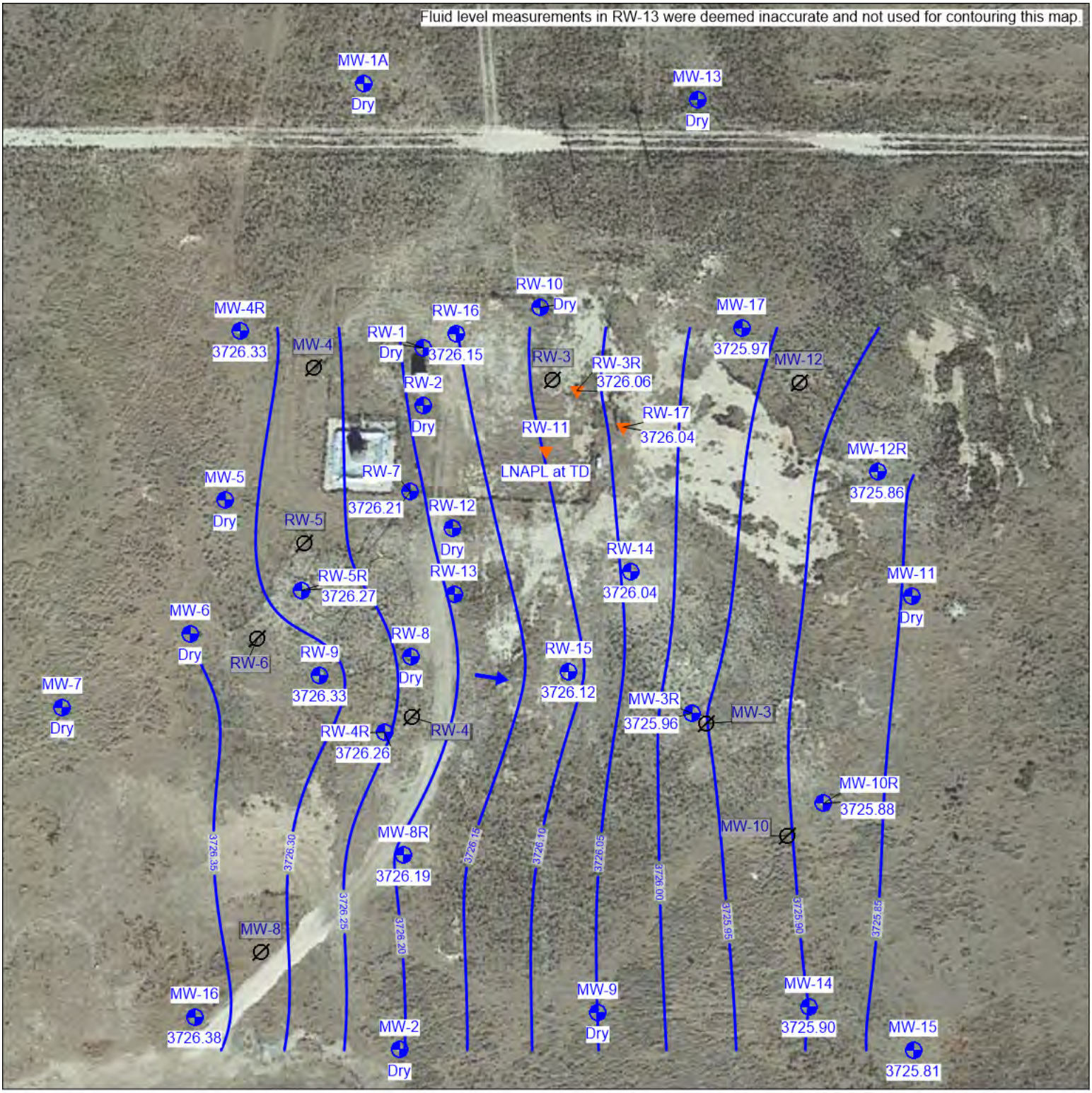
PLAINS ALL AMERICAN PIPELINE COMPANY
DARR ANGELL #4 SRS 2001-10876
NMOCD REMEDIATION PERMIT NUMBER AP-007
ANNUAL REPORT OF MONITORING AND REMEDIATION IN 2019

SITE DETAILS MAP

PROJECT 11209899

FEBRUARY 4, 2020

FIGURE 2



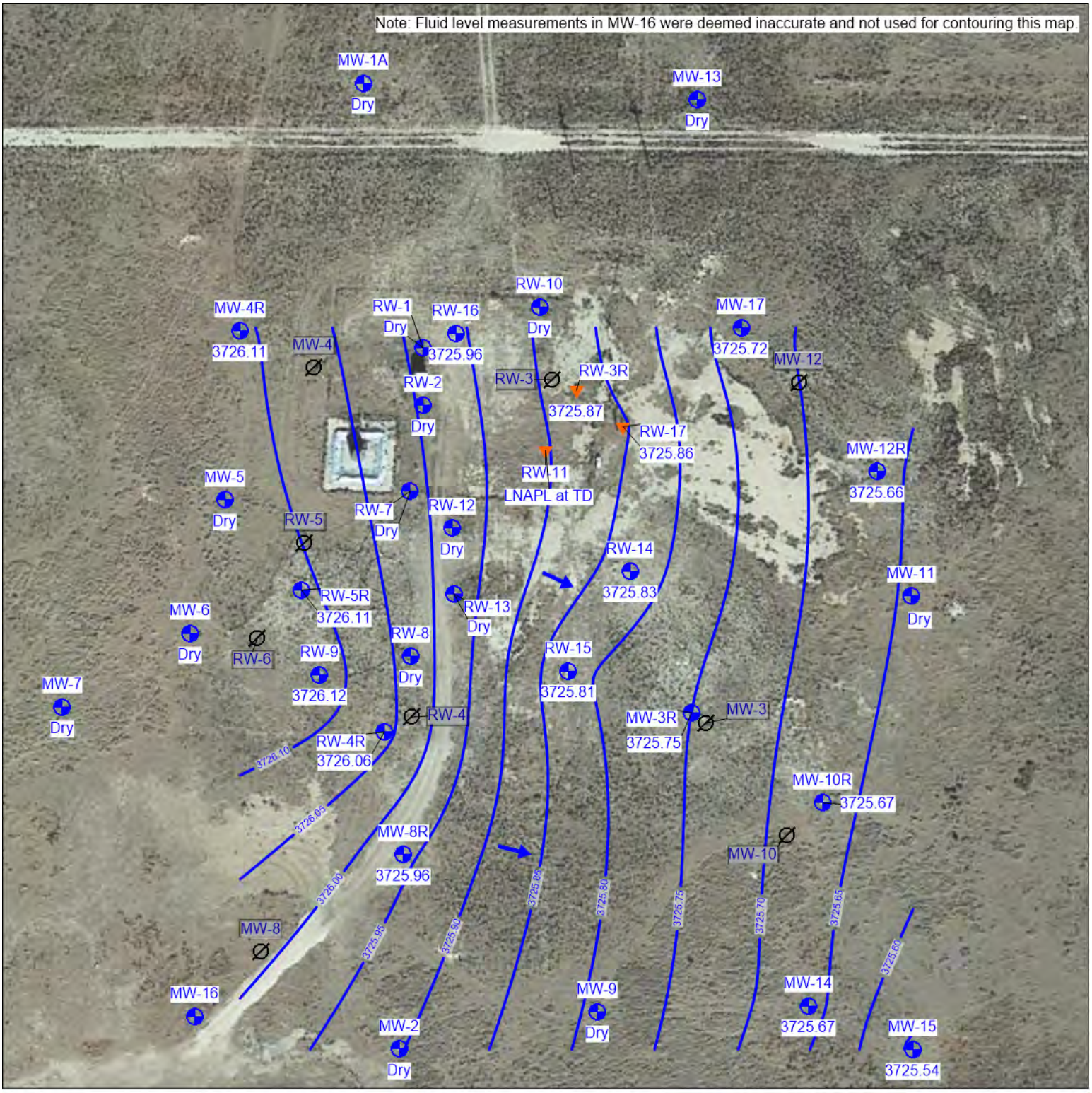
PLAINS ALL AMERICAN PIPELINE COMPANY
DARR ANGELL #4 SRS 2001-10876
NMOCD REMEDIATION PERMIT NUMBER AP-007
ANNUAL REPORT OF MONITORING AND REMEDIATION IN 2019

MAP OF THE POTENTIOMETRIC SURFACE FEBRUARY 26, 2019

PROJECT 11209899

FEBRUARY 26, 2019

FIGURE 3



Well Location
Plugged Well Location
Well Equipped with Remediation Pump
2589.91 Elevation of Potentiometric Surface (famsl)
Direction of Groundwater Flow

0 FT 50 FT 100 FT

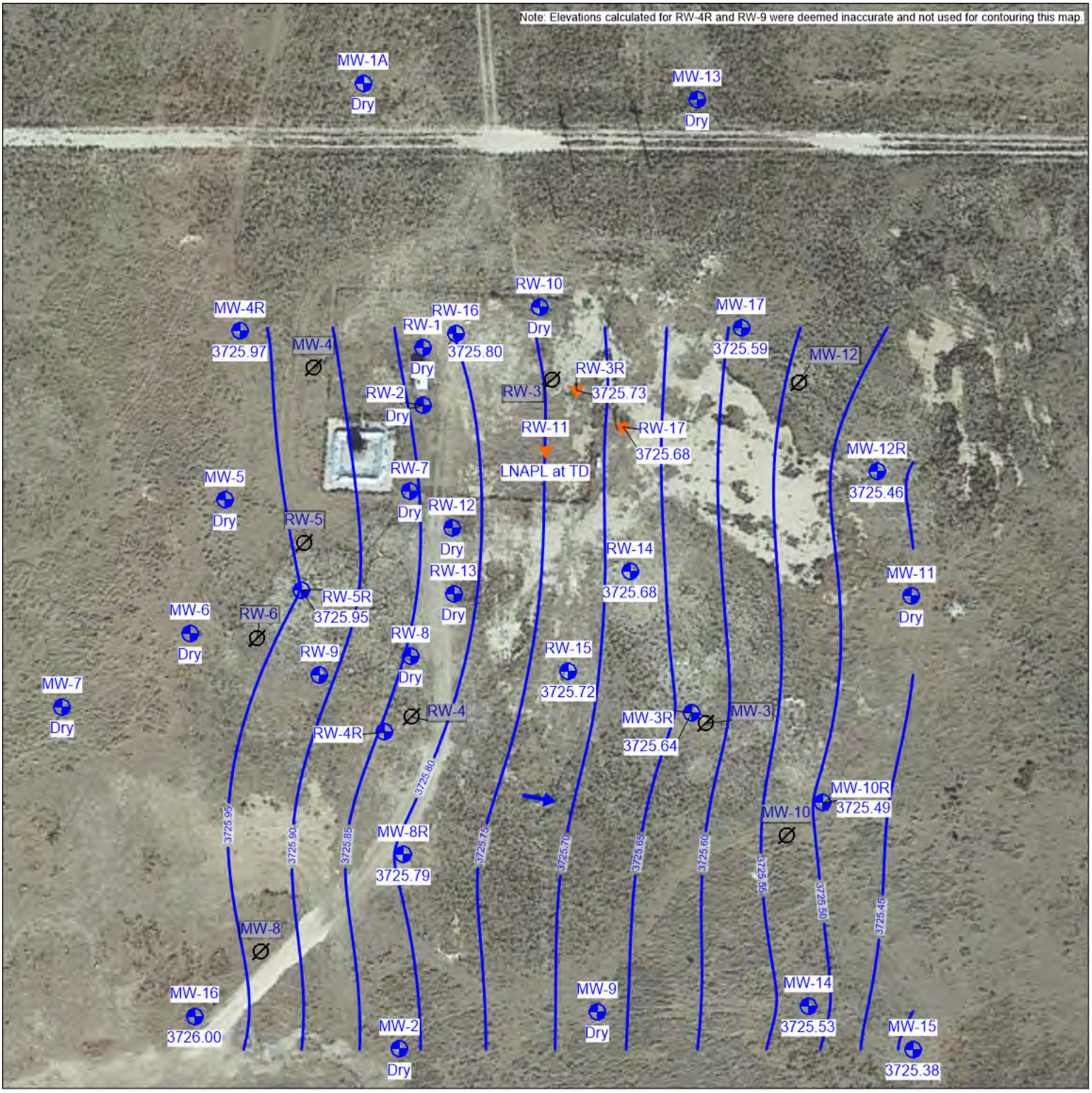
PLAINS ALL AMERICAN PIPELINE COMPANY
DARR ANGELL #4 SRS 2001-10876
NMOCD REMEDIATION PERMIT NUMBER AP-007
ANNUAL REPORT OF MONITORING AND REMEDIATION IN 2019

MAP OF THE POTENTIOMETRIC SURFACE MAY 20, 2019

PROJECT 11209899

MAY 20, 2019

FIGURE 4



Well Location
Plugged Well Location
Well Equipped with Remediation Pump
2589.91 Elevation of Potentiometric Surface (famsl)
Direction of Groundwater Flow

0 FT 50 FT 100 FT

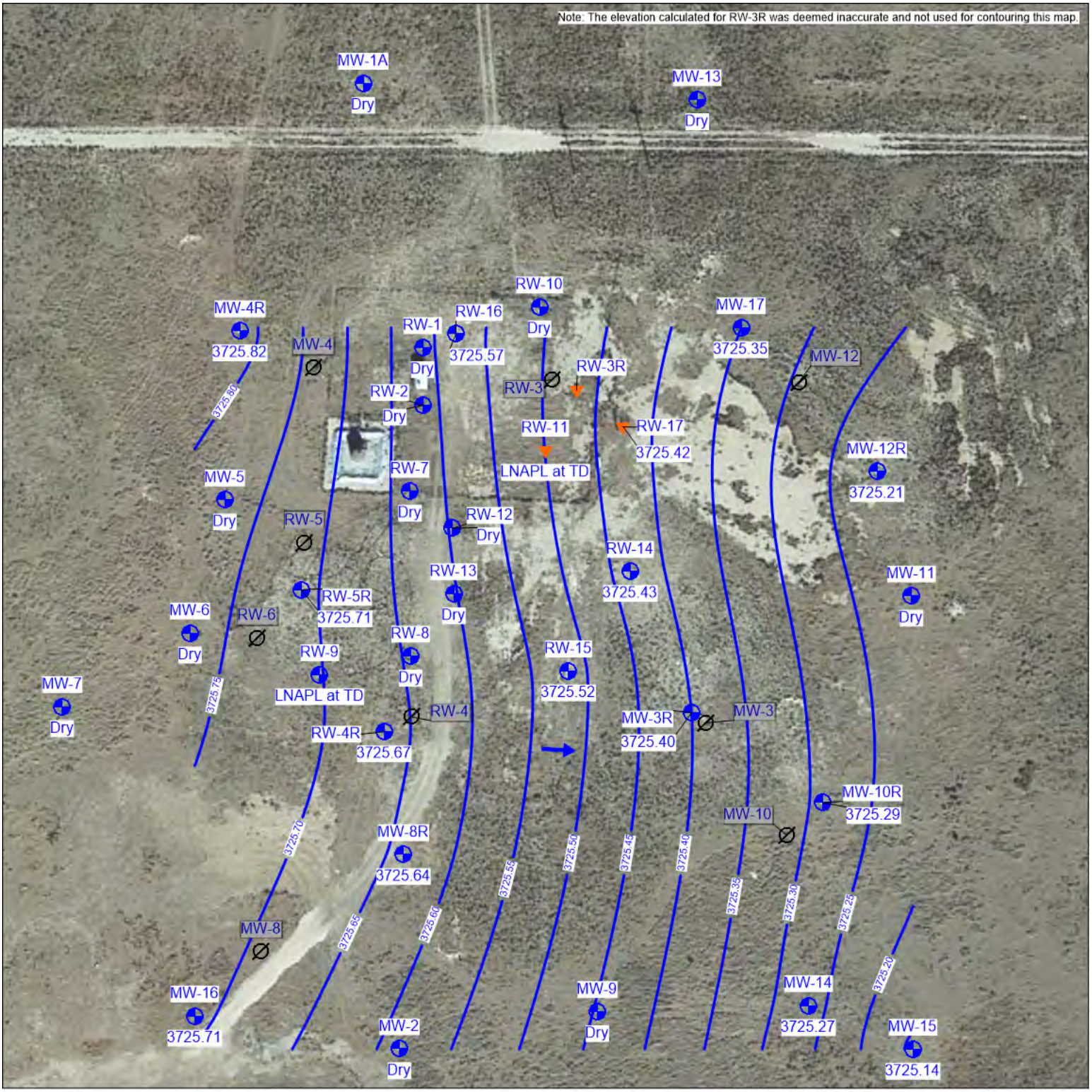
PLAINS ALL AMERICAN PIPELINE COMPANY
DARR ANGELL #4 SRS 2001-10876
NMOCD REMEDIATION PERMIT NUMBER AP-007
ANNUAL REPORT OF MONITORING AND REMEDIATION IN 2019

MAP OF THE POTENTIOMETRIC SURFACE JULY 22, 2019

PROJECT 11209899

JULY 22, 2019

FIGURE 5



- Well Location
- Plugged Well Location
- Well Equipped with Remediation Pump
- 2589.91 Elevation of Potentiometric Surface (famsl)
- Direction of Groundwater Flow

0 FT 50 FT 100 FT

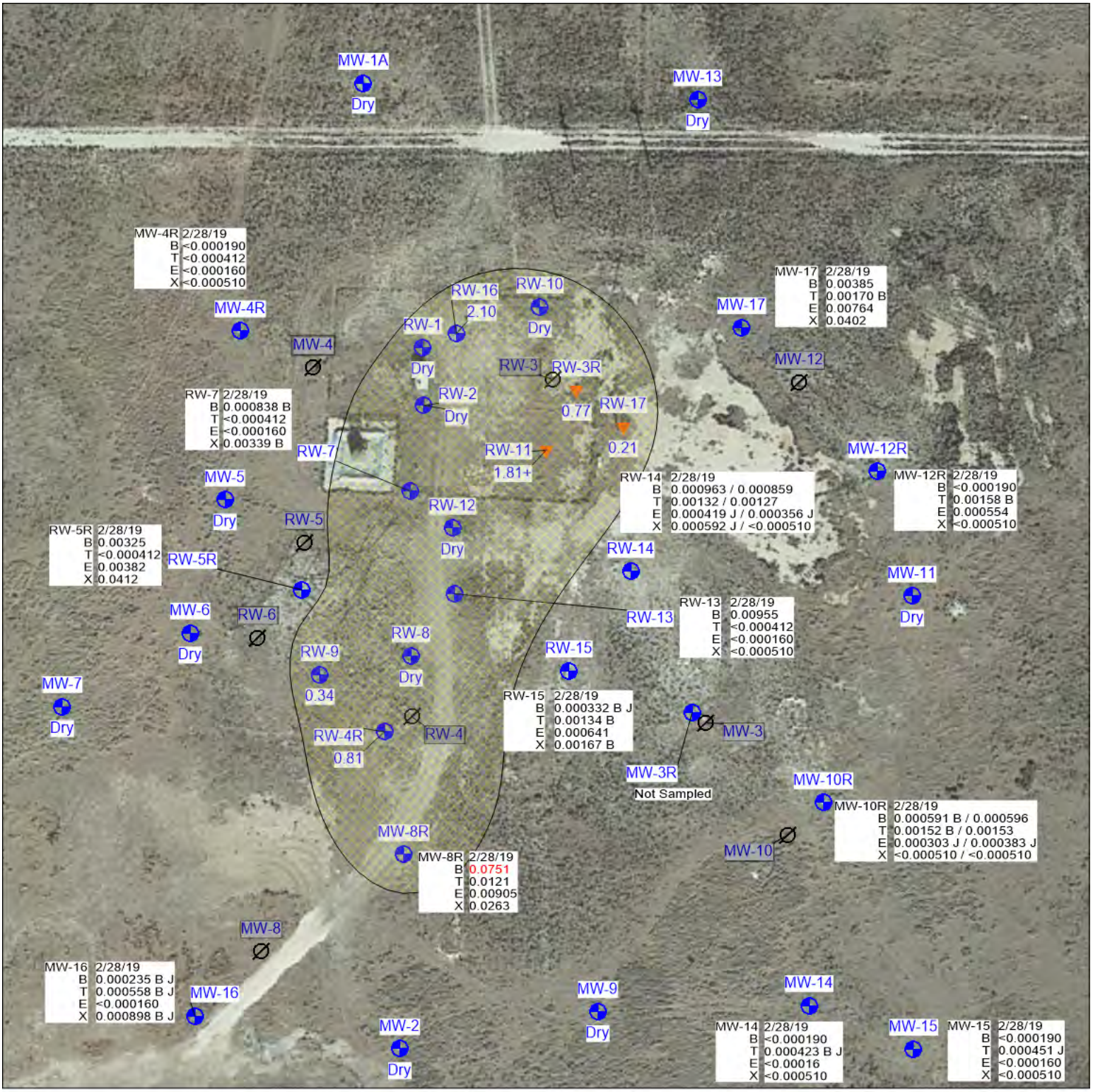
PLAINS ALL AMERICAN PIPELINE COMPANY
DARR ANGELL #4 SRS 2001-10876
NMOCD REMEDIATION PERMIT NUMBER AP-007
ANNUAL REPORT OF MONITORING AND REMEDIATION IN 2019

MAP OF THE POTENTIOMETRIC SURFACE OCTOBER 21, 2019

PROJECT 11209899

OCTOBER 21, 2019

FIGURE 6



SAMPLE LOCATION — MW-2 — 11/11/18 — DATE SAMPLED
BENZENE — B — 0.0231 — ANALYTICAL RESULT (mg/l). RED FONT INDICATES CONCENTRATION EXCEEDS NMWQCC HUMAN HEALTH STD.
TOLUENE — T — <0.00100
ETHYLBENZENE — E — 0.00240
XYLENES — X — 0.0113 / 0.0113 — SECOND RESULTS ARE FIELD DUPLICATES
SPECIFIC PAH — 0.00126 — PAHS--ONLY EXCEEDANCES OF NMWQCC OR NMOCD STANDARDS ARE POSTED

- Well Location
- Plugged Well Location
- Well Equipped with Remediation Pump
- 3.25 Thickness of LNAPL (ft.)
- Approximate Area Exceeding Regulatory Standards

0 FT 50 FT 100 FT

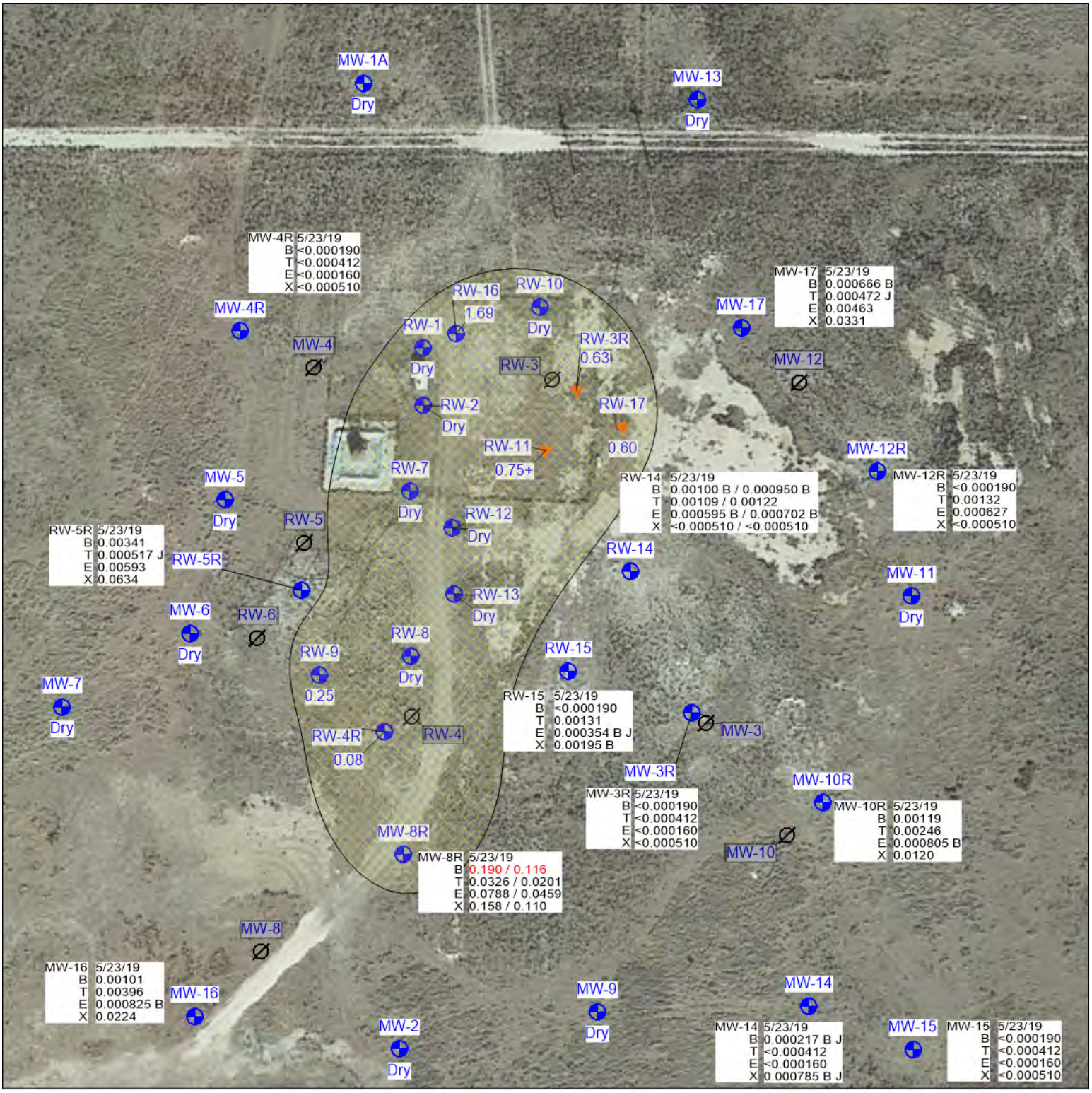
PLAINS ALL AMERICAN PIPELINE COMPANY
DARR ANGELL #4, SRS 2001-10876
NMOCD REMEDIATION PERMIT NUMBER AP-007
ANNUAL REPORT OF MONITORING AND REMEDIATION IN 2019

DISSOLVED BTEX IN GROUNDWATER
FEBRUARY 28, 2019

PROJECT 11209899

FEBRUARY 28, 2019

FIGURE 7



SAMPLE LOCATION — MW-2 — 11/11/18 — DATE SAMPLED
BENZENE — B — 0.0231 — ANALYTICAL RESULT (mg/l). RED FONT INDICATES CONCENTRATION EXCEEDS NMWQCC HUMAN HEALTH STD.
TOLUENE — T — <0.00100
ETHYLBENZENE — E — 0.00240
XYLENES — X — 0.0113 / 0.0113 — SECOND RESULTS ARE FIELD DUPLICATES
SPECIFIC PAH — 0.00126 — PAHS--ONLY EXCEEDANCES OF NMWQCC OR NMOCD STANDARDS ARE POSTED

- Well Location
- Plugged Well Location
- Well Equipped with Remediation Pump
- 3.25 Thickness of LNAPL (ft.)
- Approximate Area Exceeding Regulatory Standards

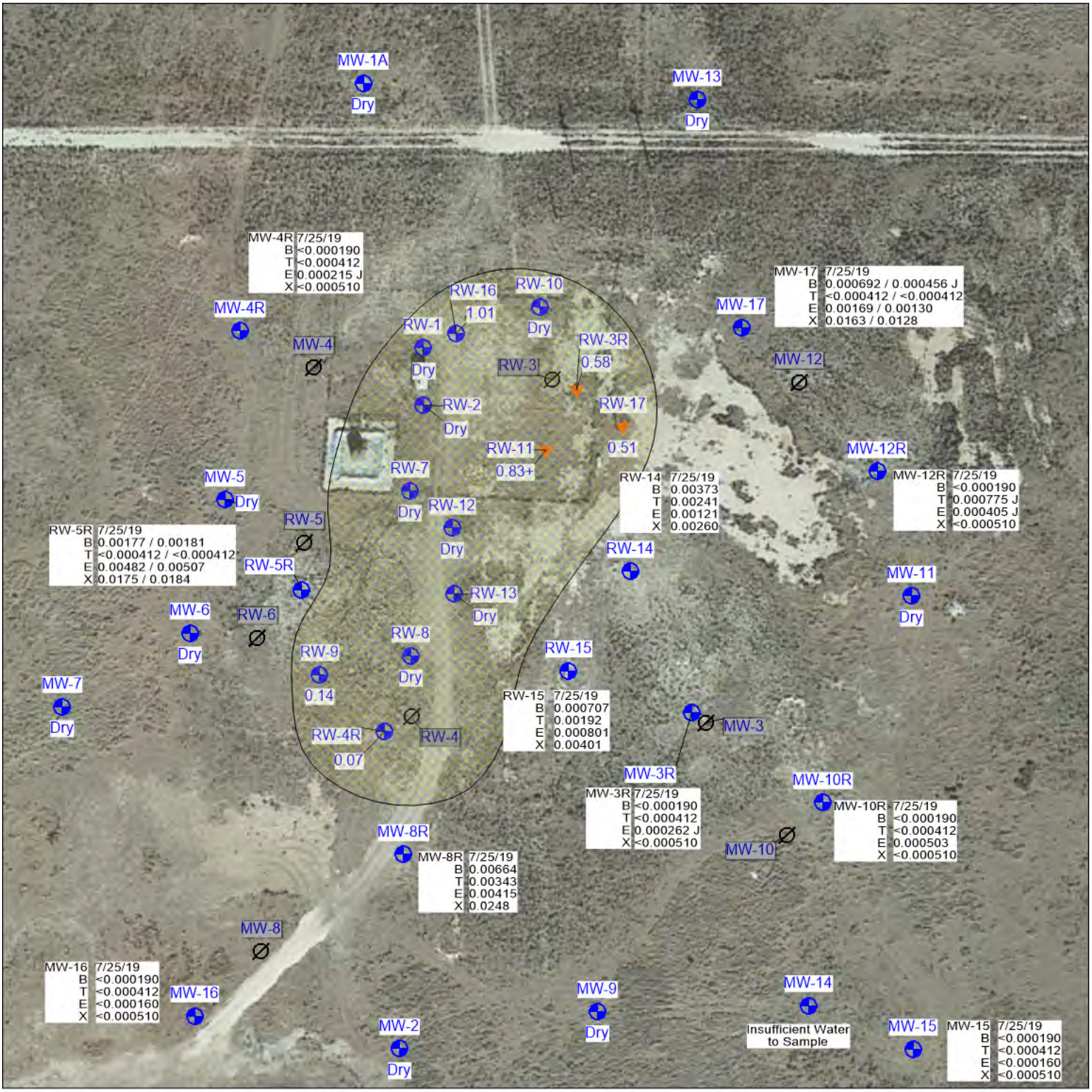
0 FT 50 FT 100 FT

PLAINS ALL AMERICAN PIPELINE COMPANY
DARR ANGELL #4, SRS 2001-10876
NMOCD REMEDIATION PERMIT NUMBER AP-007
ANNUAL REPORT OF MONITORING AND REMEDIATION IN 2019
DISSOLVED BTEX IN GROUNDWATER
MAY 23, 2019

PROJECT 11209899

MAY 23, 2019

FIGURE 8



SAMPLE LOCATION — MW-2 — 11/11/18 — DATE SAMPLED
BENZENE — B — 0.0231 — ANALYTICAL RESULT (mg/l). RED FONT INDICATES CONCENTRATION EXCEEDS NMWQCC HUMAN HEALTH STD.
TOLUENE — T — <0.00100
ETHYLBENZENE — E — 0.00240
XYLENES — X — 0.0113 / 0.0113 — SECOND RESULTS ARE FIELD DUPLICATES
SPECIFIC PAH — 0.00126 — PAHS--ONLY EXCEEDANCES OF NMWQCC OR NMOCD STANDARDS ARE POSTED

- Well Location
- Plugged Well Location
- Well Equipped with Remediation Pump
- 3.25 Thickness of LNAPL (ft.)
- Approximate Area Exceeding Regulatory Standards

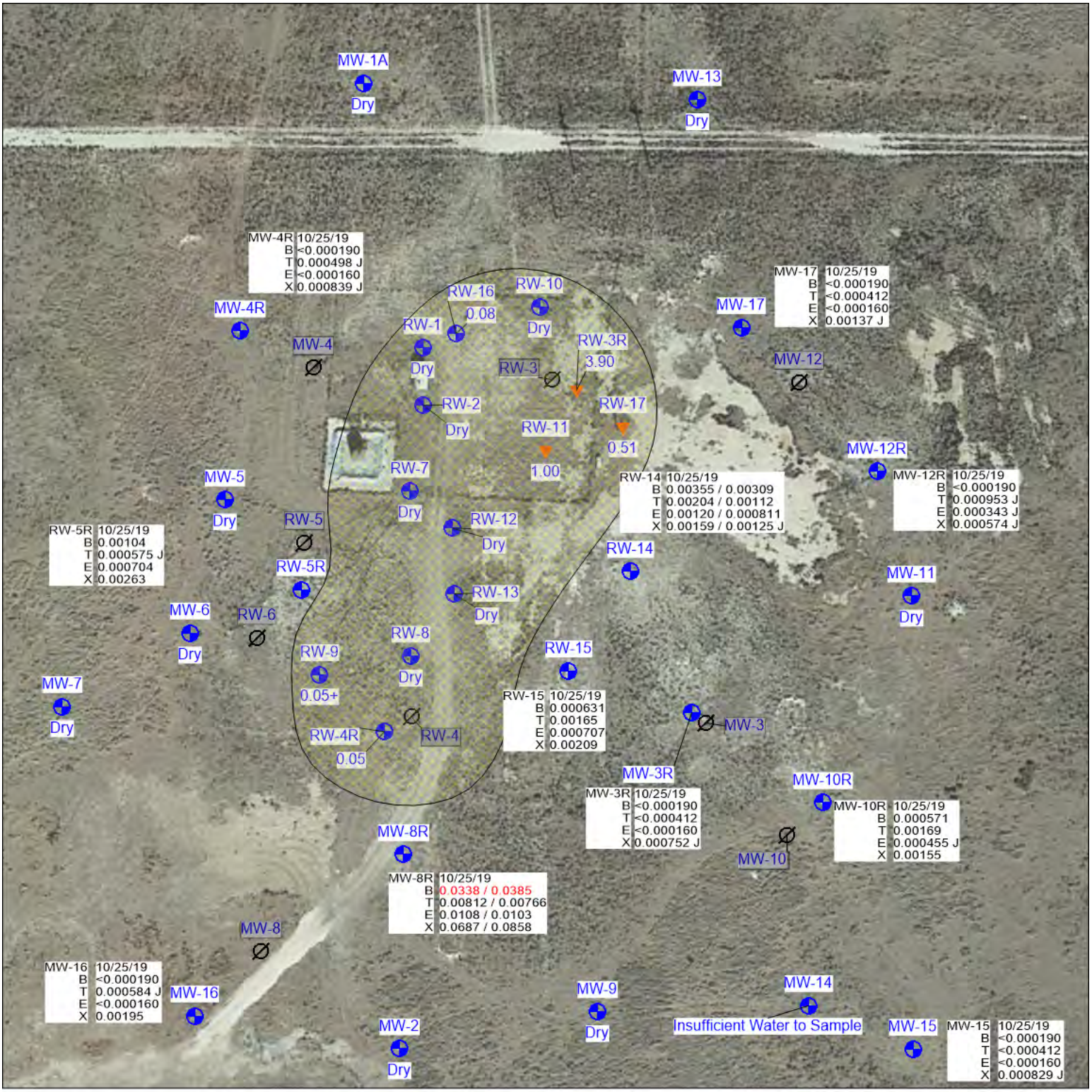
0 FT 50 FT 100 FT

PLAINS ALL AMERICAN PIPELINE COMPANY
DARR ANGELL #4, SRS 2001-10876
NMOCD REMEDIATION PERMIT NUMBER AP-007
ANNUAL REPORT OF MONITORING AND REMEDIATION IN 2019
DISSOLVED BTEX IN GROUNDWATER
JULY 25, 2019

PROJECT 11209899

JULY 25, 2019

FIGURE 9



SAMPLE LOCATION — MW-2 — 11/11/18 — DATE SAMPLED
BENZENE — B — 0.0231 — ANALYTICAL RESULT (mg/l). RED FONT INDICATES CONCENTRATION EXCEEDS NMWQCC HUMAN HEALTH STD.
TOLUENE — T — <0.00100
ETHYLBENZENE — E — 0.00240
XYLENES — X — 0.0113 / 0.0113 — SECOND RESULTS ARE FIELD DUPLICATES
SPECIFIC PAH — 0.00126 — PAHS--ONLY EXCEEDANCES OF NMWQCC OR NMOCD STANDARDS ARE POSTED

- Well Location
- Plugged Well Location
- Well Equipped with Remediation Pump
- 3.25 Thickness of LNAPL (ft.)
- Approximate Area Exceeding Regulatory Standards

N

0 FT 50 FT 100 FT

GHD

PLAINS ALL AMERICAN PIPELINE COMPANY
DARR ANGELL #4, SRS 2001-10876
NMOCD REMEDIATION PERMIT NUMBER AP-007
ANNUAL REPORT OF MONITORING AND REMEDIATION IN 2019
DISSOLVED BTEX IN GROUNDWATER
OCTOBER 25, 2019

PROJECT 11209899

OCTOBER 25, 2019

FIGURE 10

Tables

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)
MW-1A	3802.65	2/26/18				Dry	74.18	40-65 (2 in.)			
MW-1A	3802.65	5/29/18				Dry	74.18				
MW-1A	3802.65	8/27/18				Dry	74.18				
MW-1A	3802.65	11/26/18				Dry	74.17				
MW-1A	3802.65	2/26/19				Dry					
MW-1A	3802.65	5/20/19				Dry	74.03				
MW-1A	3802.65	7/22/19				Dry					
MW-1A	3802.65	10/21/19				Dry	74.19				
MW-2	3798.32	2/26/18				Dry	68.73	41-66 (2 in.)			
MW-2	3798.32	5/29/18				Dry	68.73				
MW-2	3798.32	8/27/18				Dry	68.73				
MW-2	3798.32	11/26/18				Dry	68.72				
MW-2	3798.32	2/26/19				Dry					
MW-2	3798.32	5/20/19				Dry					
MW-2	3798.32	7/22/19				Dry					
MW-2	3798.32	10/21/19				Dry	68.70				
MW-3R	3799.85	2/26/18	72.98		0.00	3726.87	84.04	61.5-81.5 (2 in.)			
MW-3R	3799.85	5/29/18	73.25		0.00	3726.60	84.01				
MW-3R	3799.85	8/27/18	73.39		0.00	3726.46	84.04				
MW-3R	3799.85	11/26/18	73.65		0.00	3726.20	84.04				
MW-3R	3799.85	2/26/19	73.89		0.00	3725.96					
MW-3R	3799.85	5/20/19	74.10		0.00	3725.75			0.0	5.0	
MW-3R	3799.85	7/22/19	74.21		0.00	3725.64					
MW-3R	3799.85	7/25/19							0.0	3.0	
MW-3R	3799.85	10/21/19	74.45		0.00	3725.40				3.0	
MW-4R	3799.39	2/26/18	72.15		0.00	3727.24	90.29				
MW-4R	3799.39	5/29/18	72.41		0.00	3726.98	90.21				
MW-4R	3799.39	8/27/18	72.58		0.00	3726.81	90.29				
MW-4R	3799.39	11/26/18	72.85		0.00	3726.54	90.29				
MW-4R	3799.39	2/26/19	73.06		0.00	3726.33					

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)
MW-4R	3799.39	2/26/19								8.5	
MW-4R	3799.39	4/30/19							0.1	0.1	
MW-4R	3799.39	5/20/19	73.28		0.00	3726.11			0.0	8.0	
MW-4R	3799.39	7/22/19	73.42		0.00	3725.97					
MW-4R	3799.39	7/25/19							0.0	6.0	
MW-4R	3799.39	10/21/19	73.57		0.00	3725.82				6.5	
MW-5	3799.29	2/26/18				Dry	70.14	47-67 (2 in.)			
MW-5	3799.29	5/29/18				Dry	70.13				
MW-5	3799.29	8/27/18				Dry	70.14				
MW-5	3799.29	11/26/18				Dry	70.14				
MW-5	3799.29	2/26/19				Dry					
MW-5	3799.29	5/20/19				Dry					
MW-5	3799.29	7/22/19				Dry					
MW-5	3799.29	10/21/19				Dry	70.13				
MW-6	3798.55	2/26/18				Dry	69.23	47-67 (2 in.)			
MW-6	3798.55	5/29/18				Dry	69.25				
MW-6	3798.55	8/27/18				Dry	69.23				
MW-6	3798.55	11/26/18				Dry	69.20				
MW-6	3798.55	2/26/19				Dry					
MW-6	3798.55	5/20/19				Dry					
MW-6	3798.55	7/22/19				Dry					
MW-6	3798.55	10/21/19				Dry	69.20				
MW-7	3798.24	2/26/18				Dry	73.64	47-67 (2 in.)			
MW-7	3798.24	5/29/18				Dry	73.61				
MW-7	3798.24	8/27/18				Dry	68.69				
MW-7	3798.24	11/26/18				Dry	68.68				
MW-7	3798.24	2/26/19				Dry					
MW-7	3798.24	5/20/19				Dry					
MW-7	3798.24	7/22/19				Dry					
MW-7	3798.24	10/21/19				Dry	68.70				

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)
MW-8R	3798.47	2/26/18	71.38		0.00	3727.09	88.84				
MW-8R	3798.47	5/29/18	71.66		0.00	3726.81	88.77				
MW-8R	3798.47	8/27/18	71.79		0.00	3726.68	88.84				
MW-8R	3798.47	11/26/18	72.06		0.00	3726.41	88.84				
MW-8R	3798.47	2/26/19	72.28		0.00	3726.19					
MW-8R	3798.47	2/26/19								8.0	
MW-8R	3798.47	4/30/19	72.38		0.00	3726.09			0.0	3.0	
MW-8R	3798.47	5/20/19	72.51		0.00	3725.96			0.0	8.00	
MW-8R	3798.47	6/11/19							0.0	3.0	
MW-8R	3798.47	7/22/19	72.68		0.00	3725.79				40.1	
MW-8R	3798.47	7/25/19							0.0	5.0	
MW-8R	3798.47	9/3/19							0.0	3.0	
MW-8R	3798.47	10/21/19	72.83		0.00	3725.64				6.0	
MW-8R	3798.47	12/11/19								3.0	
MW-9	3797.73	2/26/18				Dry	69.45	47-67 (2 in.)			
MW-9	3797.73	5/29/18				Dry	69.48				
MW-9	3797.73	8/27/18				Dry	69.45				
MW-9	3797.73	11/26/18				Dry	69.41				
MW-9	3797.73	2/26/19				Dry					
MW-9	3797.73	5/20/19				Dry					
MW-9	3797.73	7/22/19				Dry					
MW-9	3797.73	10/21/19				Dry	69.40				
MW-10R	3797.99	2/26/18	71.22		0.00	3726.77	89.07				
MW-10R	3797.99	5/29/18	71.50		0.00	3726.49	89.30				
MW-10R	3797.99	8/27/18	71.62		0.00	3726.37	89.07				
MW-10R	3797.99	11/26/18	71.89		0.00	3726.10	89.07				
MW-10R	3797.99	2/26/19	72.11		0.00	3725.88					
MW-10R	3797.99	2/26/19								8.5	
MW-10R	3797.99	5/20/19	72.32		0.00	3725.67			0.0	8.5	
MW-10R	3797.99	7/22/19	72.50		0.00	3725.49					

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)
MW-10R	3797.99	7/25/19							0.0	6.0	
MW-10R	3797.99	9/3/19							0.0	3.0	
MW-10R	3797.99	10/21/19	72.7		0.00	3725.29				6.0	
MW-11	3798.67	2/26/18				Dry	70.18	47-67 (2 in.)			
MW-11	3798.67	5/29/18				Dry	70.20				
MW-11	3798.67	8/27/18				Dry	70.18				
MW-11	3798.67	11/26/18				Dry	70.15				
MW-11	3798.67	2/26/19				Dry					
MW-11	3798.67	5/20/19				Dry					
MW-11	3798.67	7/22/19				Dry					
MW-11	3798.67	10/21/19				Dry	70.12				
MW-12R	3800.06	2/26/18	73.32		0.00	3726.74	79.79	59.5-79.5 (2 in)			
MW-12R	3800.06	5/29/18	73.60		0.00	3726.46	79.60				
MW-12R	3800.06	8/27/18	73.73		0.00	3726.33	79.79				
MW-12R	3800.06	11/26/18	73.98		0.00	3726.08	79.79				
MW-12R	3800.06	2/26/19	74.20		0.00	3725.86					
MW-12R	3800.06	2/26/19								2.5	
MW-12R	3800.06	5/20/19	74.40		0.00	3725.66			0.0	2.0	
MW-12R	3800.06	7/22/19	74.60		0.00	3725.46					
MW-12R	3800.06	7/25/19							0.0	1.0	
MW-12R	3800.06	10/21/19	74.85		0.00	3725.21				1.5	
MW-13	3801.72	2/26/18					69.75	47-67 (2 in.)			
MW-13	3801.72	5/29/18				Dry	69.78				
MW-13	3801.72	8/27/18				Dry	69.75				
MW-13	3801.72	11/26/18				Dry	69.75				
MW-13	3801.72	2/26/19				Dry					
MW-13	3801.72	5/20/19				Dry					
MW-13	3801.72	7/22/19				Dry					
MW-13	3801.72	10/21/19				Dry	69.72				

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)
MW-14	3798.18	2/26/18	71.45		0.00	3726.73	73.03	(2 in.)			
MW-14	3798.18	5/29/18	71.72		0.00	3726.46	72.91				
MW-14	3798.18	8/27/18	71.82		0.00	3726.36	73.03				
MW-14	3798.18	11/26/18	72.10		0.00	3726.08	73.08				
MW-14	3798.18	2/26/19	72.28		0.00	3725.90					
MW-14	3798.18	2/26/19								0.5	
MW-14	3798.18	5/20/19	72.51		0.00	3725.67			0.0	0.0	
MW-14	3798.18	7/22/19	72.65		0.00	3725.53					
MW-14	3798.18	10/21/19	72.91		0.00	3725.27	73.08				
MW-15	3798.04	2/26/18	71.38		0.00	3726.66	73.68	(2 in.)			
MW-15	3798.04	5/29/18	71.65		0.00	3726.39	73.50				
MW-15	3798.04	8/27/18	71.76		0.00	3726.28	73.68				
MW-15	3798.04	11/26/18	72.03		0.00	3726.01	73.68				
MW-15	3798.04	2/26/19	72.23		0.00	3725.81					
MW-15	3798.04	2/26/19								0.5	
MW-15	3798.04	5/20/19	72.50		0.00	3725.54			0.0	0.0	
MW-15	3798.04	7/22/19	72.66		0.00	3725.38					
MW-15	3798.04	10/21/19	72.90		0.00	3725.14					
MW-16	3798.01	2/26/18	70.75		0.00	3727.26	73.94	(2 in.)			
MW-16	3798.01	5/29/18	71.01		0.00	3727.00	73.80				
MW-16	3798.01	8/27/18	71.16		0.00	3726.85	73.94				
MW-16	3798.01	11/26/18	71.40		0.00	3726.61	73.94				
MW-16	3798.01	2/26/19	71.63		0.00	3726.38					
MW-16	3798.01	2/26/19								1.0	
MW-16	3798.01	5/20/19	72.10		0.00	3725.91			0.0	0.75	
MW-16	3798.01	7/22/19	72.01		0.00	3726.00					
MW-16	3798.01	10/21/19	72.30		0.00	3725.71					
MW-17	3800.10	2/26/18	73.23		0.00	3726.87	91.25				
MW-17	3800.10	5/29/18	73.55		0.00	3726.55	91.10				
MW-17	3800.10	8/27/18	73.63		0.00	3726.47	91.25				

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)
MW-17	3800.10	11/26/18	73.91		0.00	3726.19	91.25				
MW-17	3800.10	2/26/19	74.13		0.00	3725.97					
MW-17	3800.10	2/26/19								8.5	
MW-17	3800.10	5/20/19	74.38		0.00	3725.72			0.0	8.00	
MW-17	3800.10	7/22/19	74.51		0.00	3725.59					
MW-17	3800.10	7/25/19							0.0	5.0	
MW-17	3800.10	9/3/19								3.0	
MW-17	3800.10	10/21/19	74.75		0.00	3725.35				7.0	
RW-1	3799.90	2/26/18				Dry	71.04	45-70 (4 in.)			
RW-1	3799.90	5/29/18				Dry	71.01				
RW-1	3799.90	8/27/18				Dry	71.04				
RW-1	3799.90	11/26/18				Dry	71.05				
RW-1	3799.90	2/26/19				Dry					
RW-1	3799.90	5/20/19				Dry					
RW-1	3799.90	7/22/19				Dry					
RW-1	3799.90	10/21/19				Dry	71.05				
RW-2	3799.67	2/26/18				Dry	71.77	44-69 (4 in.)			
RW-2	3799.67	5/29/18				Dry	71.75				
RW-2	3799.67	8/27/18				Dry	71.92				
RW-2	3799.67	11/26/18				Dry	71.89				
RW-2	3799.67	2/26/19				Dry					
RW-2	3799.67	5/20/19				Dry					
RW-2	3799.67	7/22/19				Dry					
RW-2	3799.67	10/21/19				Dry	71.85				
RW-3R	3800.09	2/26/18	75.13	72.66	2.47	3726.96	83.94				
RW-3R	3800.09	5/29/18	74.45	73.10	1.35	3726.73	83.71	61.5-81.5 (4 in.)			
RW-3R	3800.09	8/27/18	75.08	73.19	1.89	3726.54	83.94				
RW-3R	3800.09	11/26/18	76.63	73.19	3.44	3726.25	83.94				
RW-3R	3800.09	2/20/19							0.8		252.0
RW-3R	3800.09	2/26/19	74.65	73.88	0.77	3726.06					

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)
RW-3R	3800.09	5/20/19	74.73	74.10	0.63	3725.87					
RW-3R	3800.09	7/22/19	74.83	74.25	0.58	3725.73					
RW-3R	3800.09	9/3/19							2.9	0.1	
RW-3R	3800.09	10/21/19	77.90	74.00	3.90	3725.35				3	
RW-3R	3800.09								6	0.3	
RW-3R	3800.09	12/18/19							2	1	
RW-3R	3800.09	12/23/19							1	1	
RW-4R	3799.68	2/26/18	72.93	72.48	0.45	3727.11	84.64				
RW-4R	3799.68	5/29/18	73.11	72.73	0.38	3726.88					
RW-4R	3799.68	8/27/18	73.80	72.77	1.03	3726.71	84.69				
RW-4R	3799.68	11/14/18	73.90	73.08	0.82	3726.44		61.5-81.5 (4 in.)			
RW-4R	3799.68	11/26/18	73.40	73.17	0.23	3726.47	84.69				
RW-4R	3799.68	12/5/18	73.55	73.18	0.37	3726.43					
RW-4R	3799.68	2/26/19	74.08	73.27	0.81	3726.26					
RW-4R	3799.68	3/27/19							0.8		420.0
RW-4R	3799.68	4/17/19	74.08	73.41	0.67	3726.14			0.3		630.0
RW-4R	3799.68	4/30/19	73.81	73.48	0.33	3726.14					
RW-4R	3799.68	5/15/19	74.14	73.51	0.63	3726.05			0.25		420.0
RW-4R	3799.68	5/15/19									
RW-4R	3799.68	5/20/19	73.68	73.60	0.08	3726.06					
RW-4R	3799.68	6/12/19	74.29	73.57	0.72	3725.97			0.25		420.0
RW-4R	3799.68	6/25/19							0.3	1.5	
RW-4R	3799.68	7/17/19	74.26	73.65	0.61	3725.91					294.0
RW-4R	3799.68	7/22/19	73.82	73.75	0.07	3725.92					
RW-4R	3799.68	7/30/19	73.97	73.71	0.26	3725.92					
RW-4R	3799.68	8/20/19	74.36	73.73	0.63	3725.83					336
RW-4R	3799.68	9/3/19							.1	1.4	
RW-4R	3799.68	9/10/19	74.15	73.86	0.29	3725.76					336
RW-4R	3799.68	10/16/19	74.34	73.92	0.42	3725.68					420
RW-4R	3799.68	10/21/19	74.05	74.00	0.05	3725.67					
RW-4R	3799.68	11/19/19	74.34	74.02	0.32	3725.60					336.0
RW-4R	3799.68	12/4/19	74.20	74.11	0.09	3725.55					420

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)
RW-4R	3799.68	12/18/19								0.25	
RW-5R	3799.26	2/26/18	72.06		0.00	3727.20	87.23				
RW-5R	3799.26	5/29/18	72.33		0.00	3726.93	87.14				
RW-5R	3799.26	8/27/18	72.49		0.00	3726.77	87.23				
RW-5R	3799.26	11/26/18	72.75		0.00	3726.51	87.23				
RW-5R	3799.26	2/26/19	72.99		0.00	3726.27					
RW-5R	3799.26	2/26/19								28.0	
RW-5R	3799.26	4/30/19	71.08		0.00	3728.18			0.0	3.0	
RW-5R	3799.26	5/20/19	73.15		0.00	3726.11			0.0	28.00	
RW-5R	3799.26	6/11/19							0.0	3.0	
RW-5R	3799.26	7/22/19	73.31		0.00	3725.95					
RW-5R	3799.26	7/25/19							0.0	22.0	
RW-5R	3799.26	9/3/19									
RW-5R	3799.26	10/21/19	73.55		0.00	3725.71				22.0	
RW-7	3799.47	2/26/18	72.43		0.00	3727.04	73.73	(4 in.)			
RW-7	3799.47	5/29/18	72.69		0.00	3726.78	73.65				
RW-7	3799.47	8/27/18	72.84		0.00	3726.63	73.64				
RW-7	3799.47	11/26/18	73.09		0.00	3726.38	73.74				
RW-7	3799.47	2/26/19	73.26		0.00	3726.21					
RW-7	3799.47	4/30/19	73.43		0.00	3726.04			0.0	3.0	
RW-7	3799.47	5/20/19				Dry					
RW-7	3799.47	7/22/19				Dry					
RW-7	3799.47	10/21/19				Dry	73.73				
RW-8	3800.41	2/26/18				Dry	73.02	(4 in.)			
RW-8	3800.41	5/29/18				Dry	73.01				
RW-8	3800.41	8/27/18				Dry	73.02				
RW-8	3800.41	11/26/18				Dry	73.02				
RW-8	3800.41	2/26/19				Dry					
RW-8	3800.41	5/20/19				Dry					
RW-8	3800.41	7/22/19				Dry					

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)
RW-8	3800.41	10/21/19				Dry	73.00				
RW-9	3800.02	2/26/18	72.91	72.88	0.03	3727.13	74.51	(4 in.)			
RW-9	3800.02	5/29/18	73.19	73.17	0.02	3726.85					
RW-9	3800.02	8/27/18	73.48	73.25	0.23	3726.73	74.51				
RW-9	3800.02	11/26/18	73.79	73.46	0.33	3726.50	74.51				
RW-9	3800.02	2/26/19	73.97	73.63	0.34	3726.33					
RW-9	3800.02	4/30/19	73.89	73.72	0.17	3726.27					
RW-9	3800.02	4/30/19							0.1	0.1	
RW-9	3800.02	5/20/19	74.10	73.85	0.25	3726.12					
RW-9	3800.02	6/25/19							0.1		
RW-9	3800.02	7/22/19	74.25	74.11	0.14	3725.88					
RW-9	3800.02	7/30/19	74.29	74.10	0.19	3725.88					
RW-9	3800.02	9/3/19							0.1	0.1	
RW-9	3800.02	10/21/19		74.45	0.06+	LNAPL at TD	74.50				
RW-10	3801.18	2/26/18				Dry	69.98	(4 in.)			
RW-10	3801.18	5/29/18				Dry	69.98				
RW-10	3801.18	8/27/18				Dry	69.98				
RW-10	3801.18	11/26/18				Dry	69.98				
RW-10	3801.18	2/26/19				Dry					
RW-10	3801.18	5/20/19				Dry					
RW-10	3801.18	7/22/19				Dry					
RW-10	3801.18	10/21/19				Dry	69.97				
RW-11	3798.72	2/26/18	73.00	71.01	1.99	3727.33	73.03	(4 in.)			
RW-11	3798.72	5/29/18	72.31	71.90	0.41	3726.74					
RW-11	3798.72	8/27/18	72.87	71.96	0.91	3726.59	73.03				
RW-11	3798.72	11/26/18		71.54	1.99+	LNAPL at TD	73.53				
RW-11	3798.72	2/26/19		71.72	1.81+	LNAPL at TD					
RW-11	3798.72	5/20/19		72.60	0.75+	LNAPL at TD					
RW-11	3798.72	7/22/19		72.55	0.83+	LNAPL at TD					
RW-11	3798.72	10/21/19		72.53	1.00+	LNAPL at TD	73.40				

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)
RW-12	3800.23	2/26/18				Dry	72.57	(4 in.)			
RW-12	3800.23	5/29/18				Dry	72.59				
RW-12	3800.23	8/27/18				Dry	72.68				
RW-12	3800.23	11/26/18				Dry	72.68				
RW-12	3800.23	2/26/19				Dry					
RW-12	3800.23	5/20/19				Dry					
RW-12	3800.23	7/22/19				Dry					
RW-12	3800.23	10/21/19				Dry	72.68				
RW-13	3800.62	2/26/18	73.51		0.00	3727.11	74.11	(4 in.)			
RW-13	3800.62	5/29/18	73.79		0.00	3726.83	74.04				
RW-13	3800.62	8/27/18				Dry	74.11				
RW-13	3800.62	11/26/18	73.83		0.00	3726.79	74.11				
RW-13	3800.62	2/26/19	73.79		0.00	3726.83				0.8	
RW-13	3800.62	5/20/19				Dry					
RW-13	3800.62	7/22/19				Dry					
RW-13	3800.62	10/21/19				Dry	74.10				
RW-14	3800.13	2/26/18	73.21		0.00	3726.92	83.92	61.5-81.5 (4 in.)			
RW-14	3800.13	5/29/18	73.51		0.00	3726.62	83.70				
RW-14	3800.13	8/27/18	73.61		0.00	3726.52	83.92				
RW-14	3800.13	11/26/18	73.88		0.00	3726.25	83.92				
RW-14	3800.13	2/26/19	74.09		0.00	3726.04				19.0	
RW-14	3800.13	5/20/19	74.30		0.00	3725.83			0.0	18.0	
RW-14	3800.13	7/22/19	74.45		0.00	3725.68					
RW-14	3800.13	7/25/19							0.0	14.0	
RW-14	3800.13	9/3/19								3.0	
RW-14	3800.13	10/21/19	74.7		0.00	3725.43				14.0	
RW-14	3800.13	12/11/19								3.0	
RW-15	3800.23	2/26/18	73.28		0.00	3726.95	83.92	61.5-81.5 (4 in.)			
RW-15	3800.23	5/29/18	73.50		0.00	3726.73	82.01				

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)
RW-15	3800.23	8/27/18	73.64		0.00	3726.59	83.92				
RW-15	3800.23	11/26/18	73.91		0.00	3726.32	83.92				
RW-15	3800.23	2/26/19	74.11		0.00	3726.12				19.0	
RW-15	3800.23	5/20/19	74.42		0.00	3725.81			0.0	17.0	
RW-15	3800.23	7/22/19	74.51		0.00	3725.72					
RW-15	3800.23	7/25/19							0.0	15.0	
RW-15	3800.23	9/3/19							0.0	3.0	
RW-15	3800.23	10/21/19	74.71		0.00	3725.52				15.0	
RW-15	3800.23	12/11/19								3.0	
RW-16	3800.19	2/26/18	73.29	73.08	0.21	3727.07	91.42				
RW-16	3800.19	5/29/18	73.90	73.25	0.65	3726.82					
RW-16	3800.19	8/27/18	73.91	73.44	0.47	3726.66	91.42				
RW-16	3800.19	11/26/18		73.55	1.40+						
RW-16	3800.19	2/26/19	75.74	73.64	2.10	3726.15					
RW-16	3800.19	4/30/19	76.31	73.67	2.64	3726.02			2.0	0.5	
RW-16	3800.19	5/20/19	75.60	73.91	1.69	3725.96					
RW-16	3800.19	6/11/19							0.5	0.5	
RW-16	3800.19	6/25/19							0.6	0.0	
RW-16	3800.19	7/22/19	75.21	74.20	1.01	3725.80					
RW-16	3800.19	10/21/19	74.68	74.60	0.08	3725.57					
RW-17	3799.82	2/26/18	76.96	72.04	4.92	3726.85	89.78				
RW-17	3799.82	5/29/18	77.72	72.20	5.52	3726.57					
RW-17	3799.82	8/27/18	74.17	73.12	1.05	3726.50	89.78				
RW-17	3799.82	11/26/18	74.92	73.28	1.64	3726.23	89.78				
RW-17	3799.82	2/20/19							0.8		252.0
RW-17	3799.82	2/26/19	73.95	73.74	0.21	3726.04					
RW-17	3799.82	5/20/19	74.45	73.85	0.60	3725.86					
RW-17	3799.82	6/11/19							0.1	0.0	
RW-17	3799.82	6/25/19							0.1	0	
RW-17	3799.82	7/22/19	74.55	74.04	0.51	3725.68					
RW-17	3799.82	10/21/19	74.81	74.30	0.51	3725.42					

Table 1

Summary of Fluid Level Measurements - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Well ID	Elevation of Top of Casing (famsl)	Date	Depth to Groundwater (fbtoc)	Depth to LNAPL (fbtoc)	LNAPL Thickness (ft.)	Elevation of the Potentiometric Surface (famsl)	Measured Well Depth (fbtoc)	Well Screen Interval (fbgs) (Well Diameter)	Volume Product Removed (gal.)	Volume Groundwater Bailed (gal.)	Volume Groundwater Removed by EFR (gal.)

Notes:

1. famsl - feet above mean sea level
2. fbtoc - feet below top of casing.
3. LNAPL - Light non-aqueous phase liquid.
4. NA - Elevation not available becasue LNAPL was present at bottom of well
5. fbgs - feet below ground surface
6. Blue shaded cells indicate groundwater monitoring events
7. NS - No sample collected due to lack of water column or pump in well.
8. MW-4R, MW-8R, MW-10R, MW-17, RW-5R, RW-16, and RW-17 were installed in February & March 2017
9. "+" entered with LNAPL thickness indicates that the base of LNAPL was below the bottom of the well.

Table 2

Summary of Dissolved Hydrocarbons in Groundwater - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
		NMWQCC Human Health Standards			
		0.01	0.75	0.75	0.62
MW-3R	3/1/18	**0.00300**	<0.00200	<0.00200	<0.00200
MW-3R	6/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-3R	8/28/18	<0.000190	<0.000412	<0.000160	**0.000576 J**
MW-3R	11/28/18	<0.000190	<0.000412	<0.000160	<0.000510
MW-3R (Dup1)	11/28/18	<0.000190	<0.000412	<0.000160	<0.000510
MW-3R	5/23/19	<0.000190	<0.000412	<0.000160	<0.000510
MW-3R	7/25/19	<0.000190	<0.000412	**0.000262 J**	<0.000510
MW-3R	10/25/19	<0.000190	<0.000412	<0.000160	0.000752 J
MW-4R	3/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-4R	6/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-4R	8/28/18	<0.000190	<0.000412	<0.000160	<0.000510
MW-4R	11/28/18	<0.000190	<0.000412	<0.000160	<0.000510
MW-4R	2/28/19	<0.000190	<0.000412	<0.000160	<0.000510
MW-4R	5/23/19	<0.000190	<0.000412	<0.000160	<0.000510
MW-4R	7/25/19	<0.000190	<0.000412	**0.000215 J**	<0.000510
MW-4R	10/25/19	<0.000190	0.000498 J	<0.000160	0.000839 J
MW-8R	3/1/18	**0.352**	**0.0146**	**0.0703**	**0.0696**
MW-8R	6/1/18	**0.0709**	**0.0101**	**0.0132**	**0.0209**
MW-8R	8/28/18	**0.921**	**0.604**	**0.324**	**0.705**
MW-8R	11/28/18	**0.623**	**0.297**	**0.325**	**0.546**
MW-8R	2/28/19	**0.0751**	**0.0121**	**0.00905**	**0.0263**
MW-8R	5/23/19	**0.190**	**0.0326**	**0.0788**	**0.158**
MW-8R (DUP-2)	5/23/19	**0.116**	**0.0201**	**0.0459**	**0.110**
MW-8R	7/25/19	**0.00664**	**0.00343**	**0.00415**	**0.0248**
MW-8R	10/25/19	**0.0338**	**0.00812**	**0.0108**	**0.0687**
MW-8R (Dup-2)	10/25/19	**0.0385**	**0.00766**	**0.0103**	**0.0858**
MW-10R	3/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-10R	6/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-10R	8/28/18	**0.000554**	**0.00101**	**0.000372 J**	<0.000510
MW-10R	11/28/18	**0.000400 J**	<0.000412	<0.000160	<0.000510
MW-10R	2/28/19	**0.000591 B**	**0.00152 B**	**0.000303 J**	<0.000510
MW-10R (DUP-1)	2/28/19	**0.000596**	**0.00153**	**0.000383 J**	<0.000510
MW-10R	5/23/19	**0.00119**	**0.00246**	**0.000805 B**	**0.0120**

Table 2

Summary of Dissolved Hydrocarbons in Groundwater - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
		NMWQCC Human Health Standards			
		0.01	0.75	0.75	0.62
MW-10R	7/25/19	<0.000190	<0.000412	**0.000503**	<0.000510
MW-10R	10/25/19	**0.000571**	**0.00169**	**0.000455 J**	**0.00155**
MW-12R	3/1/18	**0.00618**	<0.00200	<0.00200	<0.00200
MW-12R	6/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-12R (DUP-1)	6/1/18	**0.00461**	<0.00200	<0.00200	**0.00290**
MW-12R	8/28/18	**0.000413 J**	**0.00102**	**0.000546**	<0.000510
MW-12R	11/28/18	<0.000190	<0.000412	**0.000386 J**	<0.000510
MW-12R	2/28/19	<0.000190	**0.00158 B**	**0.000554**	<0.000510
MW-12R	5/23/19	<0.000190	**0.00132**	**0.000627**	<0.000510
MW-12R	7/25/19	<0.000190	**0.000775 J**	**0.000405 J**	<0.000510
MW-12R	10/25/19	<0.000190	**0.000953 J**	**0.000343 J**	**0.000574 J**
MW-14	3/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-14	6/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-14	8/28/18	<0.000190	<0.000412	<0.000160	<0.000510
MW-14	11/28/18	<0.000190	<0.000412	<0.000160	<0.000510
MW-14	2/28/19	<0.000190	**0.000423 B J**	<0.000160	<0.000510
MW-14	5/23/19	**0.000217 B J**	<0.000412	<0.000160	**0.000785 B J**
MW-14	10/25/19	Insufficient Water to Sample			
MW-15	3/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-15	6/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-15	8/28/18	<0.000190	<0.000412	<0.000160	<0.000510
MW-15	11/28/18	<0.000190	**0.000441 J**	<0.000160	<0.000510
MW-15	2/28/19	<0.000190	**0.000451 J**	<0.000160	<0.000510
MW-15	5/23/19	<0.000190	<0.000412	<0.000160	<0.000510
MW-15	7/25/19	<0.000190	<0.000412	<0.000160	<0.000510
MW-15	10/25/19	<0.000190	<0.000412	<0.000160	**0.000829 J**
MW-16	3/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-16	6/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-16	8/28/18	<0.000190	<0.000412	<0.000160	<0.000510
MW-16	11/28/18	**0.000316 J**	<0.000412	<0.000160	<0.000510
MW-16	2/28/19	**0.000235 B J**	**0.000558 B J**	<0.000160	**0.000898 B J**
MW-16	5/23/19	**0.00101**	**0.00396**	**0.000825 B**	**0.0224**

Table 2

Summary of Dissolved Hydrocarbons in Groundwater - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
		NMWQCC Human Health Standards			
		0.01	0.75	0.75	0.62
MW-16	7/25/19	<0.000190	<0.000412	<0.000160	<0.000510
MW-16	10/25/19	<0.000190	**0.000584 J**	<0.000160	**0.00195**
MW-17	3/1/18	**0.00847**	**0.00223**	**0.00335**	**0.0146**
MW-17 (DUP-1)	3/1/18	**0.00877**	**0.00201**	**0.00343**	**0.0143**
MW-17	6/1/18	<0.00200	<0.00200	<0.00200	<0.00200
MW-17	8/28/18	**0.00506**	**0.00176**	**0.00360**	**0.0217**
MW-17 (DUP-2)	8/28/18	**0.00794**	**0.00266**	**0.00559**	**0.0339**
MW-17	11/28/18	**0.00227**	**0.00165**	**0.00499**	**0.0273**
MW-17	2/28/19	**0.00385**	**0.00170 B**	**0.00764**	**0.0402**
MW-17	5/23/19	**0.000666 B**	**0.000472 J**	**0.00463**	**0.0331**
MW-17	7/25/19	**0.000692**	<0.000412	**0.00169**	**0.0163**
MW-17 (DUP-2)	7/25/19	**0.000456 J**	<0.000412	**0.00130**	**0.0128**
MW-17	10/25/19	<0.000190	<0.000412	<0.000160	**0.00137 J**
RW-5R	3/1/18	<0.00200	<0.00200	<0.00200	**0.0101**
RW-5R (DUP-2)	3/1/18	<0.00200	<0.00200	<0.00200	**0.0111**
RW-5R	6/1/18	<0.00200	<0.00200	<0.00200	**0.0361**
RW-5R (DUP-2)	6/1/18	<0.00200	<0.00200	<0.00200	**0.0255**
RW-5R	8/28/18	**0.000574**	<0.000412	**0.000846**	**0.0100**
RW-5R (DUP-1)	8/28/18	**0.000615**	<0.000412	**0.000890**	**0.0110**
RW-5R	11/28/18	**0.00175**	<0.000412	**0.00286**	**0.0223**
RW-5R	2/28/19	**0.00325**	<0.000412	**0.00382**	**0.0412**
RW-5R	5/23/19	**0.00341**	**0.000517 J**	**0.00593**	**0.0634**
RW-5R	7/25/19	**0.00177**	<0.000412	**0.00482**	**0.0175**
RW-5R (DUP-1)	7/25/19	**0.00181**	<0.000412	**0.00507**	**0.0184**
RW-5R	10/25/19	**0.00104**	**0.000575 J**	**0.000704**	**0.00263**
RW-7	3/1/18	<0.00200	**0.0109**	**0.00593**	**0.0262**
RW-7	6/1/18	<0.00200	<0.00200	<0.00200	<0.00200
RW-7	8/28/18	**0.000653**	<0.000412	<0.000160	**0.00820**
RW-7	11/28/18	**0.00119**	<0.000412	**0.00297**	**0.0211**
RW-7	2/28/19	**0.000838 B**	<0.000412	<0.000160	**0.00339 B**
RW-7	5/23/19		Dry		
RW-7	7/25/19		Dry		
RW-7	10/25/19		Dry		

Table 2

Summary of Dissolved Hydrocarbons in Groundwater - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
		NMWQCC Human Health Standards			
		0.01	0.75	0.75	0.62
RW-13	3/1/18	**0.0239**	**0.324**	**0.155**	**0.601**
RW-13	2/28/19	**0.00955**	<0.000412	<0.000160	<0.000510
RW-13	5/23/19		Dry		
RW-13	7/25/19		Dry		
RW-13	10/25/19		Dry		
RW-14	3/1/18	<0.00200	<0.00200	<0.00200	<0.00200
RW-14	6/1/18	<0.00200	<0.00200	<0.00200	<0.00200
RW-14	8/28/18	<0.000190	<0.000412	**0.000392 J**	<0.000510
RW-14	11/28/18	<0.000190	**0.000877 J**	<0.000160	<0.000510
RW-14 (Dup2)	11/28/18	<0.000190	<0.000412	<0.000160	<0.000510
RW-14	2/28/19	**0.000963**	**0.00132**	**0.000419 J**	**0.000592 J**
RW-14 (DUP-2)	2/28/19	**0.000859**	**0.00127**	**0.000356 J**	<0.000510
RW-14	5/23/19	**0.00100 B**	**0.00109**	**0.000595 B**	<0.000510
RW-14 (DUP-1)	5/23/19	**0.000950 B**	**0.00122**	**0.000702 B**	<0.000510
RW-14	7/25/19	**0.00373**	**0.00241**	**0.00121**	**0.00260**
RW-14	10/25/19	**0.00355**	**0.00204**	**0.00120**	**0.00159**
RW-14 (Dup-1)	10/25/19	**0.00309**	**0.00112**	**0.000811**	**0.00125 J**
RW-15	3/1/18	<0.00200	<0.00200	<0.00200	<0.00200
RW-15	6/1/18	<0.00200	<0.00200	<0.00200	**0.00216**
RW-15	8/28/18	**0.000461 J**	**0.000414 J**	**0.000413 J**	**0.00110 J**
RW-15	11/28/18	<0.000190	<0.000412	<0.000160	<0.000510
RW-15	2/28/19	**0.000332 B J**	**0.00134 B**	**0.000641**	**0.00167 B**
RW-15	5/23/19	<0.000190	**0.00131**	**0.000354 B J**	**0.00195 B**
RW-15	7/25/19	**0.000707**	**0.00192**	**0.000801**	**0.00401**
RW-15	10/25/19	**0.000631**	**0.00165**	**0.000707**	**0.00209**
Trip Blank	3/1/18	<0.00200	<0.00200	<0.00200	<0.00200
Trip Blank	8/28/18	<0.000190	<0.000412	<0.000160	<0.000510
Trip Blank	2/28/19	**0.000371 B J**	**0.00110 B**	<0.000160	**0.000948 B J**

Table 2

Summary of Dissolved Hydrocarbons in Groundwater - 2018 and 2019
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
		NMWQCC Human Health Standards			
		0.01	0.75	0.75	0.62

Notes:

1. Shaded cells indicate NMOCD Regulatory Limit exceedances
2. Bold font indicates detection.
3. BTEX analyses by EPA Method 8021B.
4. March 2011 analytical results collected by NOVA.
5. MW-4R, MW-8R, MW-10R, MW-17, RW-5R, RW-16, RW-17 were installed in Feb & Mar 2017.
6. Flag J indicates the identification of the analyte is acceptable and the reported result is an estimate.
7. Flag B indicates the same analyte is found in the associated blank.

Table 3

Summary of PAH Compounds in Groundwater
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Sample ID	Sample Date	Anthracene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Benzo(a)anthracene (mg/L)	Benzo(a)pyrene (mg/L)	Benzo(b)fluoranthene (mg/L)	Benzo(g,h,i)perylene (mg/L)	Benzo(k)fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)anthracene (mg/L)	Dibenzofuran (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Indeno(1,2,3-cd)pyrene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	1-Methylnaphthalene (mg/L)	2-Methylnaphthalene (mg/L)
		NMWQCC Regulatory Standards																		
		0.001	0.001	0.001	0.001	0.0002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.03	0.001	0.001	0.03	0.03
MW-1A	12/3/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
MW-1A	12/1/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.000974**	<0.000183	<0.000183	<0.000183	<0.000183
MW-1A	11/20/14	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.000195	<0.00195	<0.000195
MW-2	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-2	12/1/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-3	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-3	12/1/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
MW-3R	12/3/15	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199
MW-3R	11/4/16	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
MW-4	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.000209	<0.000183	<0.000183	<0.000183
MW-4	12/1/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-4R	11/30/17	<0.000191	<0.000191	<0.000191	<0.000191	<0.000191	<0.000191	<0.000191	<0.000191	<0.000191	<0.000191	<0.000191	<0.000191	<0.000191	<0.000191	<0.000382	<0.000191	<0.000191	<0.000191	<0.000191
MW-4R	11/28/18	<0.0000140	<0.0000100	<0.0000120	<0.00000410	<0.0000116	<0.00000212	<0.00000227	<0.0000136	<0.0000108	<0.00000396	**0.00000284 B J**	<0.0000157	<0.00000850	<0.0000148	**0.0000987 B J**	<0.00000820	<0.0000117	<0.00000821	<0.00000902
MW-5	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-5	12/1/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-6	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.000285**	<0.000183	<0.000183	<0.000183	<0.000183	**0.000391**	<0.000183	<0.000183	<0.000183
MW-6	12/1/11	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
MW-7	12/3/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
MW-7	12/1/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-8	12/3/08	<0.000192	<0.000192	<0.000192	<0.000192	<0.000192	<0.000192	<0.000192	<0.000192	<0.000192	<0.000192	**0.00451**	<0.000192	**0.00604**	<0.000192	**0.00205**	**0.00597**	<0.000192	**0.0108**	**0.00967**
MW-8	12/1/09	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	**0.00402**	<0.000917	**0.0617**	<0.000917	<0.000917	**0.00241**	<0.000917	<0.000917	<0.000917
MW-8R	11/30/17	<0.000190	**0.000190**	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	**0.000789**	<0.000190	**0.000323**	<0.000190	**0.0108**	**0.000540**	<0.000190	---	---
MW-8R	11/28/18	**0.000147**	**0.000210**	<0.0000120	<0.00000410	<0.0000116	**0.00000390 J**	<0.00000227	<0.0000136	**0.0000108 J**	<0.00000396	**0.00207**	<0.0000157	**0.00151**	<0.0000148	**0.0311**	**0.00166**	<0.0000117	**0.0245**	**0.0249**
MW-8R	10/25/19	**0.0000497 J**	**0.000113**	<0.000012	<0.0000041	<0.0000116	<0.00000212	<0.00000227	<0.0000136	<0.0000108	<0.00000396	**0.000473**	<0.0000157	**0.000349**	<0.0000148	**0.00112**	**0.000535**	**0.0000117 J**	**0.00106**	**0.000356**
MW-9	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-9	12/1/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-10	12/3/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
MW-10	12/1/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-10R	11/30/17	<0.000189	<0.000189	<0.000189	<0.000189	<0.000189	<0.000189	<0.000189	<0.000189	<0.000189	<0.000189	<0.000189	<0.000189	<0.000189	<0.000189	<0.000378	<0.000189	<0.000189	<0.000189	<0.000189
MW-10R	11/28/18	**0.0000152 J**	<0.0000100	<0.0000120	<0.00000410	<0.0000116	<0.00000212	<0.00000227	<0.0000136	<0.0000108	<0.00000396	**0.00000540 B J**	<0.0000157	<0.00000850	<0.0000148	**0.000157 B J**	**0.0000185 J**	<0.0000117	<0.00000821	<0.00000902
MW-11	12/3/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
MW-11	12/1/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-12	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-12	12/1/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-12R	11/20/14	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199
MW-12R	12/3/15	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199
MW-12R	11/28/18	<0.0000140	**0.0000496 J**	<0.0000120	<0.00000410	<0.0000116	<0.00000212	<0.00000227	<0.0000136	<0.0000108	<0.00000396	**0.000426**	<0.0000157	<0.00000850	<0.0000148	**0.000143 B J**	**0.0000646**	<0.0000117	**0.0000292 J**	**0.0000282 J**
MW-13	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-13	12/1/09	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201	<0.000201
MW-14	12/3/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
MW-14	12/1/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-15	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-15	12/2/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
MW-16	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
MW-16	12/1/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183

Table 3

Summary of PAH Compounds in Groundwater
Plains Pipeline, L.P.
Darr Angell No. 4
Lea County, New Mexico

Sample ID	Sample Date	Anthracene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Benzo(a)anthracene (mg/L)	Benzo(a)pyrene (mg/L)	Benzo(b)fluoranthene (mg/L)	Benzo(g,h,i)perylene (mg/L)	Benzo(k)fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)anthracene (mg/L)	Dibenzofuran (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Indeno(1,2,3-cd)pyrene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	1-Methylnaphthalene (mg/L)	2-Methylnaphthalene (mg/L)
		NMWQCC Regulatory Standards																		
		0.001	0.001	0.001	0.001	0.0002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.03	0.001	0.001	0.03	0.03
MW-17	11/30/17	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000373	<0.000187	<0.000187	**0.000304**	**0.000524**
MW-17	11/28/18	<0.0000280	<0.0000200	<0.0000240	<0.00000820	<0.0000232	<0.00000424	<0.00000454	<0.0000272	<0.0000216	<0.00000792	**0.0000407 J**	<0.0000314	<0.0000170	<0.0000296	**0.000202 B J**	<0.0000164	<0.0000234	**0.0000304 J**	<0.0000180
RW-1	12/3/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	**0.00414**	<0.000184	**0.00669**	<0.000184	**0.0278**	**0.0084**	<0.000184	**0.0518**	**0.0478**
RW-2	12/3/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	**0.0115**	<0.000184	**0.019**	<0.000184	**0.0656**	**0.0227**	<0.000184	**0.166**	**0.153**
RW-2	12/2/09	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	**0.145**	<0.00461	**0.248**	<0.00461	**0.808**	**0.336**	<0.00461	**2.17**	**3.02**
RW-5	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.00133**	<0.000183	**0.00148**	<0.000183	**0.0254**	0.000841	<0.000183	**0.0160**	**0.0144**
RW-5	12/2/09	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	**0.000674**	<0.000187	<0.000187	<0.000187	**0.00763**	<0.000187	<0.000187	**0.00624**	**0.00263**
RW-5	12/7/12	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	**0.00171**	<0.000190	<0.000190	<0.000190	**0.013**	0.00213	<0.000190	**0.0137**	**0.00994**
RW-5R	11/30/17	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000366	<0.000183	<0.000183	---	---
RW-5R	11/28/18	**0.0000170 J**	**0.000197**	<0.0000120	<0.00000410	<0.0000116	<0.00000212	<0.00000227	<0.0000136	<0.0000108	<0.00000396	**0.00163**	<0.0000157	**0.0000252 J**	<0.0000148	**0.000329 B**	**0.00112**	<0.0000117	**0.000480**	**0.0000800 J**
RW-6	12/2/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.00257**	<0.000183	**0.00340**	<0.000183	**0.0382**	**0.00476**	<0.000183	**0.0445**	**0.0553**
RW-6	11/23/10	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.00378**	<0.000183	**0.00513**	<0.000183	**0.0486**	<0.000183	<0.000183	**0.0529**	**0.0633**
RW-6	12/1/11	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
RW-7	12/3/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	**0.0118**	<0.000184	**0.0179**	<0.000184	**0.0942**	**0.0232**	<0.000184	**0.172**	**0.158**
RW-7	12/2/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.0240**	<0.000183	**0.0400**	<0.000183	**0.172**	**0.0570**	<0.000183	**0.408**	**0.506**
RW-7	11/30/17	**0.00140**	**0.00185**	**0.000956**	**0.00311**	**0.00124**	<0.000187	<0.000187	<0.000187	**0.00254**	<0.000187	**0.00258**	**0.000846**	**0.00505**	<0.000187	**0.00324**	**0.0112**	**0.000932**	**0.00775**	**0.00136**
RW-7	11/28/18	<0.0000420	**0.000841**	<0.0000360	**0.00204**	<0.0000348	**0.000420**	**0.000333**	<0.0000408	**0.000939**	<0.0000119	**0.00115**	<0.0000471	**0.00239**	<0.0000444	**0.00165**	**0.00557**	**0.00183**	**0.00310**	**0.00270**
RW-8	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.00891**	<0.000183	**0.0128**	<0.000183	**0.0496**	**0.0164**	<0.000183	**0.115**	**0.106**
RW-8	12/2/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.00772**	<0.000183	**0.0106**	<0.000183	**0.0534**	**0.0145**	<0.000183	**0.102**	**0.128**
RW-9	12/3/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	**0.00642**	<0.000184	**0.00907**	<0.000184	**0.0574**	**0.0112**	<0.000184	**0.0859**	**0.0791**
RW-9	12/2/09	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	**0.0320**	<0.000917	**0.0488**	<0.000917	**0.215**	**0.0679**	<0.000917	**0.473**	**0.625**
RW-10	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.0193**	<0.000183	**0.0265**	<0.000183	**0.121**	**0.0346**	<0.000183	**0.279**	**0.257**
RW-11	12/3/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	**0.00494**	<0.000184	**0.0076**	<0.000184	**0.053**	**0.0093**	<0.000184	**0.066**	**0.0609**
RW-12	12/3/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.0143**	<0.000183	**0.0193**	<0.000183	**0.11**	**0.0242**	<0.000183	**0.198**	**0.182**
RW-12	12/2/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	**0.0081**	<0.000184	**0.0127**	<0.000184	**0.049**	**0.0182**	<0.000184	**0.112**	**0.141**
RW-13	12/3/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	**0.00409**	<0.000184	**0.0131**	<0.000184	**0.0187**	<0.000184	**0.0608**	**0.0234**	<0.000184	**0.139**	**0.128**
RW-13	12/2/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.000891**	<0.000183	**0.0013**	<0.000183	**0.00094**	**0.00156**	<0.000183	**0.00489**	**0.00337**
RW-13	11/30/17	**0.00299**	**0.00345**	**0.00227**	**0.00573**	**0.000502**	**0.000718**	**0.000692**	**0.000996**	**0.00396**	**0.000279**	**0.00792**	**0.00179**	**0.0115**	**0.000277**	**0.00741**	**0.0205**	**0.00262**	**0.0303**	**0.00513**
RW-14	11/20/14	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198
RW-14	12/3/15	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198	<0.000198
RW-15	11/20/14	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190	<0.000190
RW-15	12/3/15	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	**0.00098**	<0.000200	**0.00103**	<0.000200	**0.00952**	**0.000442**	<0.000200	**0.0111**	**0.00569**
RW-15	11/4/16	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
RW-15	11/30/17	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000366	<0.000183	<0.000183	<0.000183	<0.000183

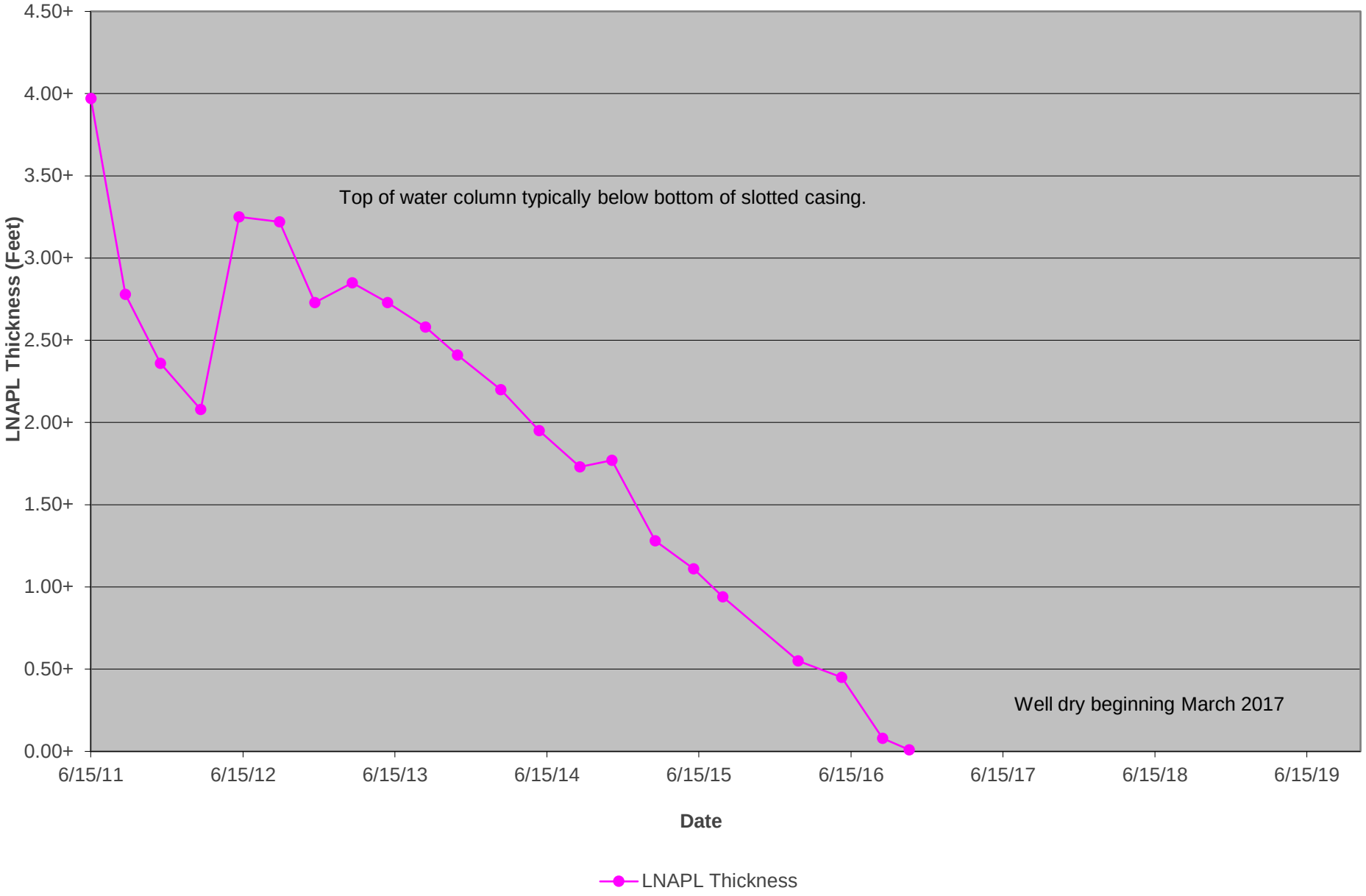
Notes:

1. Shaded cells indicates exceedance of New Mexico Water Quality Control Commission regulatory standard.
2. Bold indicates detection.
3. PAH analyses by EPA Method 8270.
4. 2008 through 2010 analytical results collected by NOVA.
5. Flag B--The same analyte is found in the associated blank.
6. Flag J--The identification of the analyte is acceptable; the reported value is an estimate.

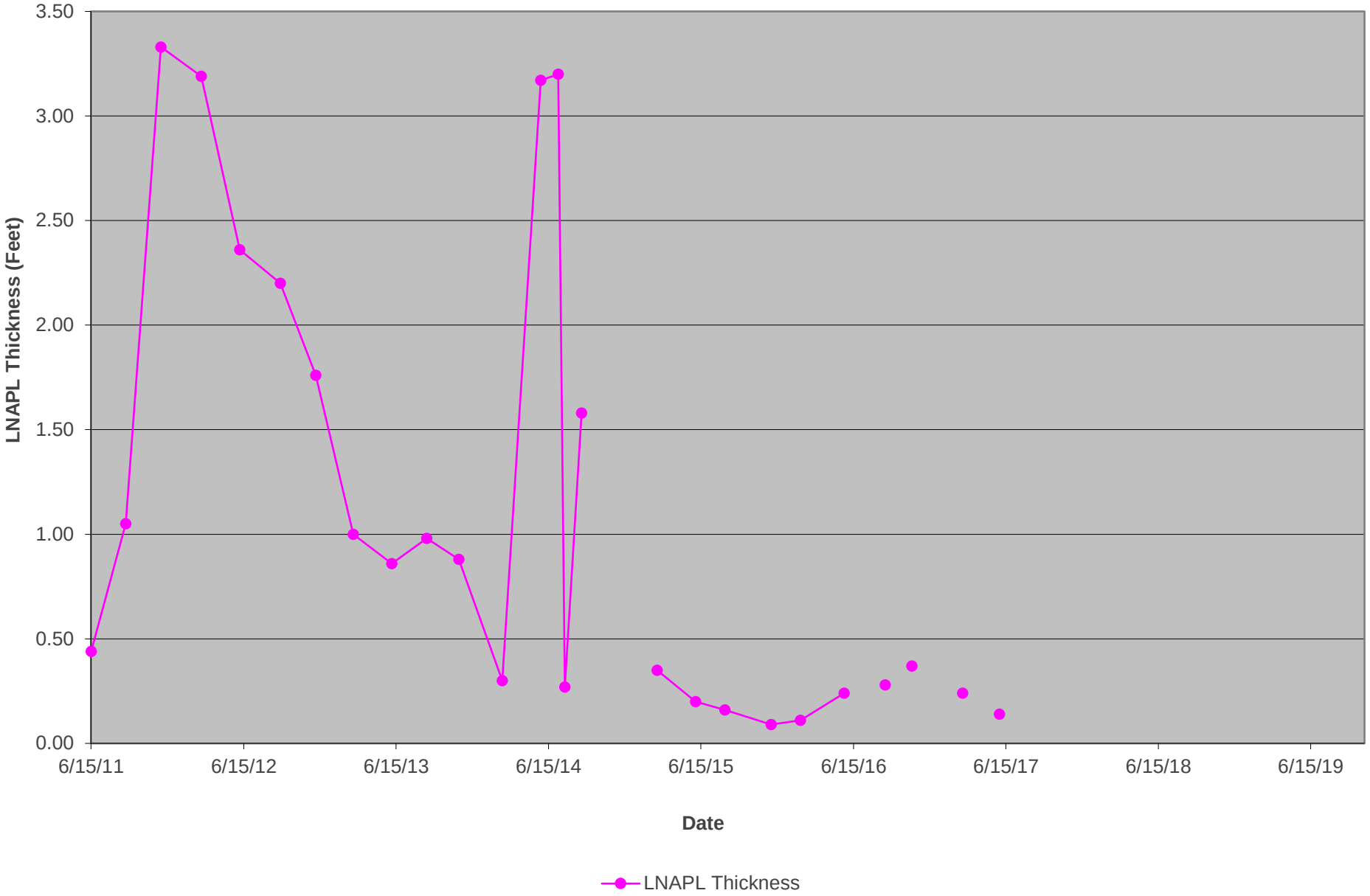
Appendices

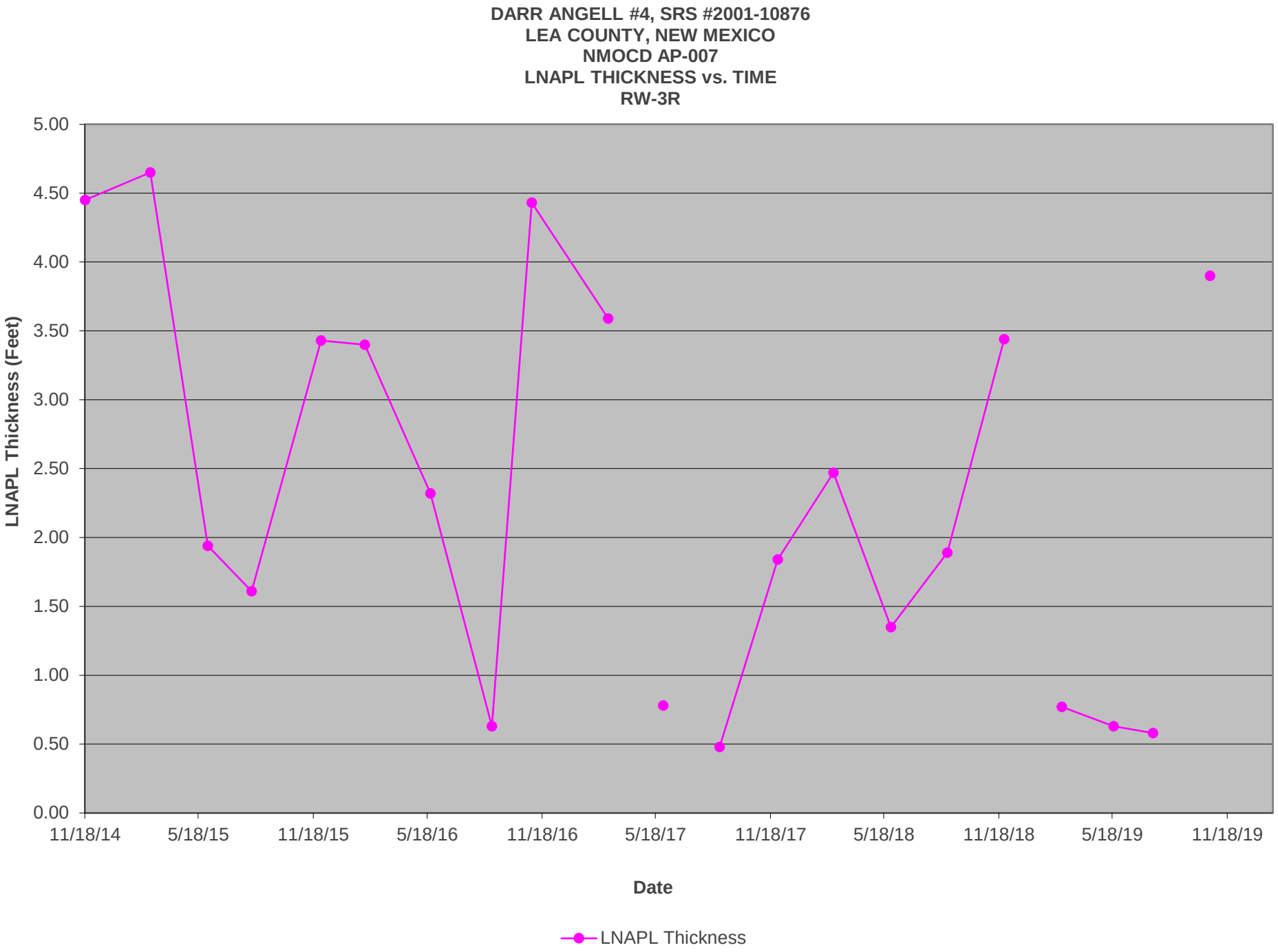
Appendix A
Charts of LNAPL Thicknesses in Recovery Wells vs. Time

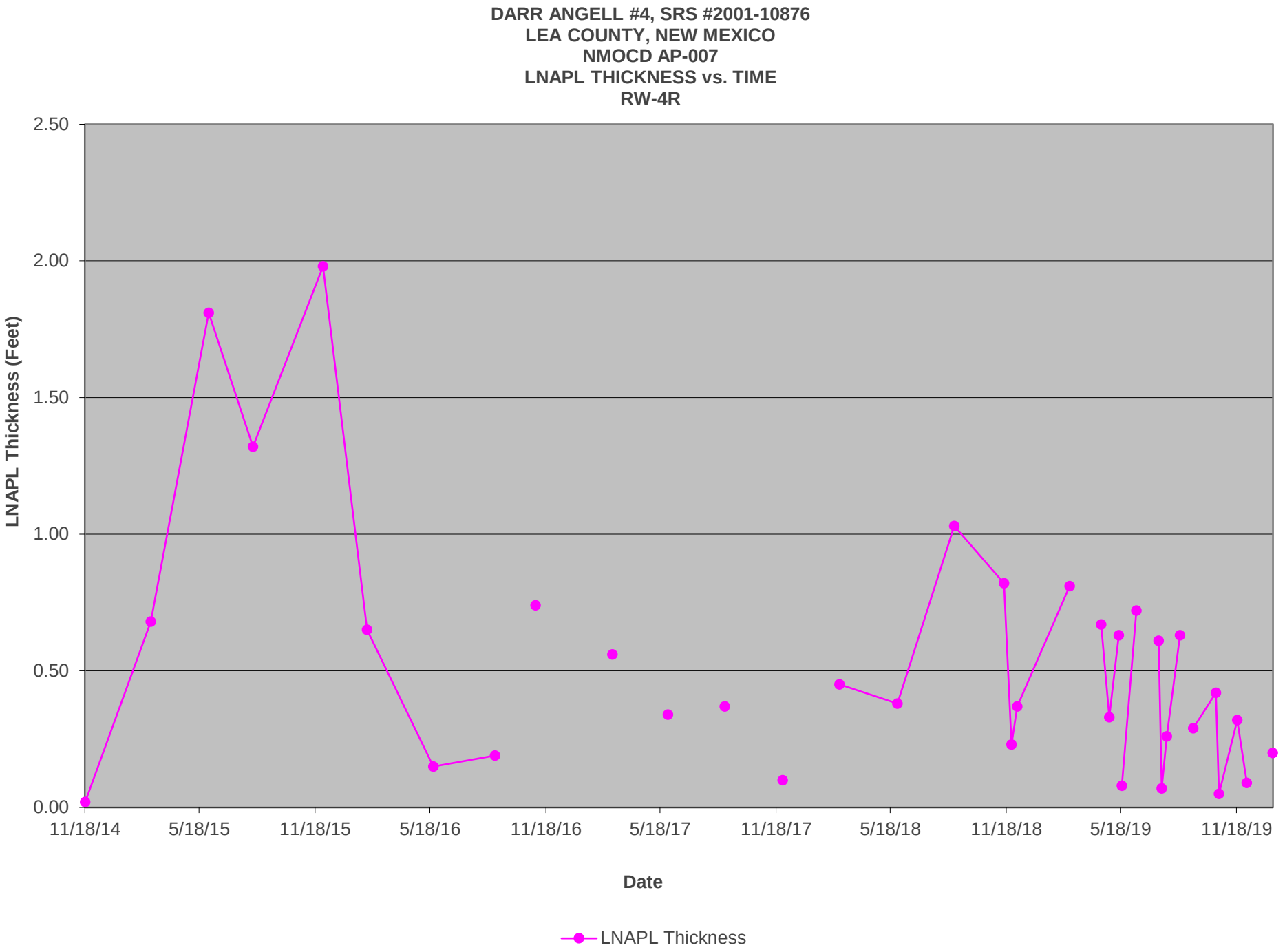
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-1



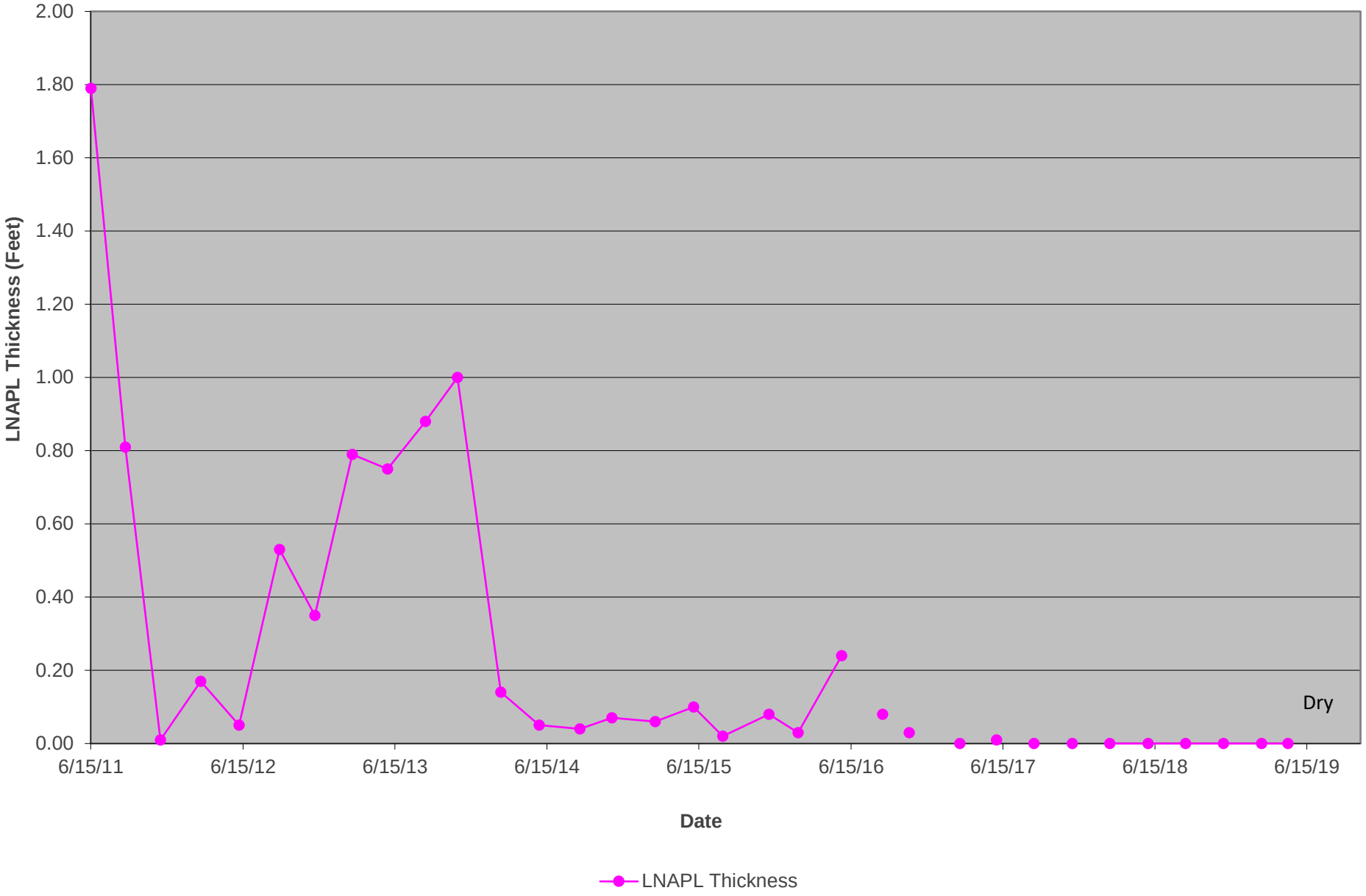
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-2



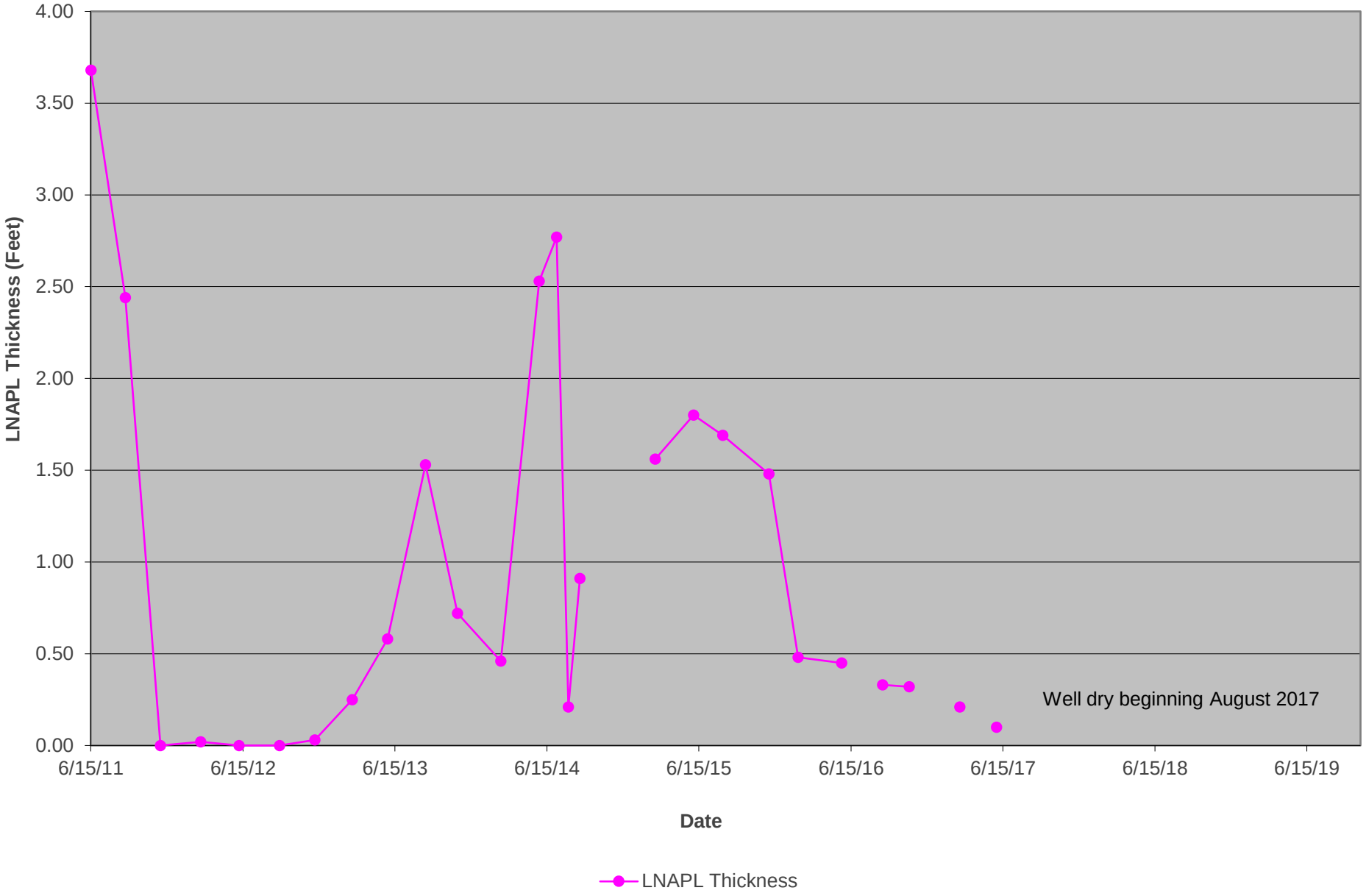

DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-3R
LNAPL Thickness (Feet)
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
11/18/14
5/18/15
11/18/15
5/18/16
11/18/16
5/18/17
11/18/17
5/18/18
11/18/18
5/18/19
11/18/19
Date
LNAPL Thickness


DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-4R
LNAPL Thickness (Feet)
2.50
2.00
1.50
1.00
0.50
0.00
11/18/14
5/18/15
11/18/15
5/18/16
11/18/16
5/18/17
11/18/17
5/18/18
11/18/18
5/18/19
11/18/19
Date
LNAPL Thickness

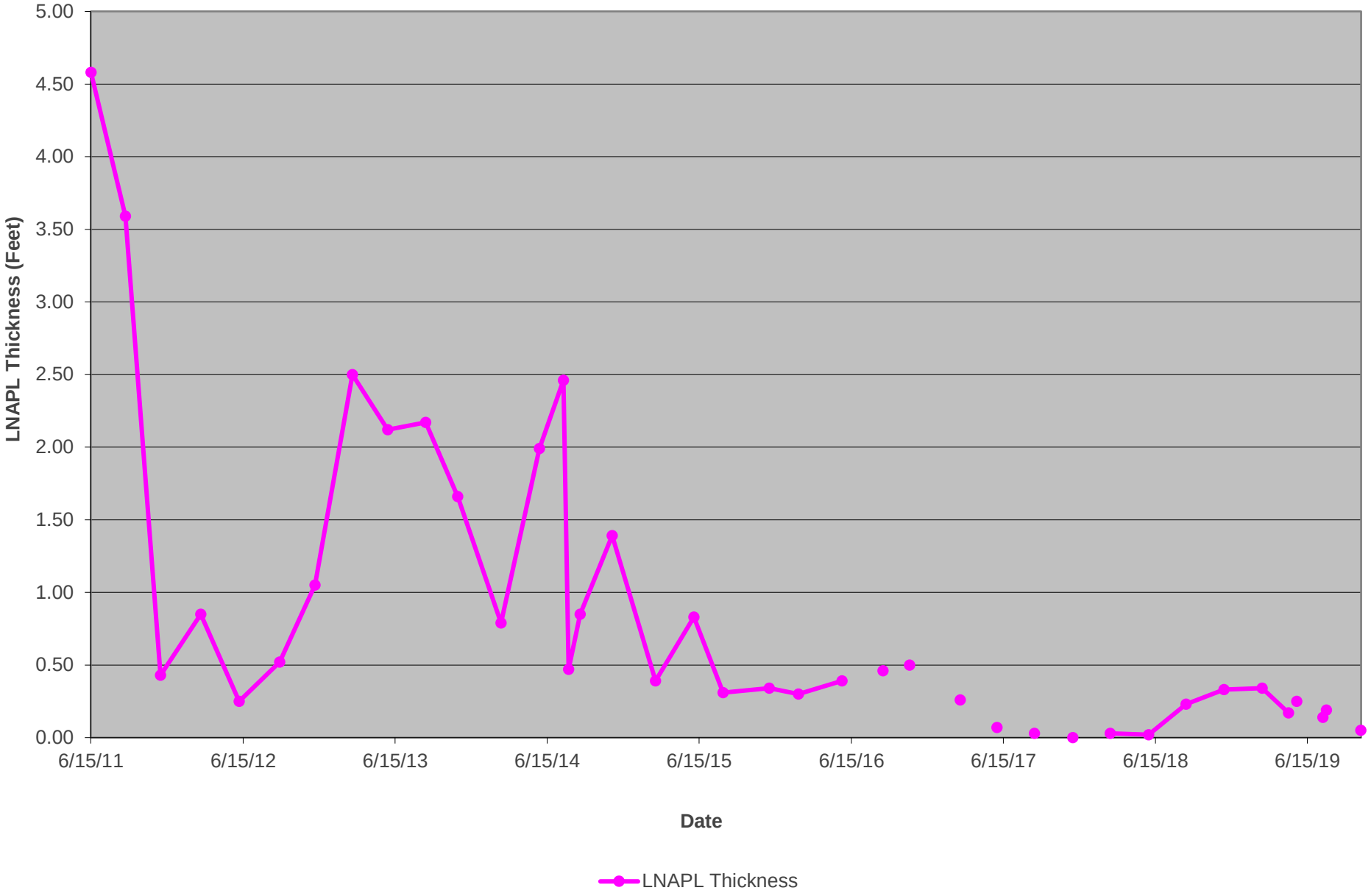
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-7



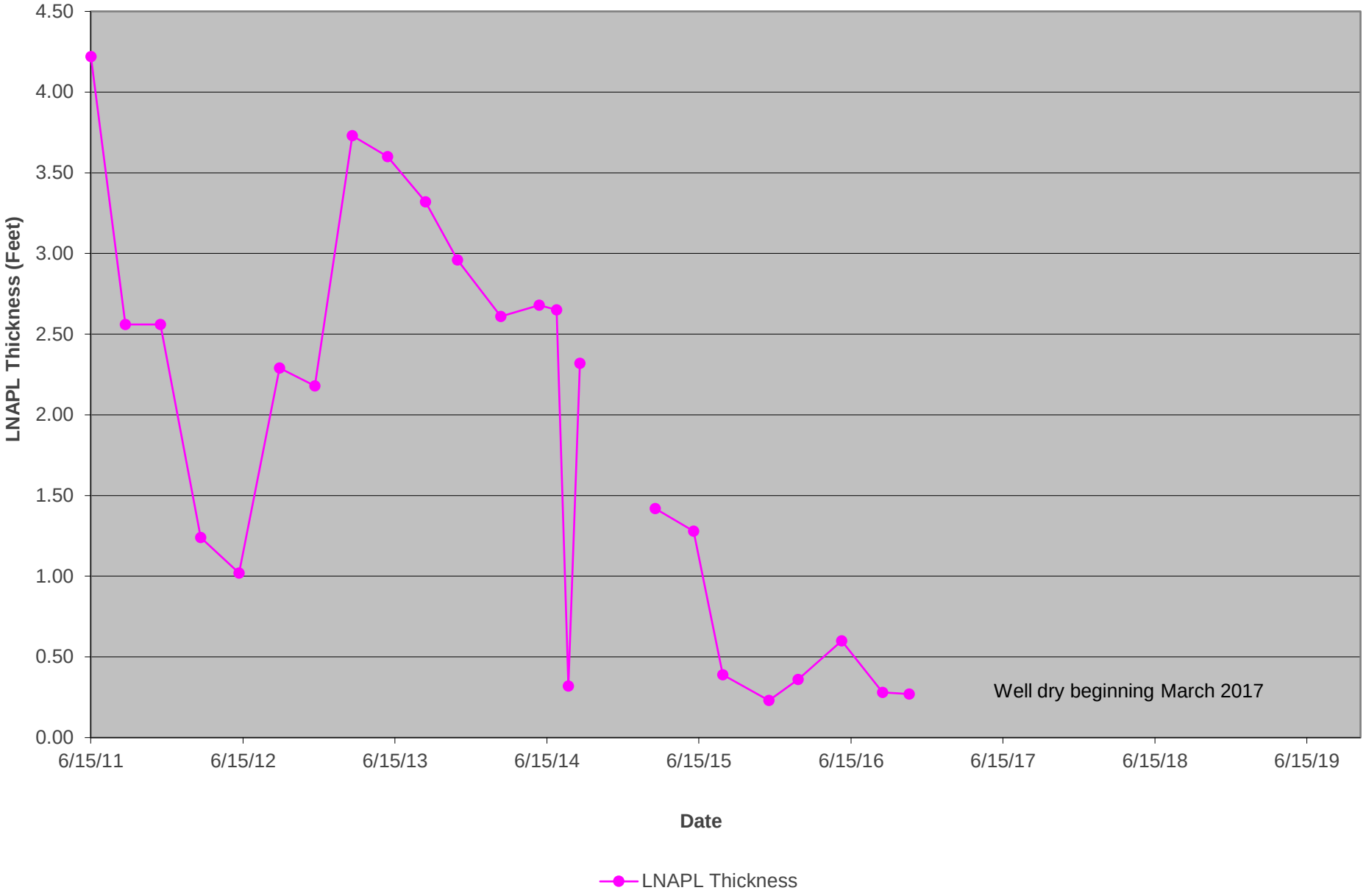
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-8



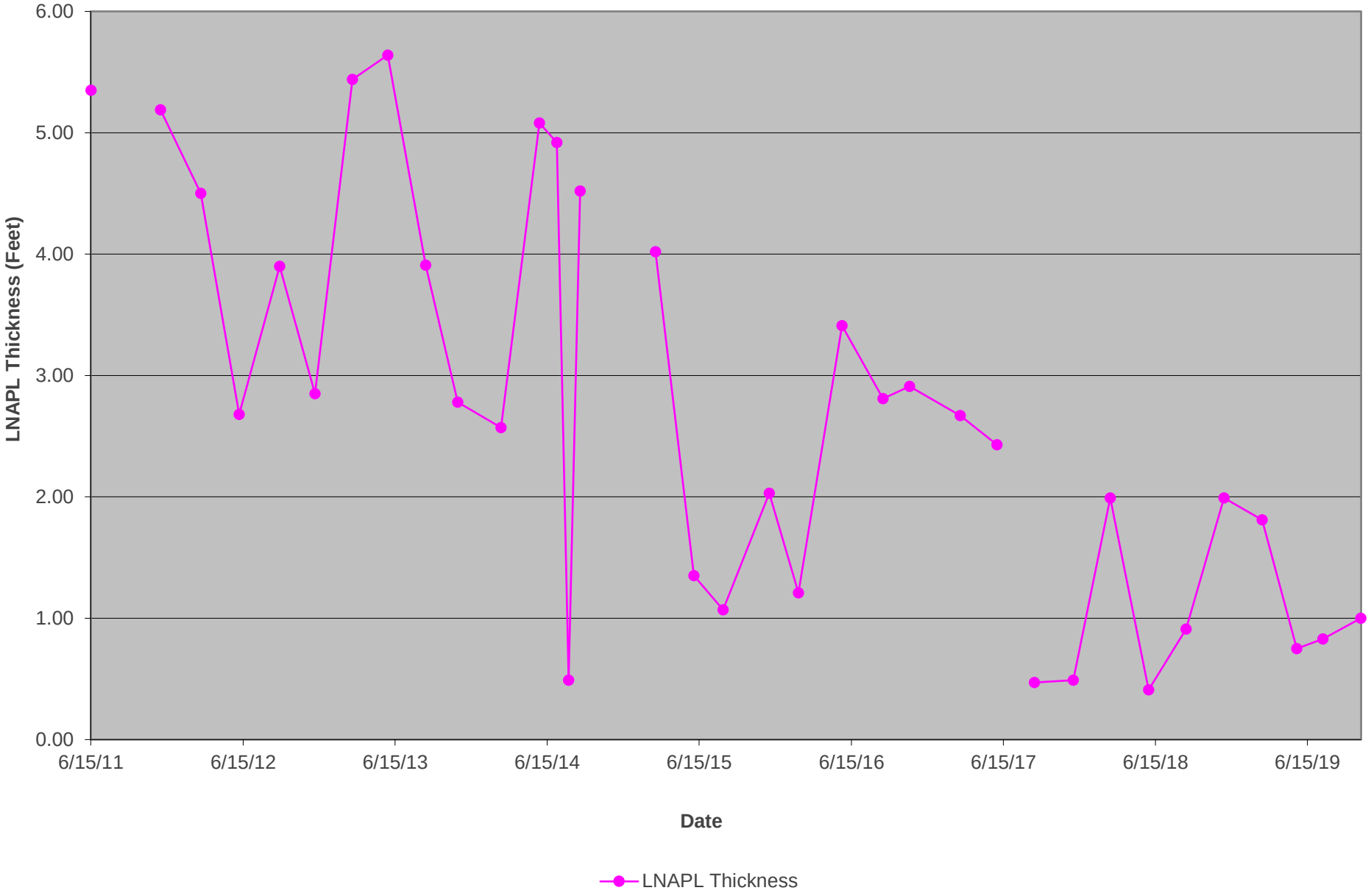
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-9



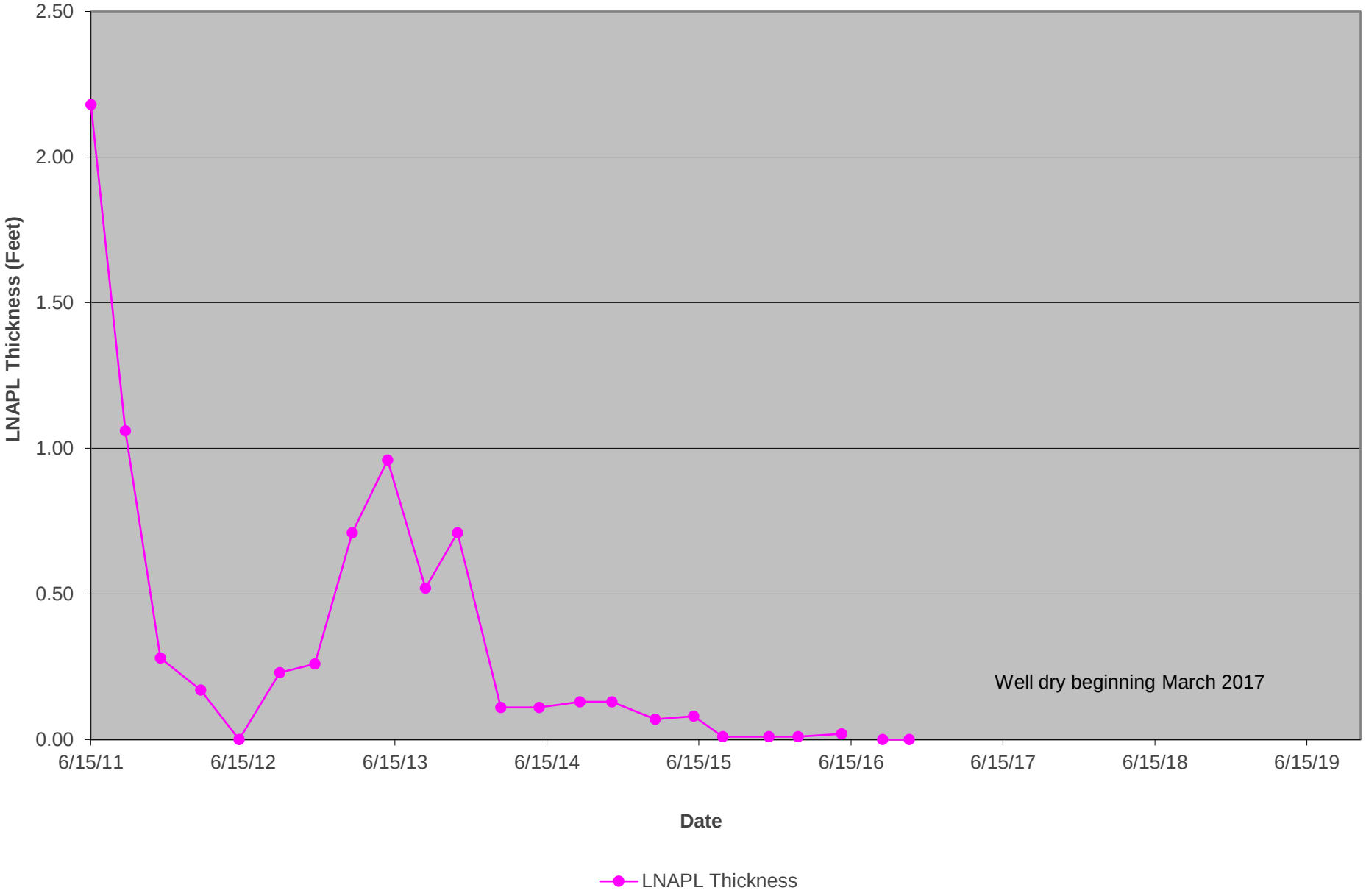
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-10



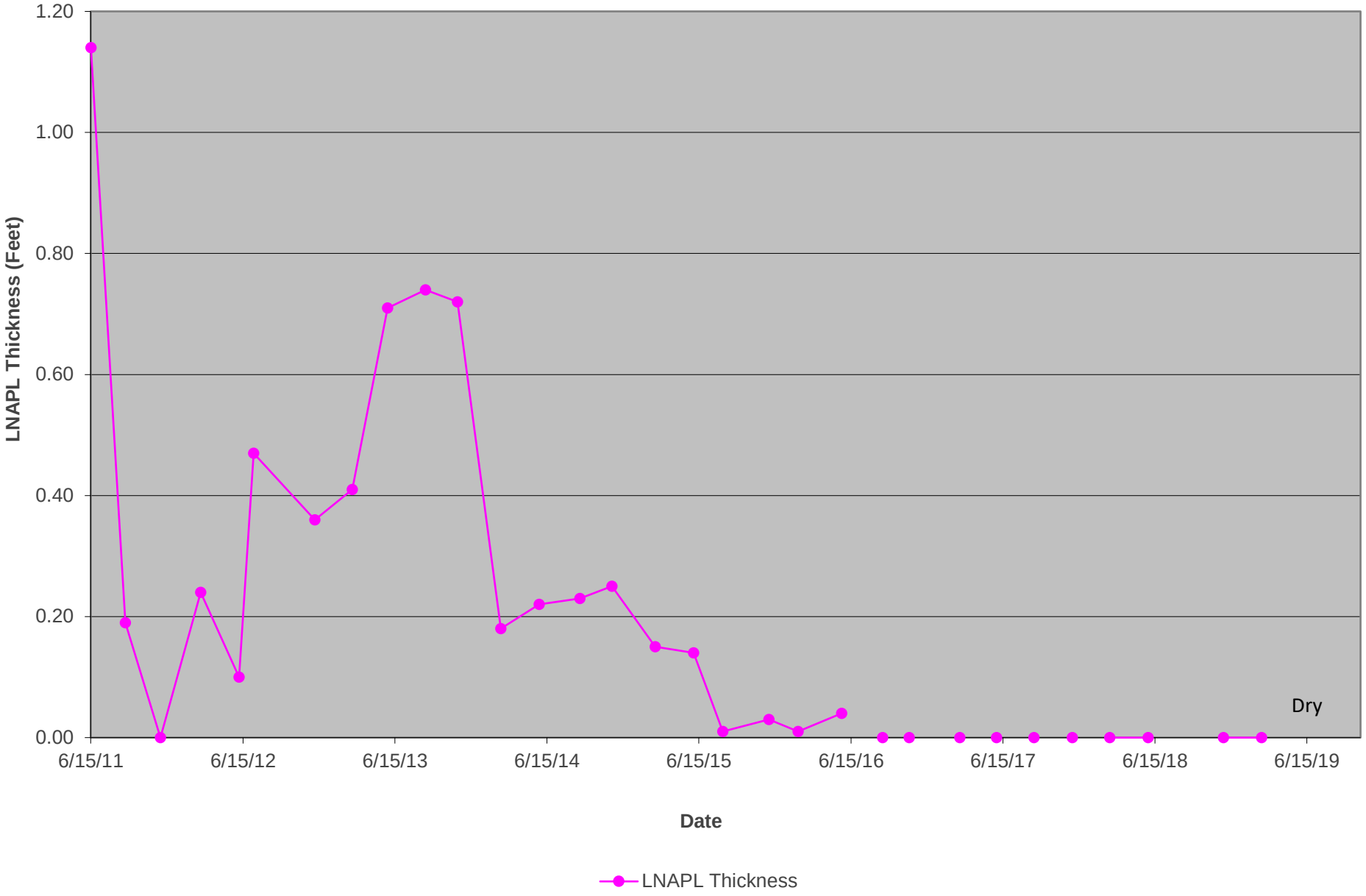
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-11



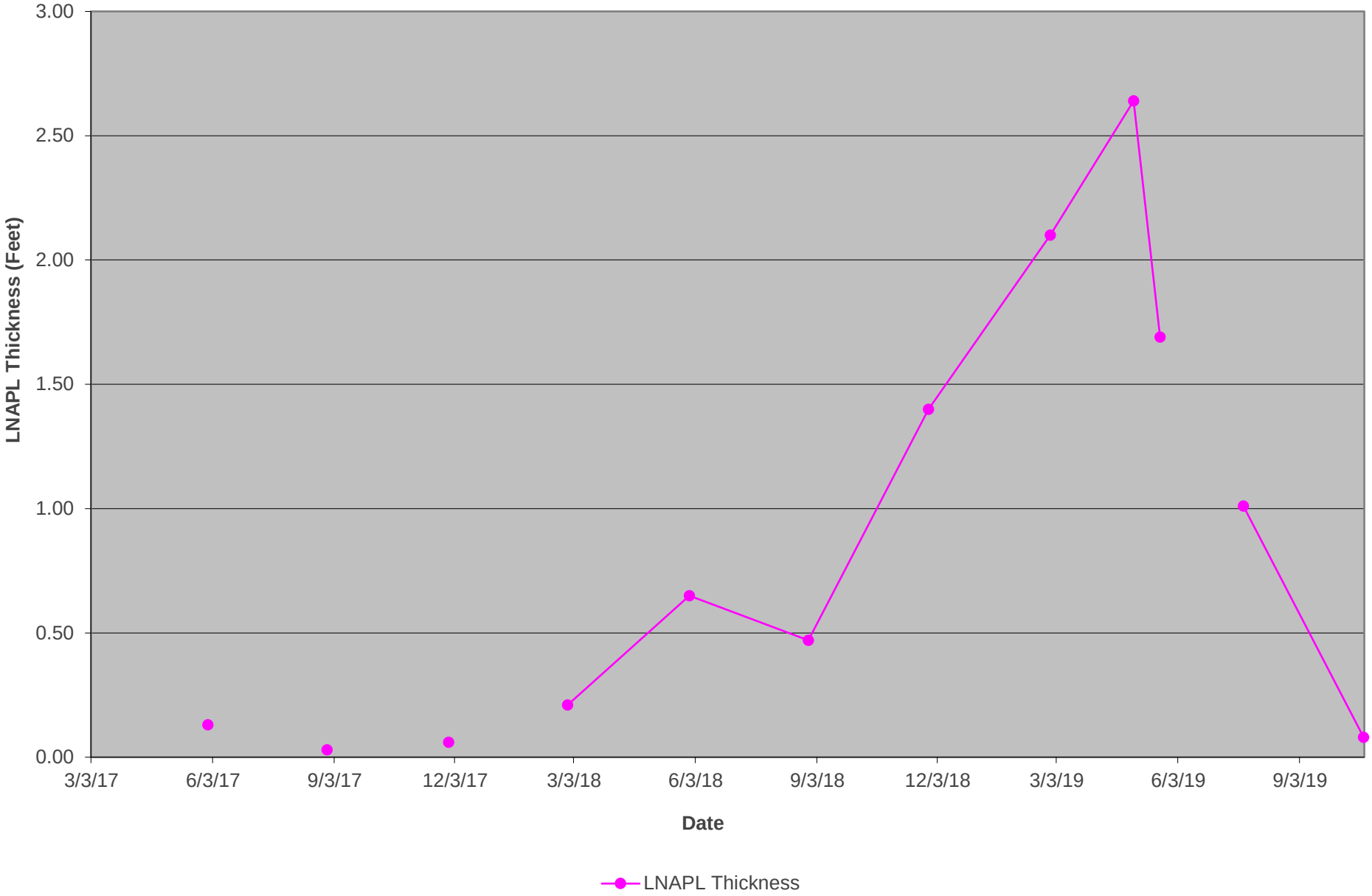
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-12



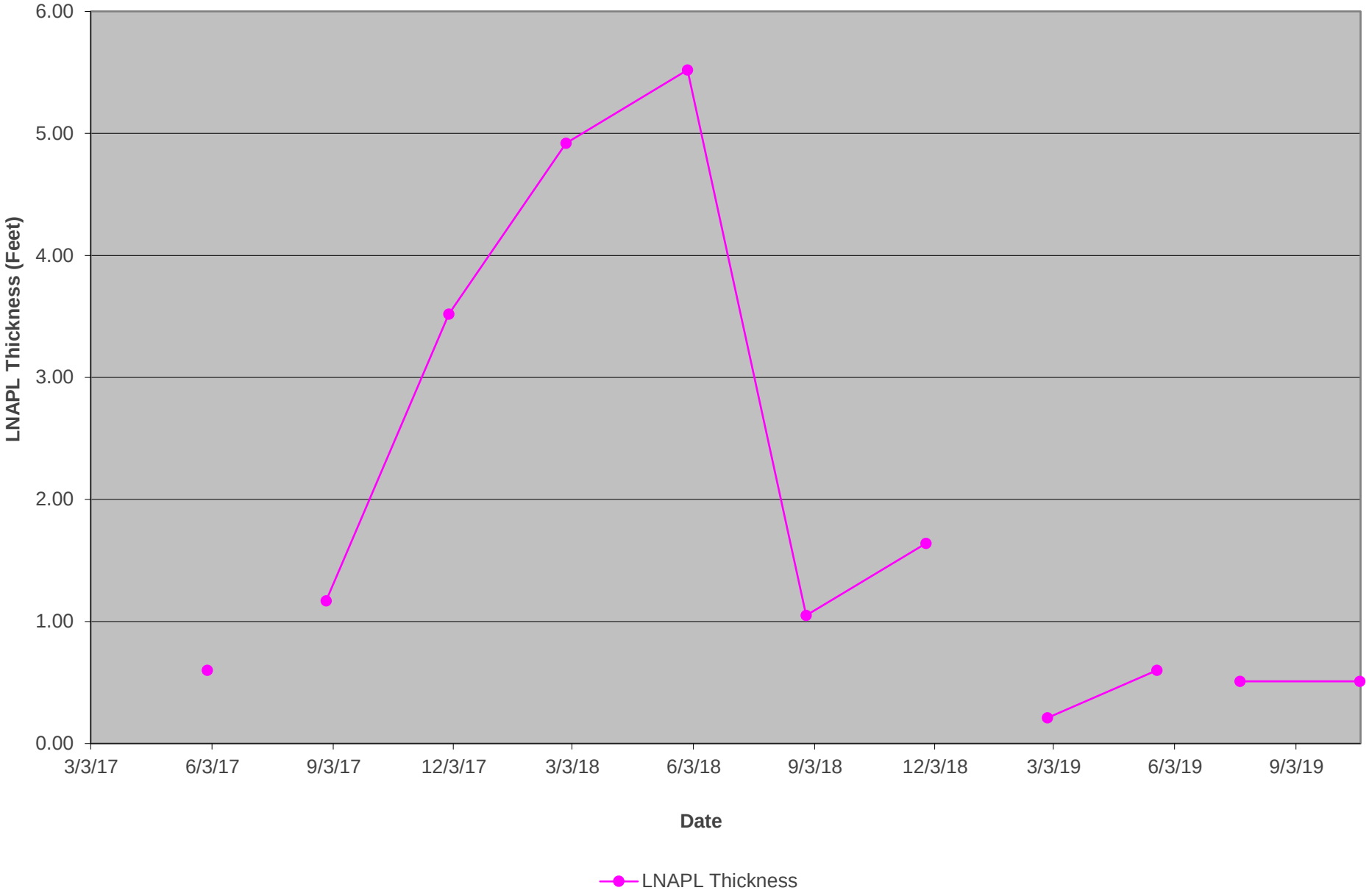
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-13



DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-16

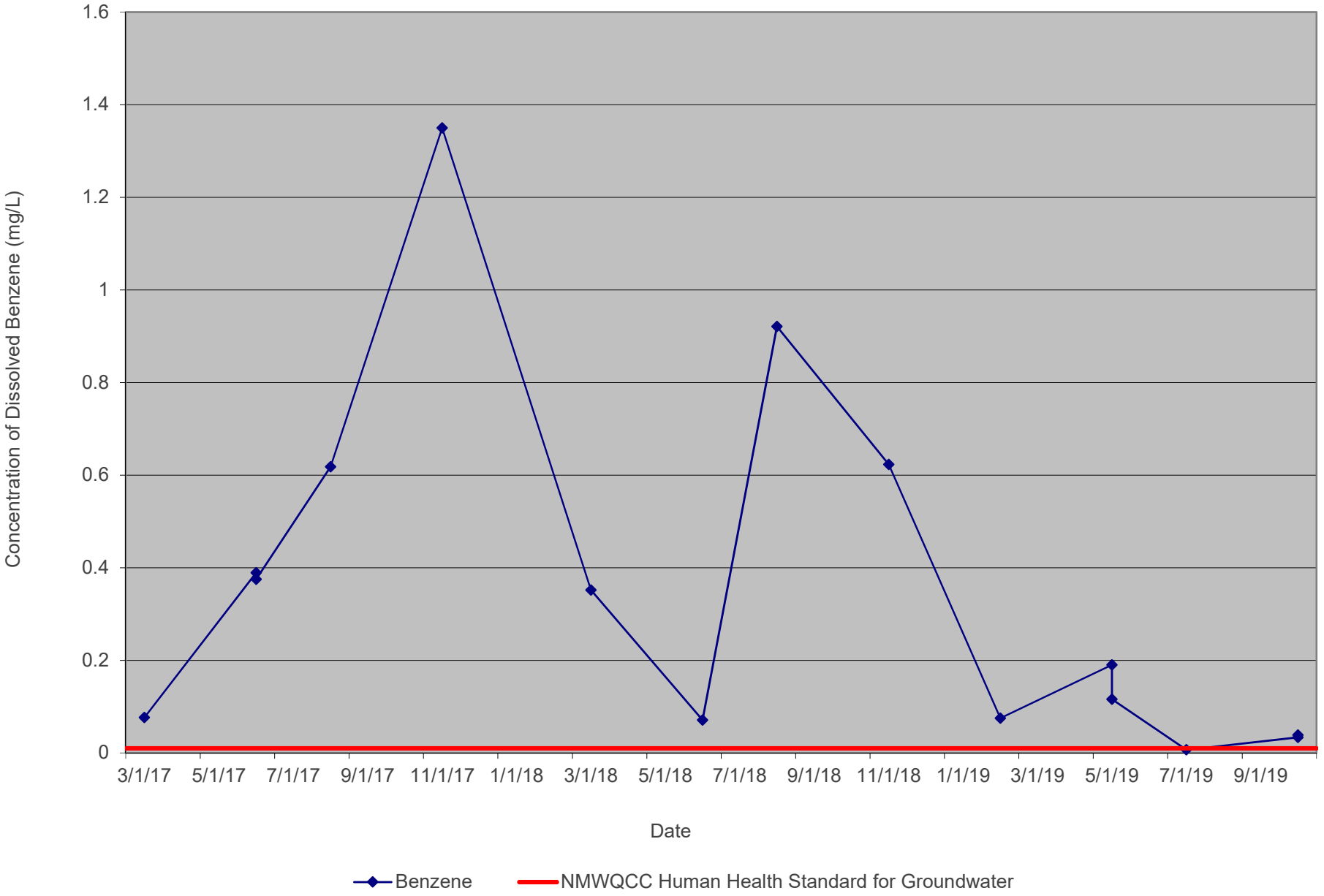


DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
LNAPL THICKNESS vs. TIME
RW-17

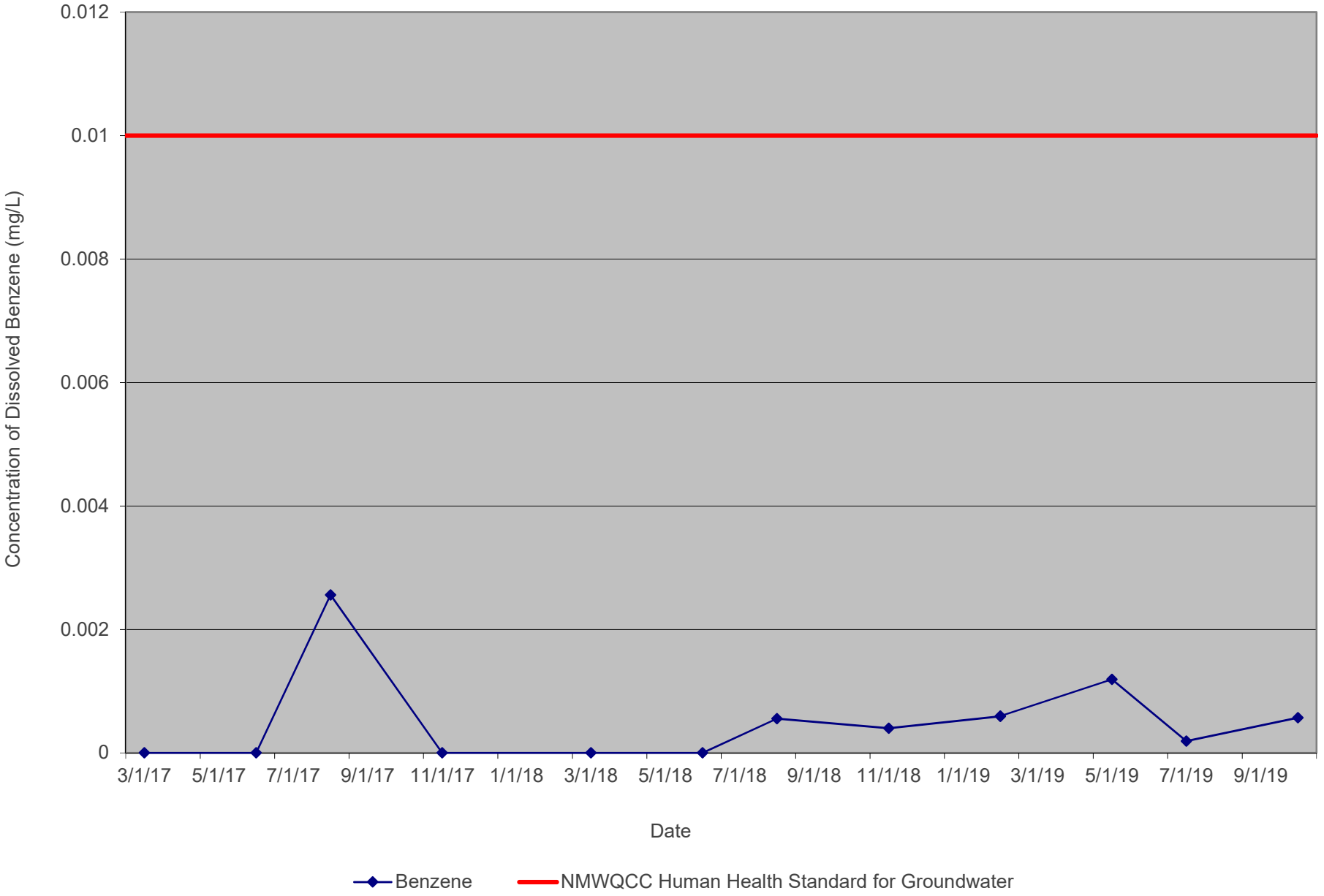


Appendix B
Charts of Concentrations of Dissolved Benzene in Monitor and Recovery Wells vs. Time

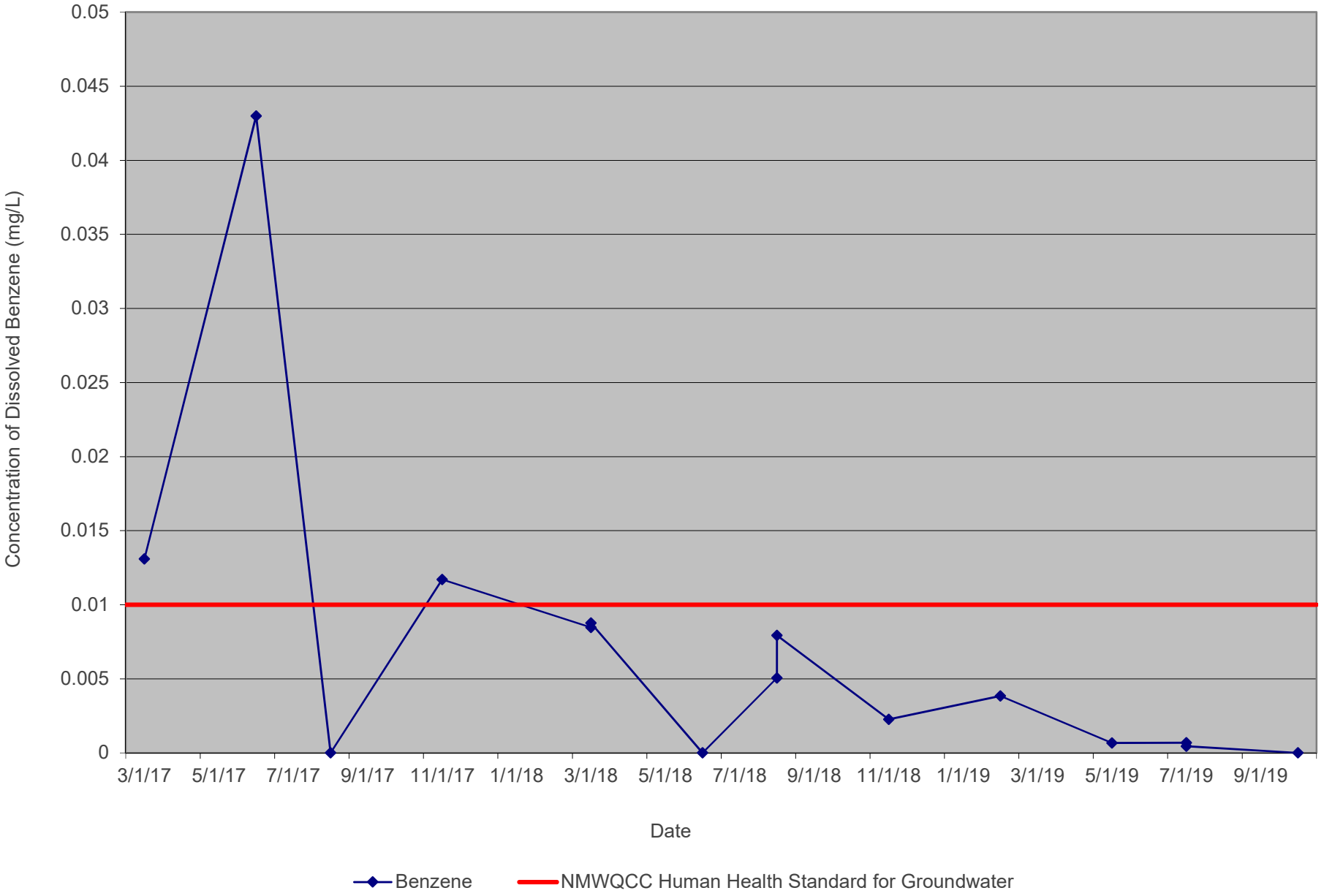
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
CONCENTRATION OF DISSOLVED BENZENE vs. TIME
MW-8R



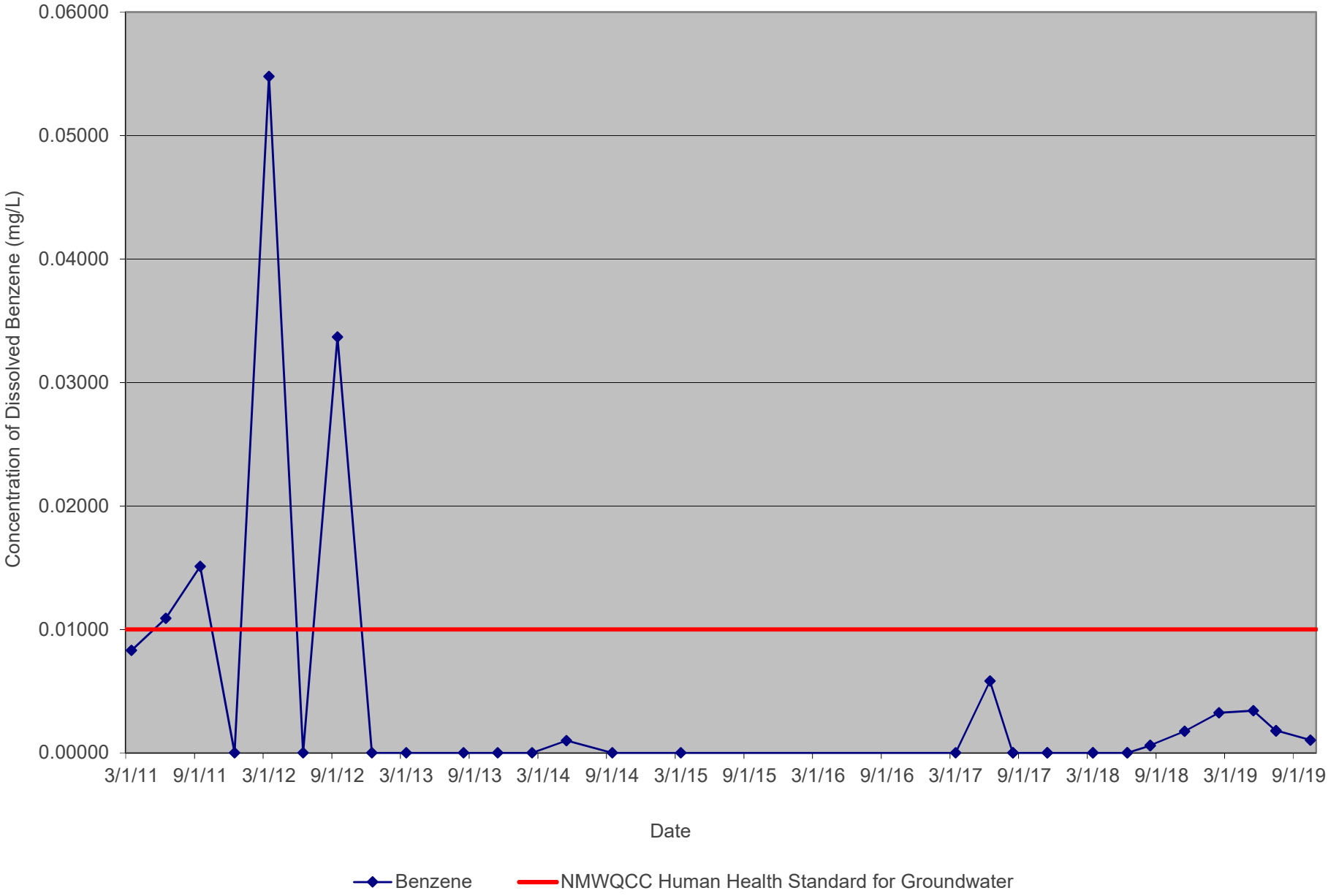
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
CONCENTRATION OF DISSOLVED BENZENE vs. TIME
MW-10R



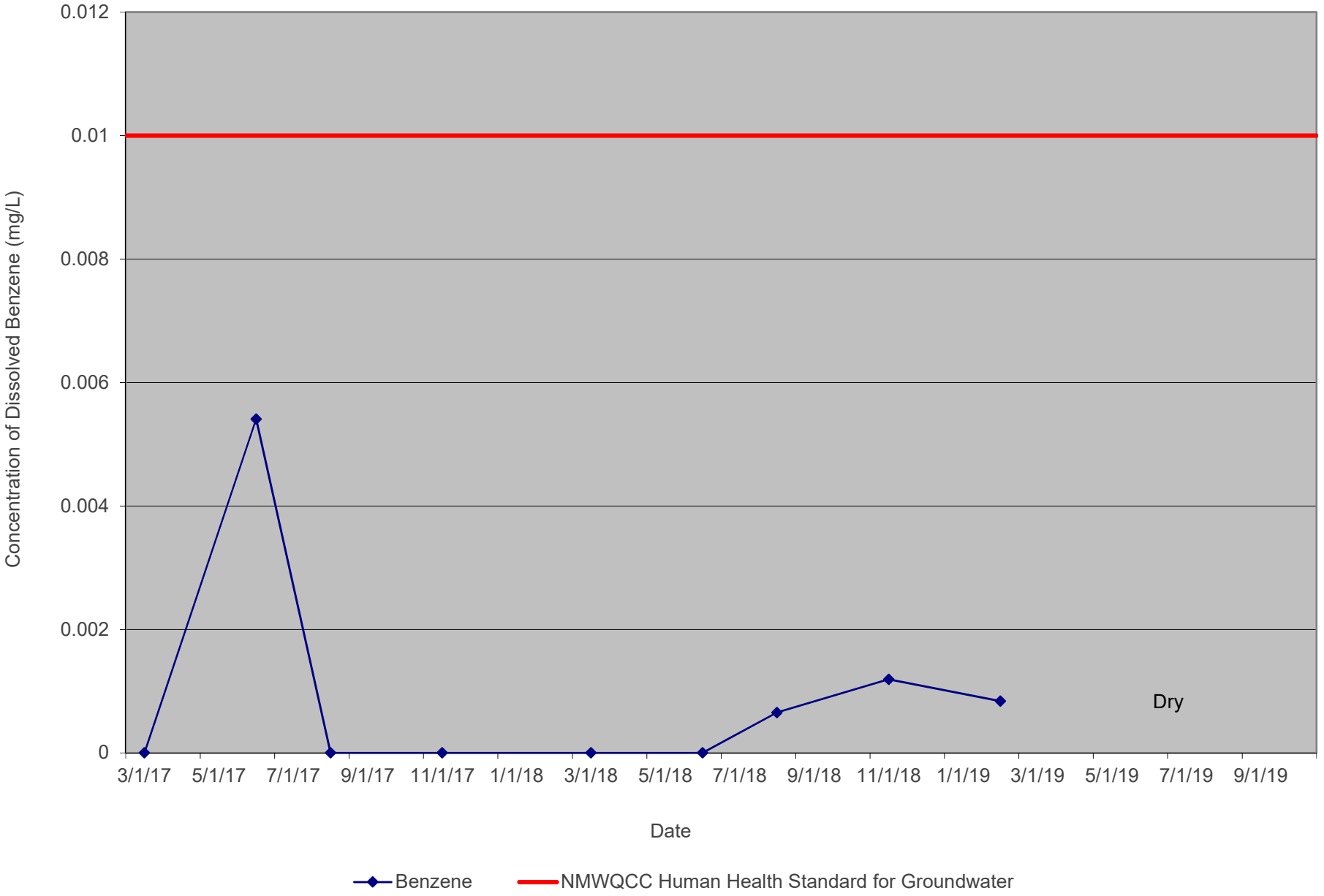
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
CONCENTRATION OF DISSOLVED BENZENE vs. TIME
MW-17



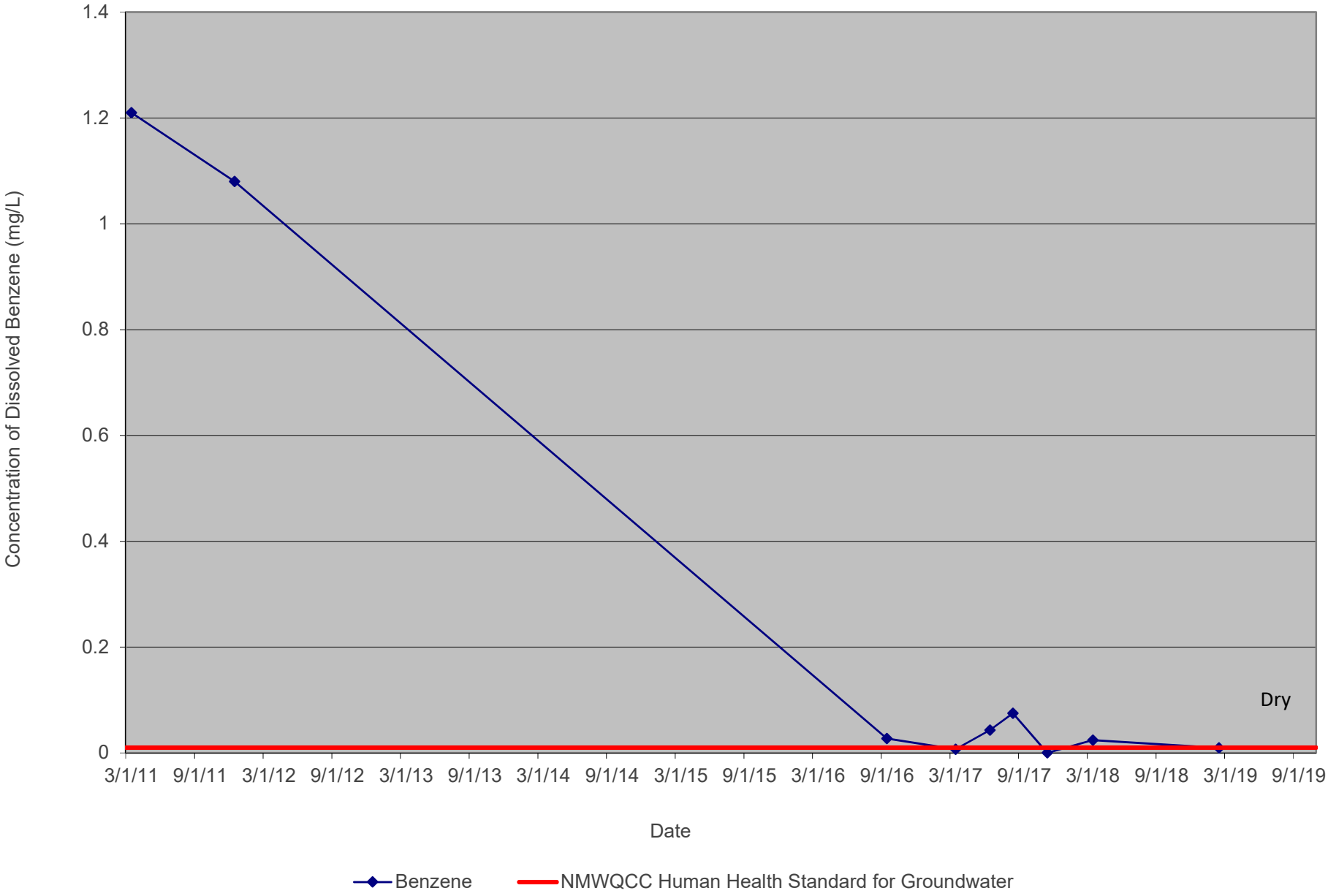
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
CONCENTRATION OF DISSOLVED BENZENE vs. TIME
RW-5/5R



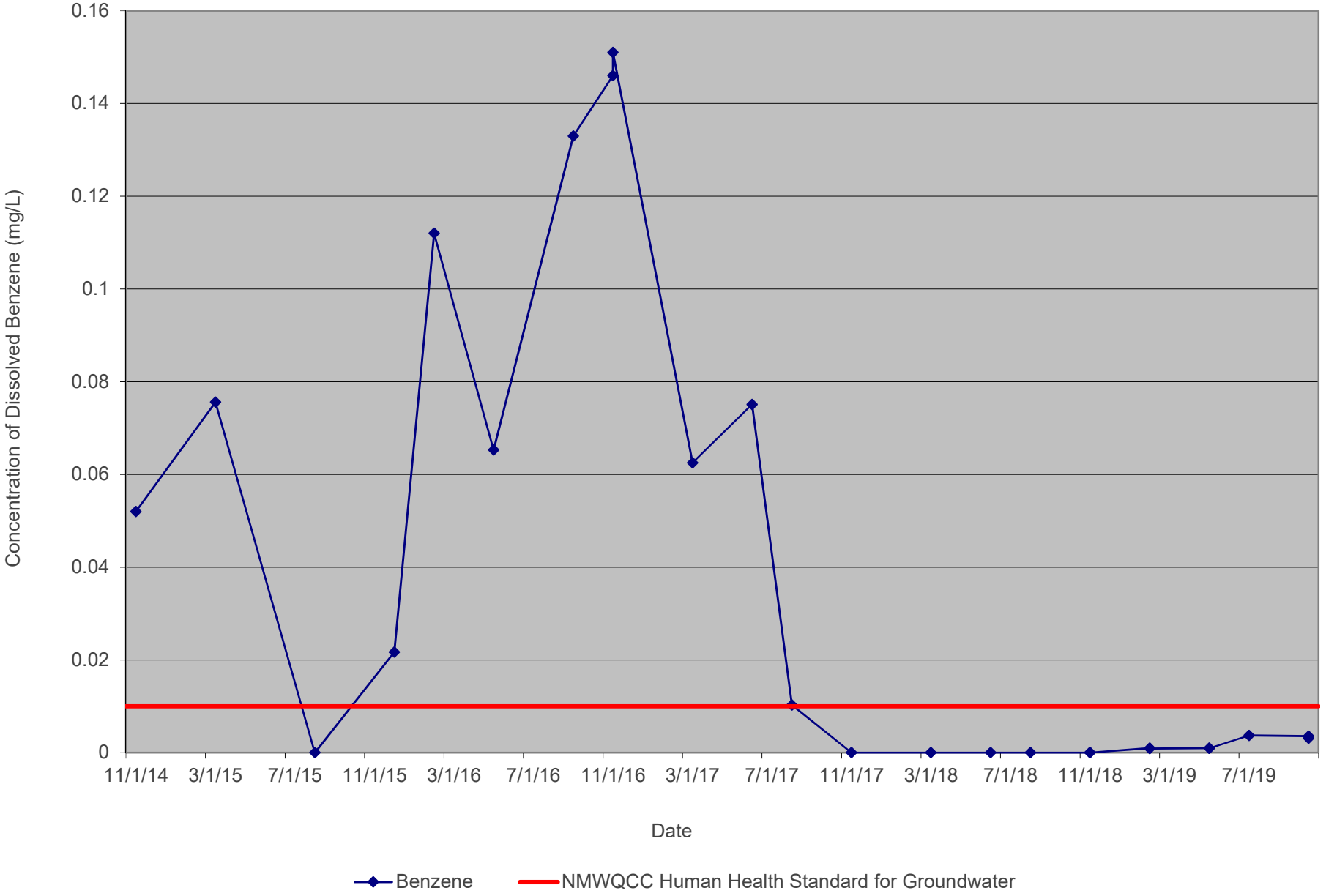
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
CONCENTRATION OF DISSOLVED BENZENE vs. TIME
RW-7



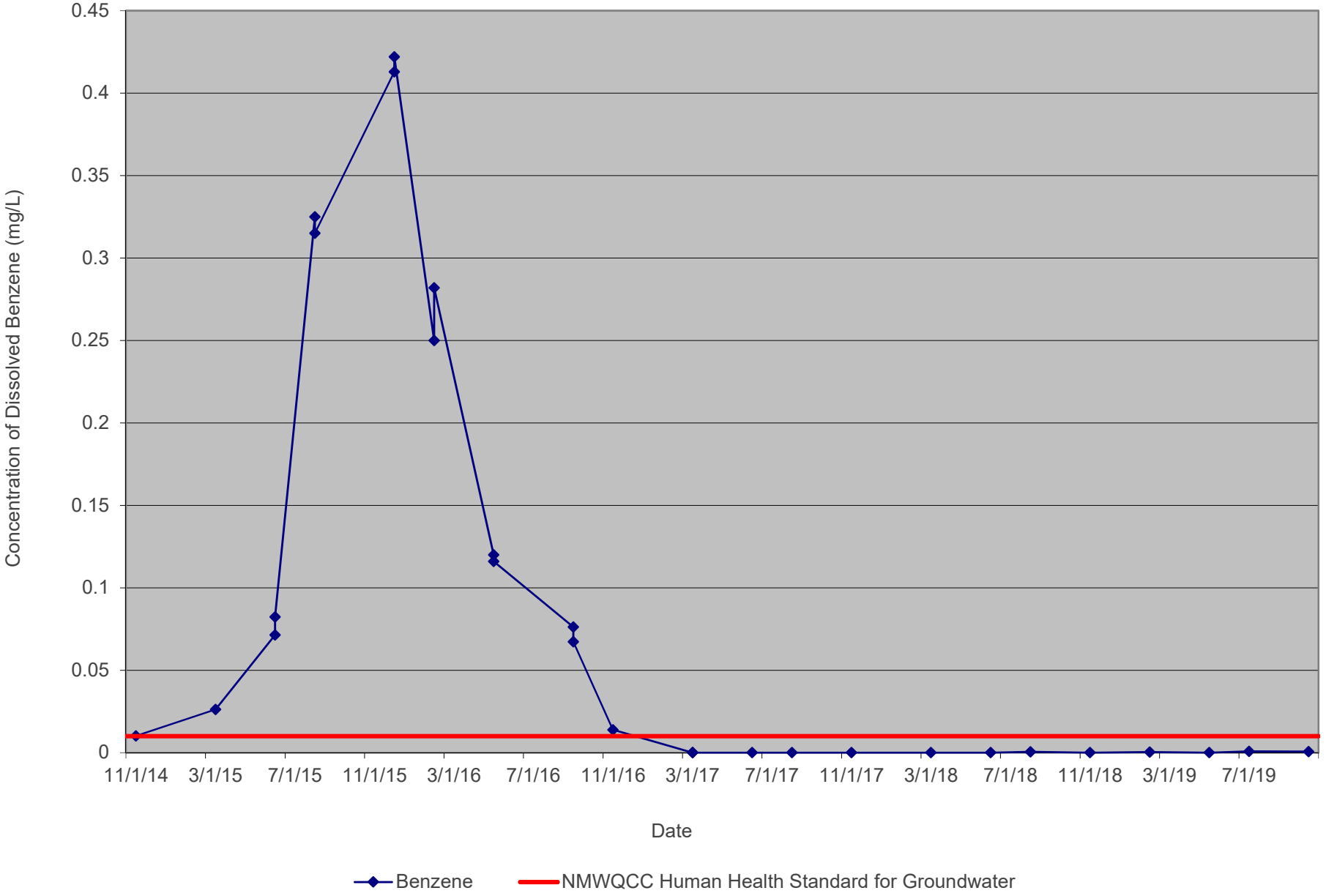
DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
CONCENTRATION OF DISSOLVED BENZENE vs. TIME
RW-13



DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
CONCENTRATION OF DISSOLVED BENZENE vs. TIME
RW-14



DARR ANGELL #4, SRS #2001-10876
LEA COUNTY, NEW MEXICO
NMOCD AP-007
CONCENTRATION OF DISSOLVED BENZENE vs. TIME
RW-15



Appendix C
Certified Analytical Reports
(not included in draft and printed reports)

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

March 12, 2019

Plains All American, LP - GHD

Sample Delivery Group:	L1075054
Samples Received:	03/02/2019
Project Number:	074684
Description:	Darr Angell #4 - Lea County, New Mexico
Site:	SRS#: 2001-10876
Report To:	John Schnable 2135 S Loop 250 W Midland, TX 79703

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.

RW-7-022819 L1075054-01 GW

Collected by	Collected date/time	Received date/time
	02/28/19 09:15	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1245153	1	03/05/19 19:25	03/05/19 19:25	JAH	Mt. Juliet, TN

MW-16-022819 L1075054-02 GW

Collected by	Collected date/time	Received date/time
	02/28/19 09:45	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1245153	1	03/05/19 19:50	03/05/19 19:50	JAH	Mt. Juliet, TN

RW-15-022819 L1075054-03 GW

Collected by	Collected date/time	Received date/time
	02/28/19 09:50	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1245153	1	03/05/19 20:14	03/05/19 20:14	JAH	Mt. Juliet, TN

MW-14-022819 L1075054-04 GW

Collected by	Collected date/time	Received date/time
	02/28/19 10:20	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1245153	1	03/05/19 20:38	03/05/19 20:38	JAH	Mt. Juliet, TN

MW-15-022819 L1075054-05 GW

Collected by	Collected date/time	Received date/time
	02/28/19 10:55	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1245153	1	03/05/19 21:02	03/05/19 21:02	JAH	Mt. Juliet, TN

MW-4R-022819 L1075054-06 GW

Collected by	Collected date/time	Received date/time
	02/28/19 11:03	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1245153	1	03/05/19 21:26	03/05/19 21:26	JAH	Mt. Juliet, TN

MW-10R-022819 L1075054-07 GW

Collected by	Collected date/time	Received date/time
	02/28/19 11:30	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1245153	1	03/05/19 21:50	03/05/19 21:50	JAH	Mt. Juliet, TN

TRIP BLANK L1075054-08 GW

Collected by	Collected date/time	Received date/time
	02/28/19 00:00	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1245153	1	03/05/19 18:55	03/05/19 18:55	JAH	Mt. Juliet, TN

MW-12R-022819 L1075054-09 GW

Collected by	Collected date/time	Received date/time
	02/28/19 12:05	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1245153	1	03/05/19 22:14	03/05/19 22:14	JAH	Mt. Juliet, TN

MW-17-022819 L1075054-10 GW

Collected by	Collected date/time	Received date/time
	02/28/19 12:50	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1245153	1	03/05/19 22:38	03/05/19 22:38	JAH	Mt. Juliet, TN

RW-13-022819 L1075054-11 GW

Collected by	Collected date/time	Received date/time
	02/28/19 13:00	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1245153	1	03/05/19 23:48	03/05/19 23:48	JAH	Mt. Juliet, TN

RW-14-022819 L1075054-12 GW

Collected by	Collected date/time	Received date/time
	02/28/19 15:30	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1248119	1	03/11/19 13:48	03/11/19 13:48	ACG	Mt. Juliet, TN

RW-5R-022819 L1075054-13 GW

Collected by	Collected date/time	Received date/time
	02/28/19 16:30	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1248119	1	03/11/19 14:44	03/11/19 14:44	ACG	Mt. Juliet, TN

DUP-01-022819 L1075054-14 GW

Collected by	Collected date/time	Received date/time
	02/28/19 00:00	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1248119	1	03/11/19 15:08	03/11/19 15:08	ACG	Mt. Juliet, TN

DUP-02-022819 L1075054-15 GW

Collected by	Collected date/time	Received date/time
	02/28/19 00:00	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1248119	1	03/11/19 15:32	03/11/19 15:32	ACG	Mt. Juliet, TN

MW-8R-022819 L1075054-16 GW

Collected by	Collected date/time	Received date/time
	02/28/19 14:10	03/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1248119	1	03/11/19 15:56	03/11/19 15:56	ACG	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

This data package consists of this signature page, the laboratory review checklist, and the following reportable data as applicable:

R1 - Field chain-of-custody documentation;

R2 - Sample identification cross-reference;

R3 - Test reports (analytical data sheets) for each environmental sample that includes:

a. Items consistent with NELAC Chapter 5,

b. dilution factors,

c. preparation methods,

d. cleanup methods, and

e. if required for the project, tentatively identified compounds (TICs).

R4 - Surrogate recovery data including:

a. Calculated recovery (%R), and

b. The laboratory's surrogate QC limits.

R5 - Test reports/summary forms for blank samples;

R6 - Test reports/summary forms for laboratory control samples (LCSs) including:

a. LCS spiking amounts,

b. Calculated %R for each analyte, and

c. The laboratory's LCS QC limits.

R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a. Samples associated with the MS/MSD clearly identified,

b. MS/MSD spiking amounts,

c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,

d. Calculated %Rs and relative percent differences (RPDs), and

e. The laboratory's MS/MSD QC limits

R8 - Laboratory analytical duplicate (if applicable) recovery and precision:

a. The amount of analyte measured in the duplicate,

b. The calculated RPD, and

c. The laboratory's QC limits for analytical duplicates.

R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 - Other problems or anomalies.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Mark W. Beasley
Project Manager

Laboratory Review Checklist: Reportable Data

Laboratory Name: Pace Analytical National	LRC Date: 03/12/2019 10:18
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1075054-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15 and 16
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1245153 and WG1248119

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?		X			1
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Supporting Data

Laboratory Name: Pace Analytical National	LRC Date: 03/12/2019 10:18
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1075054-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15 and 16
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1245153 and WG1248119

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?			X		
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports

Laboratory Name: Pace Analytical National	LRC Date: 03/12/2019 10:18
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1075054-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15 and 16
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1245153 and WG1248119

ER #[1]	Description
1	8021B WG1245153 Total Xylene L1075054-01, 02, 03 and 08: Concentration in the Blank >MQL.

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000838	B	0.000190	0.000500	0.000500	1	03/05/2019 19:25	WG1245153
Toluene	U		0.000412	0.00100	0.00100	1	03/05/2019 19:25	WG1245153
Ethylbenzene	U		0.000160	0.000500	0.000500	1	03/05/2019 19:25	WG1245153
Total Xylene	0.00339	B	0.000510	0.00150	0.00150	1	03/05/2019 19:25	WG1245153
(S) a,a,a-Trifluorotoluene(PID)	*95.4*				*79.0-125*		*03/05/2019 19:25*	WG1245153

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.000235	B J	0.000190	0.000500	0.000500	1	03/05/2019 19:50	WG1245153
Toluene	0.000558	B J	0.000412	0.00100	0.00100	1	03/05/2019 19:50	WG1245153
Ethylbenzene	U		0.000160	0.000500	0.000500	1	03/05/2019 19:50	WG1245153
Total Xylene	0.000898	B J	0.000510	0.00150	0.00150	1	03/05/2019 19:50	WG1245153
(S) a,a,a-Trifluorotoluene(PID)	*96.3*				*79.0-125*		*03/05/2019 19:50*	WG1245153

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000332	B J	0.000190	0.000500	0.000500	1	03/05/2019 20:14	WG1245153
Toluene	0.00134	B	0.000412	0.00100	0.00100	1	03/05/2019 20:14	WG1245153
Ethylbenzene	0.000641		0.000160	0.000500	0.000500	1	03/05/2019 20:14	WG1245153
Total Xylene	0.00167	B	0.000510	0.00150	0.00150	1	03/05/2019 20:14	WG1245153
(S) a,a,a-Trifluorotoluene(PID)	*95.7*				*79.0-125*		*03/05/2019 20:14*	WG1245153

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	03/05/2019 20:38	WG1245153
Toluene	0.000423	B J	0.000412	0.00100	0.00100	1	03/05/2019 20:38	WG1245153
Ethylbenzene	U		0.000160	0.000500	0.000500	1	03/05/2019 20:38	WG1245153
Total Xylene	U		0.000510	0.00150	0.00150	1	03/05/2019 20:38	WG1245153
(S) a,a,a-Trifluorotoluene(PID)	*95.7*				*79.0-125*		*03/05/2019 20:38*	WG1245153

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	03/05/2019 21:02	WG1245153
Toluene	0.000451	B J	0.000412	0.00100	0.00100	1	03/05/2019 21:02	WG1245153
Ethylbenzene	U		0.000160	0.000500	0.000500	1	03/05/2019 21:02	WG1245153
Total Xylene	U		0.000510	0.00150	0.00150	1	03/05/2019 21:02	WG1245153
(S) a,a,a-Trifluorotoluene(PID)	*96.3*				*79.0-125*		*03/05/2019 21:02*	WG1245153

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	03/05/2019 21:26	WG1245153
Toluene	U		0.000412	0.00100	0.00100	1	03/05/2019 21:26	WG1245153
Ethylbenzene	U		0.000160	0.000500	0.000500	1	03/05/2019 21:26	WG1245153
Total Xylene	U		0.000510	0.00150	0.00150	1	03/05/2019 21:26	WG1245153
(S) a,a,a-Trifluorotoluene(PID)	*96.4*				*79.0-125*		*03/05/2019 21:26*	WG1245153

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000591	B	0.000190	0.000500	0.000500	1	03/05/2019 21:50	WG1245153
Toluene	0.00152	B	0.000412	0.00100	0.00100	1	03/05/2019 21:50	WG1245153
Ethylbenzene	0.000303	J	0.000160	0.000500	0.000500	1	03/05/2019 21:50	WG1245153
Total Xylene	U		0.000510	0.00150	0.00150	1	03/05/2019 21:50	WG1245153
(S) a,a,a-Trifluorotoluene(PID)	*95.9*				*79.0-125*		*03/05/2019 21:50*	WG1245153

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.000371	B J	0.000190	0.000500	0.000500	1	03/05/2019 18:55	WG1245153
Toluene	0.00110	B	0.000412	0.00100	0.00100	1	03/05/2019 18:55	WG1245153
Ethylbenzene	U		0.000160	0.000500	0.000500	1	03/05/2019 18:55	WG1245153
Total Xylene	0.000948	B J	0.000510	0.00150	0.00150	1	03/05/2019 18:55	WG1245153
(S) a,a,a-Trifluorotoluene(PID)	*96.2*				*79.0-125*		*03/05/2019 18:55*	WG1245153

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	03/05/2019 22:14	WG1245153
Toluene	0.00158	B	0.000412	0.00100	0.00100	1	03/05/2019 22:14	WG1245153
Ethylbenzene	0.000554		0.000160	0.000500	0.000500	1	03/05/2019 22:14	WG1245153
Total Xylene	U		0.000510	0.00150	0.00150	1	03/05/2019 22:14	WG1245153
(S) a,a,a-Trifluorotoluene(PID)	*94.1*				*79.0-125*		*03/05/2019 22:14*	WG1245153

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.00385		0.000190	0.000500	0.000500	1	03/05/2019 22:38	WG1245153
Toluene	0.00170	B	0.000412	0.00100	0.00100	1	03/05/2019 22:38	WG1245153
Ethylbenzene	0.00764		0.000160	0.000500	0.000500	1	03/05/2019 22:38	WG1245153
Total Xylene	0.0402		0.000510	0.00150	0.00150	1	03/05/2019 22:38	WG1245153
(S) a,a,a-Trifluorotoluene(PID)	*95.7*				*79.0-125*		*03/05/2019 22:38*	WG1245153

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00955		0.000190	0.000500	0.000500	1	03/05/2019 23:48	WG1245153
Toluene	U		0.000412	0.00100	0.00100	1	03/05/2019 23:48	WG1245153
Ethylbenzene	U		0.000160	0.000500	0.000500	1	03/05/2019 23:48	WG1245153
Total Xylene	U		0.000510	0.00150	0.00150	1	03/05/2019 23:48	WG1245153
(S) a,a,a-Trifluorotoluene(PID)	*90.7*				*79.0-125*		*03/05/2019 23:48*	WG1245153

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000963		0.000190	0.000500	0.000500	1	03/11/2019 13:48	WG1248119
Toluene	0.00132		0.000412	0.00100	0.00100	1	03/11/2019 13:48	WG1248119
Ethylbenzene	0.000419	J	0.000160	0.000500	0.000500	1	03/11/2019 13:48	WG1248119
Total Xylene	0.000592	J	0.000510	0.00150	0.00150	1	03/11/2019 13:48	WG1248119
(S) a,a,a-Trifluorotoluene(PID)	*96.2*				*79.0-125*		*03/11/2019 13:48*	WG1248119

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00325		0.000190	0.000500	0.000500	1	03/11/2019 14:44	WG1248119
Toluene	U		0.000412	0.00100	0.00100	1	03/11/2019 14:44	WG1248119
Ethylbenzene	0.00382		0.000160	0.000500	0.000500	1	03/11/2019 14:44	WG1248119
Total Xylene	0.0412		0.000510	0.00150	0.00150	1	03/11/2019 14:44	WG1248119
(S) a,a,a-Trifluorotoluene(PID)	*95.0*				*79.0-125*		*03/11/2019 14:44*	WG1248119

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000596		0.000190	0.000500	0.000500	1	03/11/2019 15:08	WG1248119
Toluene	0.00153		0.000412	0.00100	0.00100	1	03/11/2019 15:08	WG1248119
Ethylbenzene	0.000383	J	0.000160	0.000500	0.000500	1	03/11/2019 15:08	WG1248119
Total Xylene	U		0.000510	0.00150	0.00150	1	03/11/2019 15:08	WG1248119
(S) a,a,a-Trifluorotoluene(PID)	*96.3*				*79.0-125*		*03/11/2019 15:08*	WG1248119

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000859		0.000190	0.000500	0.000500	1	03/11/2019 15:32	WG1248119
Toluene	0.00127		0.000412	0.00100	0.00100	1	03/11/2019 15:32	WG1248119
Ethylbenzene	0.000356	J	0.000160	0.000500	0.000500	1	03/11/2019 15:32	WG1248119
Total Xylene	U		0.000510	0.00150	0.00150	1	03/11/2019 15:32	WG1248119
(S) a,a,a-Trifluorotoluene(PID)	*96.3*				*79.0-125*		*03/11/2019 15:32*	WG1248119

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.0751		0.000190	0.000500	0.000500	1	03/11/2019 15:56	WG1248119
Toluene	0.0121		0.000412	0.00100	0.00100	1	03/11/2019 15:56	WG1248119
Ethylbenzene	0.00905		0.000160	0.000500	0.000500	1	03/11/2019 15:56	WG1248119
Total Xylene	0.0263		0.000510	0.00150	0.00150	1	03/11/2019 15:56	WG1248119
(S) a,a,a-Trifluorotoluene(PID)	*96.8*				*79.0-125*		*03/11/2019 15:56*	WG1248119

Method Blank (MB)

(MB) R3390339-2 03/05/19 18:22

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	0.000276	J	0.000190	0.000500
Toluene	0.000882	J	0.000412	0.00100
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*95.7*			*79.0-125*

Laboratory Control Sample (LCS)

(LCS) R3390339-1 03/05/19 17:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0546	109	77.0-122	
Toluene	0.0500	0.0533	107	80.0-121	
Ethylbenzene	0.0500	0.0506	101	80.0-123	
Total Xylene	0.150	0.157	104	47.0-154	
(S) a,a,a-Trifluorotoluene(PID)			*95.6*	*79.0-125*	

Method Blank (MB)

(MB) R3390563-2 03/11/19 12:37

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	U		0.000412	0.00100
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*96.2*			*79.0-125*

Laboratory Control Sample (LCS)

(LCS) R3390563-1 03/11/19 11:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0520	104	77.0-122	
Toluene	0.0500	0.0475	95.0	80.0-121	
Ethylbenzene	0.0500	0.0480	96.0	80.0-123	
Total Xylene	0.150	0.146	97.5	47.0-154	
(S) a,a,a-Trifluorotoluene(PID)			*96.9*	*79.0-125*	

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.
MQL	Method Quantitation Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
SDL	Sample Detection Limit.
(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 Sample Detection Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.
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
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

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

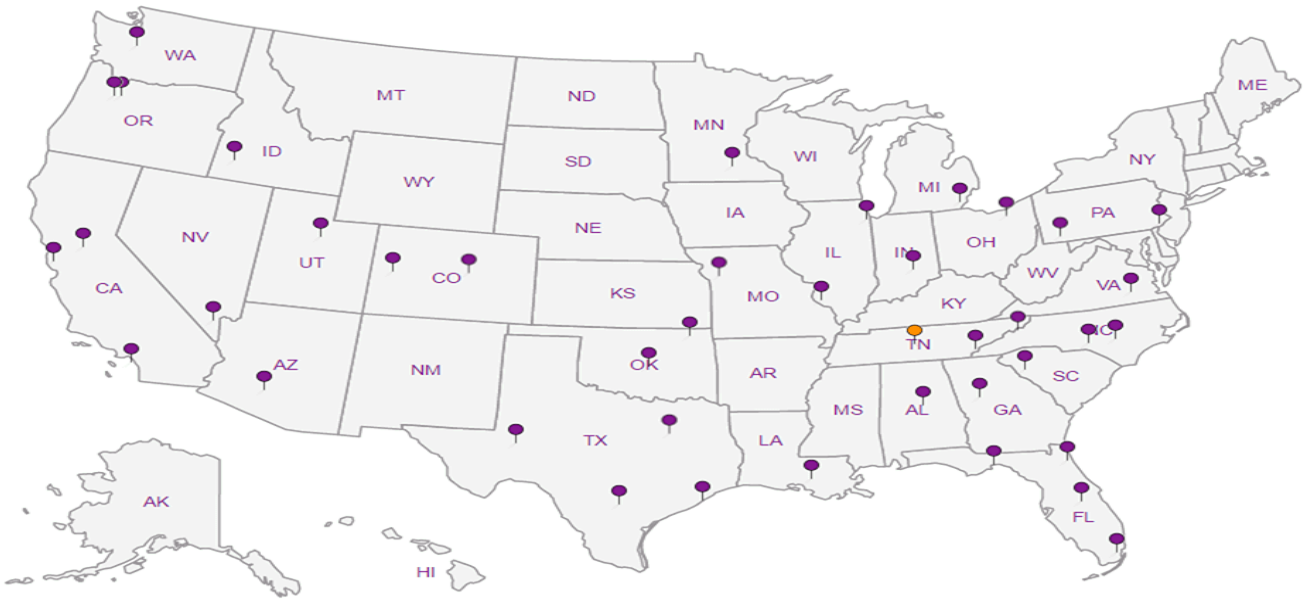
Third Party Federal Accreditations

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, LP - GHD

2135 S Loop 250 W
Midland, TX 79703

Billing Information:
Accounts Payable
505 N. Big Spring, Ste. 600
Midland, TX 79701

Pres Chk

Report to: John Schnable

Email To: john.schnable@ghd.com; christopher.knight@ghd.com

Project Description: Darr Angell #4 - Lea County, New Mexico

City/State Collected:

Phone: 432-686-0086
Fax:

Client Project # 074684

Lab Project # PLAINSGHD-074684

Collected by (print):

Site/Facility ID # SRS#: 2001-10876

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 ___ 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# L1075054
1011

Acctnum: PLAINSGHD
Template: T139793
Prelogin: P695139
TSR: 134 - Mark W. Beasley
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 40mlAmb-HCl	Remarks	Sample # (lab only)
RW-7-022819	Grab	GW	—	2/28/19	915	3	X		-01
MW-16-022819	Grab	GW	—	2/28/19	945	1			-02
RW-15-022819	Grab	GW	—	2/28/19	950				-03
MW-14-022819	Grab	GW	—	2/28/19	1020				-04
MW-15-022819	Grab	GW	—	2/28/19	1055				-05
MW-4R-022819	Grab	GW	—	2/28/19	1103				-06
MW-10R-022819	Grab	GW	—	2/28/19	1130		X		-07
TRIP BLANK	Grab	GW	—	2/28/19	—	1			-08
MW-12R-022819	Grab	GW	—	2/28/19	1205	3	X		-09
MW-17-022819	Grab	GW	—	2/28/19	1250	3	X		-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 #

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]	3/1/19	0800	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Mark T.

Trip Blank Received: (Yes) / No
HCl / MeOH
TBR
1

Temp: 1.8-2=1.6 °C Bottles Received: 42+TB

Date: 3/2 Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: (NCF) / OK

Plains All American, LP - GHD

2135 S Loop 250 W
Midland, TX 79703

Billing Information:
Accounts Payable
505 N. Big Spring, Ste. 600
Midland, TX 79701

Pres Chk

Report to: John Schnable

Email To: john.schnable@ghd.com; christopher.knight@ghd.com

Project Description: Darr Angell #4 - Lea County, New Mexico

City/State Collected:

Phone: 432-686-0086
Fax:

Client Project # 074684

Lab Project # PLAINSGHD-074684

Collected by (print):

Site/Facility ID # SRS#: 2001-10876

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 ___ 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 # L1075054

Table #

Acctnum: PLAINSGHD
Template: T139793
Prelogin: P695139
TSR: 134 - Mark W. Beasley
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 40ml Amb-HCl	Remarks	Sample # (lab only)
RW-13-022819	Grab	GW	–	2/28/19	1300	3	X		-11
RW-14-022819	Grab	GW	–		1530				-12
RW-5R-022819	Grab	GW	–		1630				-13
Dup-01-022819	Grab	GW	–		–				-14
Dup-02-022819	Grab	GW	–		–				-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:

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
[signature]	3/1/19	0800		1	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 1.8-.2=1.6 42+TB	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 3/2 Time: 8:45	Hold: / Condition: (NCF) / OK

Andy Vann

Login #: L1075054	Client: PLAINSGHD	Date: 3/2/19	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 / Couri
	Insufficient sample volume.	X	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		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 MW-8R not listed on the COC.

Client informed by:		Call		Email		Voice Mail		Date: 3/4/19	Time: 0905
TSR Initials: MB	Client Contact: John Schnable								

Login Instructions:

Add to COC and run

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

June 06, 2019

Plains All American, LP - GHD

Sample Delivery Group:	L1102369
Samples Received:	05/24/2019
Project Number:	074684
Description:	Darr Angell #4 - Lea County, New Mexico
Site:	SRS#: 2001-10876
Report To:	James Ornelas 2135 S Loop 250 W Midland, TX 79703

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.

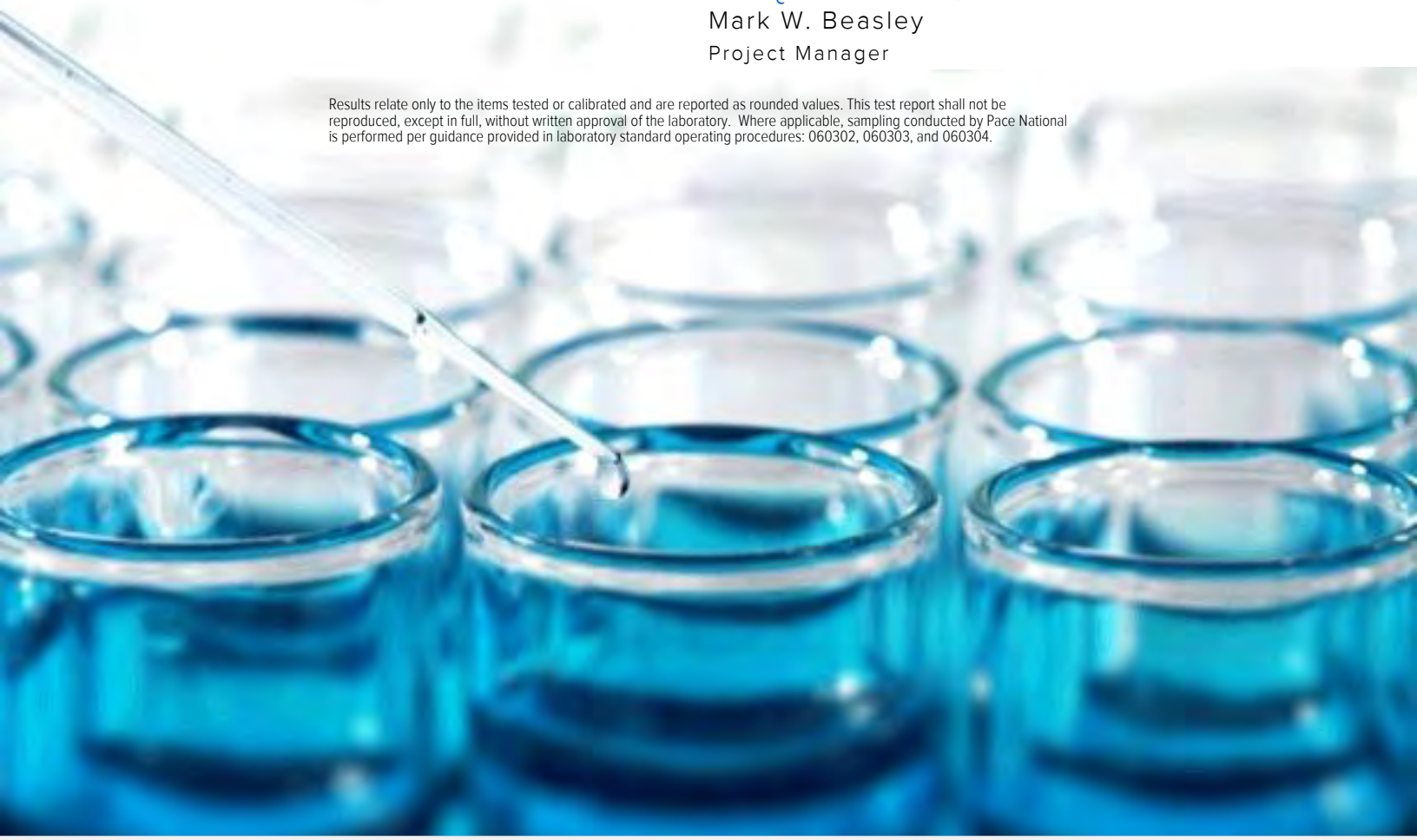


TABLE OF CONTENTS

MW-3R-052319 L1102369-01 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 07:15 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1288848	1	05/30/19 22:15	05/30/19 22:15	ACE	Mt. Juliet, TN

MW-4R-052319 L1102369-02 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 07:45 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1288848	1	05/30/19 22:39	05/30/19 22:39	ACE	Mt. Juliet, TN

MW-12R-052319 L1102369-03 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 08:10 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1288848	1	05/30/19 23:03	05/30/19 23:03	ACE	Mt. Juliet, TN

MW-14-052319 L1102369-04 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 08:30 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1290318	1	06/04/19 01:23	06/04/19 01:23	DWR	Mt. Juliet, TN

MW-15-052319 L1102369-05 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 08:45 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1290318	1	06/04/19 01:43	06/04/19 01:43	DWR	Mt. Juliet, TN

RW-14-052319 L1102369-06 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 09:25 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1290318	1	06/04/19 02:04	06/04/19 02:04	DWR	Mt. Juliet, TN

RW-15-052319 L1102369-07 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 10:00 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1290171	1	06/03/19 17:05	06/03/19 17:05	BMB	Mt. Juliet, TN

MW-16-052319 L1102369-08 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 10:15 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1290171	1	06/03/19 17:29	06/03/19 17:29	BMB	Mt. Juliet, TN

MW-10R-052319 L1102369-09 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 10:40 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1290171	1	06/03/19 18:04	06/03/19 18:04	BMB	Mt. Juliet, TN

RW-5R-052319 L1102369-10 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 11:30 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1290171	1	06/03/19 18:28	06/03/19 18:28	BMB	Mt. Juliet, TN

MW-17-052319 L1102369-11 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 12:10 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1290395	1	06/04/19 02:24	06/04/19 02:24	DWR	Mt. Juliet, TN

MW-8R-052319 L1102369-12 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 12:40 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1290395	5	06/04/19 07:12	06/04/19 07:12	DWR	Mt. Juliet, TN

DUP-1-052319 L1102369-13 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 00:00 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1290395	1	06/04/19 02:45	06/04/19 02:45	DWR	Mt. Juliet, TN

DUP-2-052319 L1102369-14 GW

Collected by: Justin Nixon | Collected date/time: 05/23/19 00:00 | Received date/time: 05/24/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1290395	1	06/04/19 03:05	06/04/19 03:05	DWR	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

This data package consists of this signature page, the laboratory review checklist, and the following reportable data as applicable:

R1 - Field chain-of-custody documentation;

R2 - Sample identification cross-reference;

R3 - Test reports (analytical data sheets) for each environmental sample that includes:

a. Items consistent with NELAC Chapter 5,

b. dilution factors,

c. preparation methods,

d. cleanup methods, and

e. if required for the project, tentatively identified compounds (TICs).

R4 - Surrogate recovery data including:

a. Calculated recovery (%R), and

b. The laboratory's surrogate QC limits.

R5 - Test reports/summary forms for blank samples;

R6 - Test reports/summary forms for laboratory control samples (LCSs) including:

a. LCS spiking amounts,

b. Calculated %R for each analyte, and

c. The laboratory's LCS QC limits.

R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a. Samples associated with the MS/MSD clearly identified,

b. MS/MSD spiking amounts,

c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,

d. Calculated %Rs and relative percent differences (RPDs), and

e. The laboratory's MS/MSD QC limits

R8 - Laboratory analytical duplicate (if applicable) recovery and precision:

a. The amount of analyte measured in the duplicate,

b. The calculated RPD, and

c. The laboratory's QC limits for analytical duplicates.

R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 - Other problems or anomalies.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Mark W. Beasley
Project Manager

Laboratory Review Checklist: Reportable Data

Laboratory Name: Pace Analytical National	LRC Date: 06/06/2019 10:45
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1102369-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13 and 14
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1288848, WG1290318, WG1290395 and WG1290171

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?		X			1
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Supporting Data

Laboratory Name: Pace Analytical National	LRC Date: 06/06/2019 10:45
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1102369-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13 and 14
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1288848, WG1290318, WG1290395 and WG1290171

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?			X		
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports

Laboratory Name: Pace Analytical National	LRC Date: 06/06/2019 10:45
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1102369-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13 and 14
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1288848, WG1290318, WG1290395 and WG1290171

ER #[1]	Description
1	8021B WG1290171 Total Xylene L1102369-07: Concentration in the Blank >MQL. 8021B WG1290318 Total Xylene L1102369-04: Concentration in the Blank >MQL.

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	05/30/2019 22:15	WG1288848
Toluene	U		0.000412	0.00100	0.00100	1	05/30/2019 22:15	WG1288848
Ethylbenzene	U		0.000160	0.000500	0.000500	1	05/30/2019 22:15	WG1288848
Total Xylene	U		0.000510	0.00150	0.00150	1	05/30/2019 22:15	WG1288848
(S) a,a,a-Trifluorotoluene(PID)	*102*				*79.0-125*		*05/30/2019 22:15*	WG1288848

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	05/30/2019 22:39	WG1288848
Toluene	U		0.000412	0.00100	0.00100	1	05/30/2019 22:39	WG1288848
Ethylbenzene	U		0.000160	0.000500	0.000500	1	05/30/2019 22:39	WG1288848
Total Xylene	U		0.000510	0.00150	0.00150	1	05/30/2019 22:39	WG1288848
(S) a,a,a-Trifluorotoluene(PID)	*101*				*79.0-125*		*05/30/2019 22:39*	WG1288848

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	05/30/2019 23:03	WG1288848
Toluene	0.00132		0.000412	0.00100	0.00100	1	05/30/2019 23:03	WG1288848
Ethylbenzene	0.000627		0.000160	0.000500	0.000500	1	05/30/2019 23:03	WG1288848
Total Xylene	U		0.000510	0.00150	0.00150	1	05/30/2019 23:03	WG1288848
(S) a,a,a-Trifluorotoluene(PID)	*101*				*79.0-125*		*05/30/2019 23:03*	WG1288848

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000217	B J	0.000190	0.000500	0.000500	1	06/04/2019 01:23	WG1290318
Toluene	U		0.000412	0.00100	0.00100	1	06/04/2019 01:23	WG1290318
Ethylbenzene	U		0.000160	0.000500	0.000500	1	06/04/2019 01:23	WG1290318
Total Xylene	0.000785	B J	0.000510	0.00150	0.00150	1	06/04/2019 01:23	WG1290318
(S) a,a,a-Trifluorotoluene(PID)	*96.9*				*79.0-125*		*06/04/2019 01:23*	WG1290318

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	06/04/2019 01:43	WG1290318
Toluene	U		0.000412	0.00100	0.00100	1	06/04/2019 01:43	WG1290318
Ethylbenzene	U		0.000160	0.000500	0.000500	1	06/04/2019 01:43	WG1290318
Total Xylene	U		0.000510	0.00150	0.00150	1	06/04/2019 01:43	WG1290318
(S) a,a,a-Trifluorotoluene(PID)	*96.1*				*79.0-125*		*06/04/2019 01:43*	WG1290318

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00100	B	0.000190	0.000500	0.000500	1	06/04/2019 02:04	WG1290318
Toluene	0.00109		0.000412	0.00100	0.00100	1	06/04/2019 02:04	WG1290318
Ethylbenzene	0.000595	B	0.000160	0.000500	0.000500	1	06/04/2019 02:04	WG1290318
Total Xylene	U		0.000510	0.00150	0.00150	1	06/04/2019 02:04	WG1290318
(S) a,a,a-Trifluorotoluene(PID)	*95.4*				*79.0-125*		*06/04/2019 02:04*	WG1290318

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	06/03/2019 17:05	WG1290171
Toluene	0.00131		0.000412	0.00100	0.00100	1	06/03/2019 17:05	WG1290171
Ethylbenzene	0.000354	B J	0.000160	0.000500	0.000500	1	06/03/2019 17:05	WG1290171
Total Xylene	0.00195	B	0.000510	0.00150	0.00150	1	06/03/2019 17:05	WG1290171
(S) a,a,a-Trifluorotoluene(PID)	*102*				*79.0-125*		*06/03/2019 17:05*	WG1290171

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00101		0.000190	0.000500	0.000500	1	06/03/2019 17:29	WG1290171
Toluene	0.00396		0.000412	0.00100	0.00100	1	06/03/2019 17:29	WG1290171
Ethylbenzene	0.000825	B	0.000160	0.000500	0.000500	1	06/03/2019 17:29	WG1290171
Total Xylene	0.0224		0.000510	0.00150	0.00150	1	06/03/2019 17:29	WG1290171
(S) a,a,a-Trifluorotoluene(PID)	*103*				*79.0-125*		*06/03/2019 17:29*	WG1290171

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00119		0.000190	0.000500	0.000500	1	06/03/2019 18:04	WG1290171
Toluene	0.00246		0.000412	0.00100	0.00100	1	06/03/2019 18:04	WG1290171
Ethylbenzene	0.000805	B	0.000160	0.000500	0.000500	1	06/03/2019 18:04	WG1290171
Total Xylene	0.0120		0.000510	0.00150	0.00150	1	06/03/2019 18:04	WG1290171
(S) a,a,a-Trifluorotoluene(PID)	*103*				*79.0-125*		*06/03/2019 18:04*	WG1290171

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00341		0.000190	0.000500	0.000500	1	06/03/2019 18:28	WG1290171
Toluene	0.000517	J	0.000412	0.00100	0.00100	1	06/03/2019 18:28	WG1290171
Ethylbenzene	0.00593		0.000160	0.000500	0.000500	1	06/03/2019 18:28	WG1290171
Total Xylene	0.0634		0.000510	0.00150	0.00150	1	06/03/2019 18:28	WG1290171
(S) a,a,a-Trifluorotoluene(PID)	*105*				*79.0-125*		*06/03/2019 18:28*	WG1290171

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.000666	B	0.000190	0.000500	0.000500	1	06/04/2019 02:24	WG1290395
Toluene	0.000472	J	0.000412	0.00100	0.00100	1	06/04/2019 02:24	WG1290395
Ethylbenzene	0.00463		0.000160	0.000500	0.000500	1	06/04/2019 02:24	WG1290395
Total Xylene	0.0331		0.000510	0.00150	0.00150	1	06/04/2019 02:24	WG1290395
(S) a,a,a-Trifluorotoluene(PID)	*95.1*				*79.0-125*		*06/04/2019 02:24*	WG1290395

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.190		0.000950	0.000500	0.00250	5	06/04/2019 07:12	WG1290395
Toluene	0.0326		0.00206	0.00100	0.00500	5	06/04/2019 07:12	WG1290395
Ethylbenzene	0.0788		0.000800	0.000500	0.00250	5	06/04/2019 07:12	WG1290395
Total Xylene	0.158		0.00255	0.00150	0.00750	5	06/04/2019 07:12	WG1290395
(S) a,a,a-Trifluorotoluene(PID)	*93.5*				*79.0-125*		*06/04/2019 07:12*	WG1290395

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.000950	B	0.000190	0.000500	0.000500	1	06/04/2019 02:45	WG1290395
Toluene	0.00122		0.000412	0.00100	0.00100	1	06/04/2019 02:45	WG1290395
Ethylbenzene	0.000702	B	0.000160	0.000500	0.000500	1	06/04/2019 02:45	WG1290395
Total Xylene	U		0.000510	0.00150	0.00150	1	06/04/2019 02:45	WG1290395
(S) a,a,a-Trifluorotoluene(PID)	*95.1*				*79.0-125*		*06/04/2019 02:45*	WG1290395

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.116		0.000190	0.000500	0.000500	1	06/04/2019 03:05	WG1290395
Toluene	0.0201		0.000412	0.00100	0.00100	1	06/04/2019 03:05	WG1290395
Ethylbenzene	0.0459		0.000160	0.000500	0.000500	1	06/04/2019 03:05	WG1290395
Total Xylene	0.110		0.000510	0.00150	0.00150	1	06/04/2019 03:05	WG1290395
(S) a,a,a-Trifluorotoluene(PID)	*91.2*				*79.0-125*		*06/04/2019 03:05*	WG1290395

Method Blank (MB)

(MB) R3417359-2 05/30/19 18:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	U		0.000412	0.00100
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*104*			*79.0-125*

Laboratory Control Sample (LCS)

(LCS) R3417359-1 05/30/19 12:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0484	96.9	77.0-122	
Toluene	0.0500	0.0495	98.9	80.0-121	
Ethylbenzene	0.0500	0.0510	102	80.0-123	
Total Xylene	0.150	0.150	99.9	47.0-154	
(S) a,a,a-Trifluorotoluene(PID)			*99.3*	*79.0-125*	

Method Blank (MB)

(MB) R3417691-3 06/03/19 14:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	U		0.000412	0.00100
Ethylbenzene	0.000177	J	0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*103*			*79.0-125*

Laboratory Control Sample (LCS)

(LCS) R3417691-1 06/03/19 13:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0507	101	77.0-122	
Toluene	0.0500	0.0488	97.6	80.0-121	
Ethylbenzene	0.0500	0.0541	108	80.0-123	
Total Xylene	0.150	0.158	105	47.0-154	
(S) a,a,a-Trifluorotoluene(PID)			*103*	*79.0-125*	

Method Blank (MB)

(MB) R3417473-2 06/04/19 00:42

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	0.000245	J	0.000190	0.000500
Toluene	U		0.000412	0.00100
Ethylbenzene	0.000180	J	0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*96.9*			*79.0-125*

Laboratory Control Sample (LCS)

(LCS) R3417473-1 06/03/19 23:40

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0492	98.4	77.0-122	
Toluene	0.0500	0.0493	98.7	80.0-121	
Ethylbenzene	0.0500	0.0512	102	80.0-123	
Total Xylene	0.150	0.157	105	47.0-154	
(S) a,a,a-Trifluorotoluene(PID)			*95.3*	*79.0-125*	

Method Blank (MB)

(MB) R3417474-2 06/04/19 00:42

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	0.000245	J	0.000190	0.000500
Toluene	U		0.000412	0.00100
Ethylbenzene	0.000180	J	0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*96.9*			*79.0-125*

Laboratory Control Sample (LCS)

(LCS) R3417474-1 06/03/19 23:40

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0492	98.4	77.0-122	
Toluene	0.0500	0.0493	98.7	80.0-121	
Ethylbenzene	0.0500	0.0512	102	80.0-123	
Total Xylene	0.150	0.157	105	47.0-154	
(S) a,a,a-Trifluorotoluene(PID)			*95.3*	*79.0-125*	

L1103333-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1103333-04 06/04/19 06:10 • (MS) R3417474-3 06/04/19 07:32 • (MSD) R3417474-4 06/04/19 07:53

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	U	0.0473	0.0466	94.5	93.2	1	10.0-160			1.45	21
Toluene	0.0500	U	0.0451	0.0449	90.2	89.7	1	12.0-148			0.601	21
Ethylbenzene	0.0500	U	0.0474	0.0470	94.9	94.0	1	22.0-149			0.921	21
Total Xylene	0.150	U	0.146	0.144	97.1	95.9	1	13.0-155			1.17	21
(S) a,a,a-Trifluorotoluene(PID)					*94.4*	*94.7*		*79.0-125*				

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.
MQL	Method Quantitation Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
SDL	Sample Detection Limit.
(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 Sample Detection Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.
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.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
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
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

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

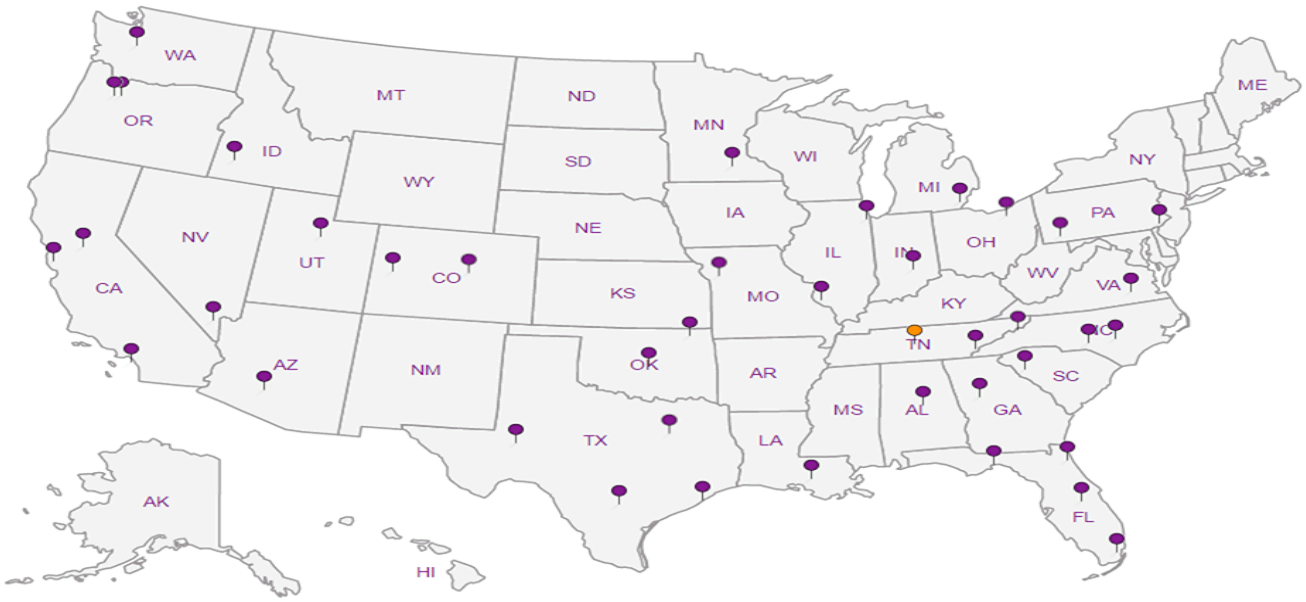
Third Party Federal Accreditations

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, LP - GHD

2135 S Loop 250 W
Midland, TX 79703

Billing Information:
Accounts Payable
505 N. Big Spring, Ste. 600
Midland, TX 79701

Report to: **John Schnable**

Email To: **john.schnable@ghd.com; christopher.knight@ghd.com**

Project Description: **Darr Angell #4 - Lea County, New Mexico**

City/State Collected:

Phone: **432-686-0086**
Fax:

Client Project # **074684**

Lab Project # **PLAINSGHD-074684**

Collected by (print): Justin Nixon

Site/Facility ID # **SRS#: 2001-10876**

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

Date Results Needed

Quote #

Pres Chk

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# 1102369

B060

Acctnum: **PLAINSGHD**
Template: **T139793**
Prelogin: **P708920**
TSR: **134 - Mark W. Beasley**
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 40ml Amb-HCl	Remarks	Sample # (lab only)
mw-3R-052319	G	GW		5-23-19	715	3	X		-01
mw-7R-052319		GW			745				-02
mw-12R 052319		GW			810				-03
mw-14-052319		GW			830				-04
mw-15-052319		GW			845				-05
Rw-14-052319		GW			925				-06
Rw-15-052319		GW			1000				-07
mw-16 052319		GW			1015				-08
mw-10R-052319		GW			1040				-09
Rw-5R 052319		GW			1130				-10

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

Remarks:
Report SDLs
Flag Estimated Concentrations

RAD SCREEN: <0.5 mR/hr

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 488286312344 12311

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
	5-23-19	1400		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.4°C +1 1.5°C Bottles Received: 42
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/24/19 TDAS Time: 0830

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Plains All American, LP - GHD

2135 S Loop 250 W
Midland, TX 79703

Billing Information:
Accounts Payable
505 N. Big Spring, Ste. 600
Midland, TX 79701

Pres Chk

Report to: **John Schnable**

Email To: **john.schnable@ghd.com; christopher.knight@ghd.com**

Project Description: **Darr Angell #4 - Lea County, New Mexico**

City/State Collected:

Phone: **432-686-0086**
Fax:

Client Project # **074684**

Lab Project # **PLAINSGHD-074684**

Collected by (print):

Site/Facility ID # **SRS#: 2001-10876**

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	Analysis / Container / Preservative: BTEX 40mlAmb-HCl	Remarks	Sample # (lab only)
mw-17-052319	G	GW		5-23-19	1210	3	X		-11
mw-8R-052319		GW			1240				-12
Dup-1-052319		GW			-				-13
Dup-2-052319		GW			-				
		GW							
		GW							
		GW							
TRIP BLANK		GW					X		

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# 110 2369

Table #

Acctnum: **PLAINSGHD**
Template: **T139793**
Prelogin: **P708920**
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 __ _____

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
	5-23-19	1400			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.0 °C 1.1 1.5	Bottles Received: 42
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/24/19 THAS	Time: 0930

Hold: | Condition: NCF / OK

Troy Dunlap

Pace Analytical®
National Center for Testing & Innovation

Login #: L1102369	Client: PLAINSGHD	Date: 05/24/29	Evaluated by: PN

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time	X	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		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 trip blank received.

Client informed by:		Call		Email		Voice Mail		Date: 5/24/19	Time: 1830
TSR Initials: MB	Client Contact:								

Login Instructions:

Client notified

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

August 02, 2019

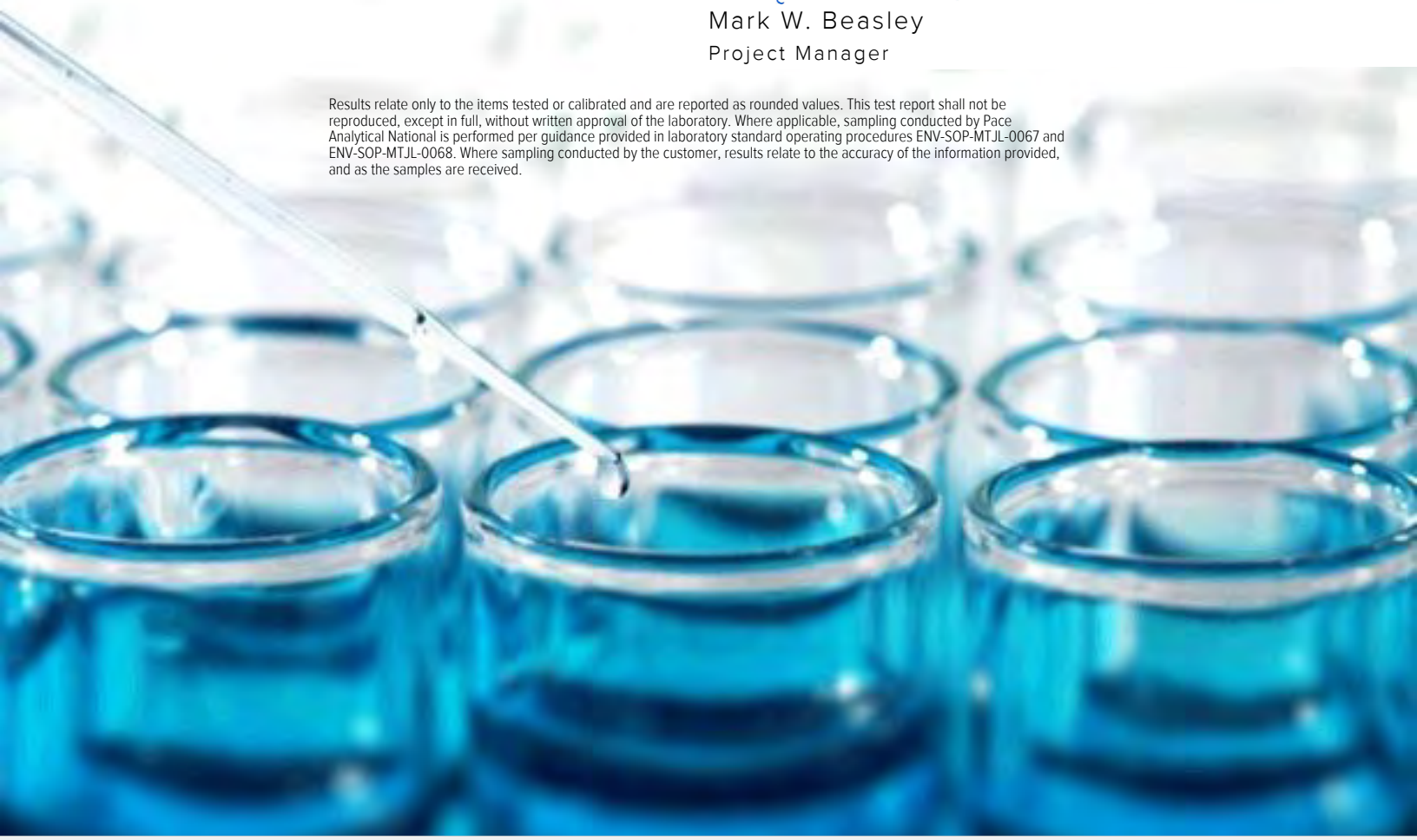
Plains All American, LP - GHD

Sample Delivery Group:	L1122861
Samples Received:	07/26/2019
Project Number:	074684
Description:	Darr Angell #4 - Lea County, New Mexico
Site:	SRS#: 2001-10876
Report To:	James Ornelas 2135 S Loop 250 W Midland, TX 79703

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 Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



MW-3R-072519 L1122861-01 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 08:30 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1318966	1	07/28/19 18:26	07/28/19 18:26	BMB	Mt. Juliet, TN

MW-4R-072519 L1122861-02 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 09:15 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1318966	1	07/28/19 18:50	07/28/19 18:50	BMB	Mt. Juliet, TN

MW-12R-072519 L1122861-03 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 09:50 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1318966	1	07/28/19 19:14	07/28/19 19:14	BMB	Mt. Juliet, TN

MW-15-072519 L1122861-04 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 10:05 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1318966	1	07/28/19 19:38	07/28/19 19:38	BMB	Mt. Juliet, TN

RW-14-072519 L1122861-05 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 10:45 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1318966	1	07/28/19 20:02	07/28/19 20:02	BMB	Mt. Juliet, TN

RW-15-072519 L1122861-06 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 11:30 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1318966	1	07/28/19 20:26	07/28/19 20:26	BMB	Mt. Juliet, TN

MW-16-072519 L1122861-07 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 11:50 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1318966	1	07/28/19 20:50	07/28/19 20:50	BMB	Mt. Juliet, TN

MW-10R-072519 L1122861-08 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 12:40 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1319205	1	07/29/19 16:46	07/29/19 16:46	BMB	Mt. Juliet, TN

RW-5R-072519 L1122861-09 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 13:35 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1319205	1	07/29/19 17:10	07/29/19 17:10	BMB	Mt. Juliet, TN

MW-17-072519 L1122861-10 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 14:05 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1319205	1	07/29/19 17:34	07/29/19 17:34	BMB	Mt. Juliet, TN

MW-8R-072519 L1122861-11 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 14:30 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1319205	1	07/29/19 17:58	07/29/19 17:58	BMB	Mt. Juliet, TN

DUP-1-072519 L1122861-12 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 00:00 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1319205	1	07/29/19 18:22	07/29/19 18:22	BMB	Mt. Juliet, TN

DUP-2-072519 L1122861-13 GW

Collected by: Justin Nixon | Collected date/time: 07/25/19 00:00 | Received date/time: 07/26/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1319205	1	07/29/19 18:46	07/29/19 18:46	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.

Mark W. Beasley
Project Manager

This data package consists of this signature page, the laboratory review checklist, and the following reportable data as applicable:

R1 - Field chain-of-custody documentation;

R2 - Sample identification cross-reference;

R3 - Test reports (analytical data sheets) for each environmental sample that includes:

a. Items consistent with NELAC Chapter 5,

b. dilution factors,

c. preparation methods,

d. cleanup methods, and

e. if required for the project, tentatively identified compounds (TICs).

R4 - Surrogate recovery data including:

a. Calculated recovery (%R), and

b. The laboratory's surrogate QC limits.

R5 - Test reports/summary forms for blank samples;

R6 - Test reports/summary forms for laboratory control samples (LCSs) including:

a. LCS spiking amounts,

b. Calculated %R for each analyte, and

c. The laboratory's LCS QC limits.

R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a. Samples associated with the MS/MSD clearly identified,

b. MS/MSD spiking amounts,

c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,

d. Calculated %Rs and relative percent differences (RPDs), and

e. The laboratory's MS/MSD QC limits

R8 - Laboratory analytical duplicate (if applicable) recovery and precision:

a. The amount of analyte measured in the duplicate,

b. The calculated RPD, and

c. The laboratory's QC limits for analytical duplicates.

R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 - Other problems or anomalies.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Mark W. Beasley
Project Manager

Laboratory Review Checklist: Reportable Data

Laboratory Name: Pace Analytical National	LRC Date: 08/02/2019 19:26
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1122861-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12 and 13
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1318966 and WG1319205

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Supporting Data

Laboratory Name: Pace Analytical National	LRC Date: 08/02/2019 19:26
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1122861-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12 and 13
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1318966 and WG1319205

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?			X		
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports

Laboratory Name: Pace Analytical National	LRC Date: 08/02/2019 19:26
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1122861-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12 and 13
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1318966 and WG1319205

ER #[1]	Description
	The Exception Report intentionally left blank, there are no exceptions applied to this SDG.

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	07/28/2019 18:26	WG1318966
Toluene	U		0.000412	0.00100	0.00100	1	07/28/2019 18:26	WG1318966
Ethylbenzene	0.000262	J	0.000160	0.000500	0.000500	1	07/28/2019 18:26	WG1318966
Total Xylene	U		0.000510	0.00150	0.00150	1	07/28/2019 18:26	WG1318966
(S) a,a,a-Trifluorotoluene(PID)	*103*				*79.0-125*		*07/28/2019 18:26*	WG1318966

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	07/28/2019 18:50	WG1318966
Toluene	U		0.000412	0.00100	0.00100	1	07/28/2019 18:50	WG1318966
Ethylbenzene	0.000215	J	0.000160	0.000500	0.000500	1	07/28/2019 18:50	WG1318966
Total Xylene	U		0.000510	0.00150	0.00150	1	07/28/2019 18:50	WG1318966
(S) a,a,a-Trifluorotoluene(PID)	*103*				*79.0-125*		*07/28/2019 18:50*	WG1318966

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	07/28/2019 19:14	WG1318966
Toluene	0.000775	J	0.000412	0.00100	0.00100	1	07/28/2019 19:14	WG1318966
Ethylbenzene	0.000405	J	0.000160	0.000500	0.000500	1	07/28/2019 19:14	WG1318966
Total Xylene	U		0.000510	0.00150	0.00150	1	07/28/2019 19:14	WG1318966
(S) a,a,a-Trifluorotoluene(PID)	*102*				*79.0-125*		*07/28/2019 19:14*	WG1318966

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	07/28/2019 19:38	WG1318966
Toluene	U		0.000412	0.00100	0.00100	1	07/28/2019 19:38	WG1318966
Ethylbenzene	U		0.000160	0.000500	0.000500	1	07/28/2019 19:38	WG1318966
Total Xylene	U		0.000510	0.00150	0.00150	1	07/28/2019 19:38	WG1318966
(S) a,a,a-Trifluorotoluene(PID)	*103*				*79.0-125*		*07/28/2019 19:38*	WG1318966

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00373		0.000190	0.000500	0.000500	1	07/28/2019 20:02	WG1318966
Toluene	0.00241		0.000412	0.00100	0.00100	1	07/28/2019 20:02	WG1318966
Ethylbenzene	0.00121		0.000160	0.000500	0.000500	1	07/28/2019 20:02	WG1318966
Total Xylene	0.00260		0.000510	0.00150	0.00150	1	07/28/2019 20:02	WG1318966
(S) a,a,a-Trifluorotoluene(PID)	*103*				*79.0-125*		*07/28/2019 20:02*	WG1318966

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000707		0.000190	0.000500	0.000500	1	07/28/2019 20:26	WG1318966
Toluene	0.00192		0.000412	0.00100	0.00100	1	07/28/2019 20:26	WG1318966
Ethylbenzene	0.000801		0.000160	0.000500	0.000500	1	07/28/2019 20:26	WG1318966
Total Xylene	0.00401		0.000510	0.00150	0.00150	1	07/28/2019 20:26	WG1318966
(S) a,a,a-Trifluorotoluene(PID)	*100*				*79.0-125*		*07/28/2019 20:26*	WG1318966

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	07/28/2019 20:50	WG1318966
Toluene	U		0.000412	0.00100	0.00100	1	07/28/2019 20:50	WG1318966
Ethylbenzene	U		0.000160	0.000500	0.000500	1	07/28/2019 20:50	WG1318966
Total Xylene	U		0.000510	0.00150	0.00150	1	07/28/2019 20:50	WG1318966
(S) a,a,a-Trifluorotoluene(PID)	*103*				*79.0-125*		*07/28/2019 20:50*	WG1318966

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	07/29/2019 16:46	WG1319205
Toluene	U		0.000412	0.00100	0.00100	1	07/29/2019 16:46	WG1319205
Ethylbenzene	0.000503		0.000160	0.000500	0.000500	1	07/29/2019 16:46	WG1319205
Total Xylene	U		0.000510	0.00150	0.00150	1	07/29/2019 16:46	WG1319205
(S) a,a,a-Trifluorotoluene(PID)	*101*				*79.0-125*		*07/29/2019 16:46*	WG1319205

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00177		0.000190	0.000500	0.000500	1	07/29/2019 17:10	WG1319205
Toluene	U		0.000412	0.00100	0.00100	1	07/29/2019 17:10	WG1319205
Ethylbenzene	0.00482		0.000160	0.000500	0.000500	1	07/29/2019 17:10	WG1319205
Total Xylene	0.0175		0.000510	0.00150	0.00150	1	07/29/2019 17:10	WG1319205
(S) a,a,a-Trifluorotoluene(PID)	*103*				*79.0-125*		*07/29/2019 17:10*	WG1319205

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000692		0.000190	0.000500	0.000500	1	07/29/2019 17:34	WG1319205
Toluene	U		0.000412	0.00100	0.00100	1	07/29/2019 17:34	WG1319205
Ethylbenzene	0.00169		0.000160	0.000500	0.000500	1	07/29/2019 17:34	WG1319205
Total Xylene	0.0163		0.000510	0.00150	0.00150	1	07/29/2019 17:34	WG1319205
(S) a,a,a-Trifluorotoluene(PID)	*103*				*79.0-125*		*07/29/2019 17:34*	WG1319205

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00664		0.000190	0.000500	0.000500	1	07/29/2019 17:58	WG1319205
Toluene	0.00343		0.000412	0.00100	0.00100	1	07/29/2019 17:58	WG1319205
Ethylbenzene	0.00415		0.000160	0.000500	0.000500	1	07/29/2019 17:58	WG1319205
Total Xylene	0.0248		0.000510	0.00150	0.00150	1	07/29/2019 17:58	WG1319205
(S) a,a,a-Trifluorotoluene(PID)	*101*				*79.0-125*		*07/29/2019 17:58*	WG1319205

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00181		0.000190	0.000500	0.000500	1	07/29/2019 18:22	WG1319205
Toluene	U		0.000412	0.00100	0.00100	1	07/29/2019 18:22	WG1319205
Ethylbenzene	0.00507		0.000160	0.000500	0.000500	1	07/29/2019 18:22	WG1319205
Total Xylene	0.0184		0.000510	0.00150	0.00150	1	07/29/2019 18:22	WG1319205
(S) a,a,a-Trifluorotoluene(PID)	*102*				*79.0-125*		*07/29/2019 18:22*	WG1319205

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000456	J	0.000190	0.000500	0.000500	1	07/29/2019 18:46	WG1319205
Toluene	U		0.000412	0.00100	0.00100	1	07/29/2019 18:46	WG1319205
Ethylbenzene	0.00130		0.000160	0.000500	0.000500	1	07/29/2019 18:46	WG1319205
Total Xylene	0.0128		0.000510	0.00150	0.00150	1	07/29/2019 18:46	WG1319205
(S) a,a,a-Trifluorotoluene(PID)	*102*				*79.0-125*		*07/29/2019 18:46*	WG1319205

Method Blank (MB)

(MB) R3436566-2 07/28/19 13:52

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	U		0.000412	0.00100
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*103*			*79.0-125*

Laboratory Control Sample (LCS)

(LCS) R3436566-1 07/28/19 12:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0442	88.5	77.0-122	
Toluene	0.0500	0.0429	85.8	80.0-121	
Ethylbenzene	0.0500	0.0463	92.6	80.0-123	
Total Xylene	0.150	0.138	91.7	47.0-154	
(S) a,a,a-Trifluorotoluene(PID)			*102*	*79.0-125*	

Method Blank (MB)

(MB) R3436571-2 07/29/19 10:39

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	U		0.000412	0.00100
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*102*			*79.0-125*

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

(LCS) R3436571-1 07/29/19 09:28 • (LCSD) R3436571-3 07/29/19 20:45

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	0.0500	0.0534	0.0470	107	94.1	77.0-122			12.7	20
Toluene	0.0500	0.0519	0.0455	104	90.9	80.0-121			13.2	20
Ethylbenzene	0.0500	0.0563	0.0497	113	99.4	80.0-123			12.5	20
Total Xylene	0.150	0.168	0.146	112	97.0	47.0-154			14.1	20
(S) a,a,a-Trifluorotoluene(PID)				*101*	*103*	*79.0-125*				

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.
MQL	Method Quantitation Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
SDL	Sample Detection Limit.
(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 Sample Detection Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.
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.

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

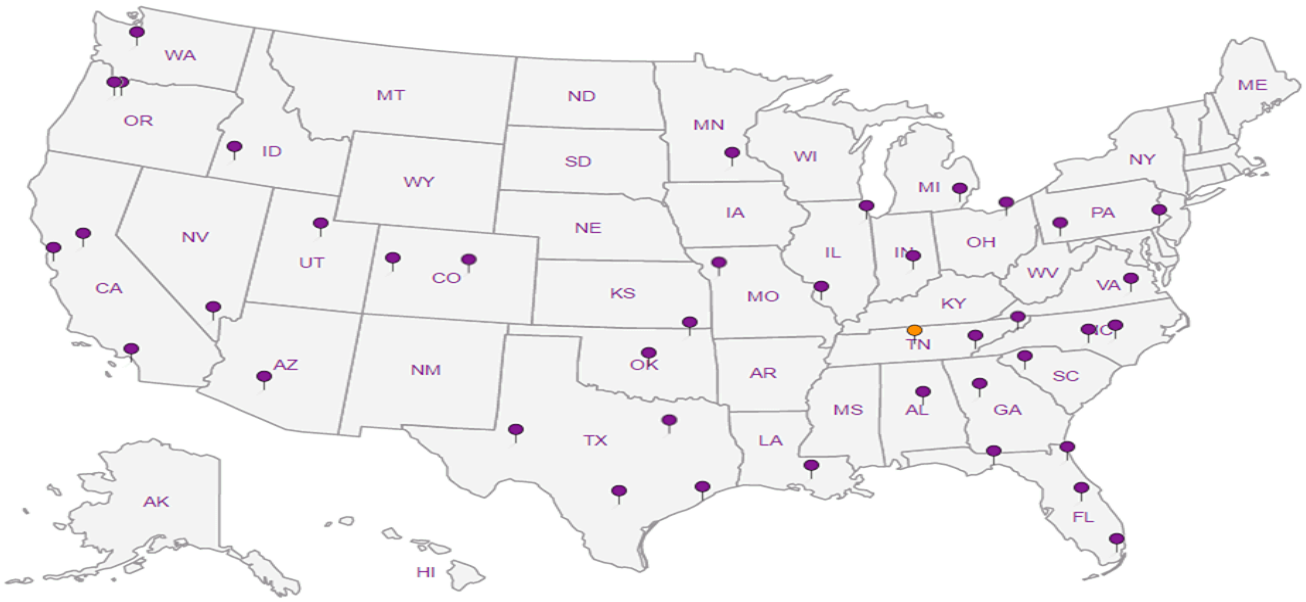
Third Party Federal Accreditations

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, LP - GHD

2135 S Loop 250 W
Midland, TX 79703

Billing Information:
Accounts Payable
505 N. Big Spring, Ste. 600
Midland, TX 79701

Pres Chk

Report to: James Ornelas

Email To: james.ornelas@ghd.com; christopher.knight@ghd.com

Project Description: Darr Angell #4 - Lea County, New Mexico

City/State Collected:

Phone: 432-686-0086
Fax:

Client Project # 074684

Lab Project # PLAINSGHD-074684

Collected by (print): Justin Nixon

Site/Facility ID # SRS#: 2001-10876

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

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# L1122861
1242

Acctnum: PLAINSGHD
Template: T139793
Prelogin: P719648
TSR: 134 - Mark W. Beasley
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 40mlAmb-HCl	Remarks	Sample # (lab only)
mw-3K-072519	G	GW		7-25-19	830	3	X		-01
mw-4K-072519		GW			915				02
mw-12K-072519		GW			950				03
mw-15-072519		GW			1005				04
RW-14-072519		GW			1045				05
RW-15-072519		GW			1130				06
mw-16-072519		GW			1150				07
mw-10K-072519		GW			1240				08
RW-5K-072519		GW			1335				09
mw-17-072519		GW			1405				10

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

Remarks: Report to SRS
Flag estimated concentrations

pH _____ Temp _____
Flow _____ Other _____

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

Tracking # 4510 1659 5174

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X 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	
	7-25-19	1715			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 5.3+0=5.3 39	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/26/19 Time: 8:45	Hold: / Condition: NCF / OK

Plains All American, LP - GHD

2135 S Loop 250 W
Midland, TX 79703

Billing Information:
Accounts Payable
505 N. Big Spring, Ste. 600
Midland, TX 79701

Pres Chk

Report to: James Ornelas

Email To: james.ornelas@ghd.com; christopher.knight@ghd.com

Project Description: Darr Angell #4 - Lea County, New Mexico

City/State Collected:

Phone: 432-686-0086
Fax:

Client Project # 074684

Lab Project # PLAINSGHD-074684

Collected by (print): Justin Nixon

Site/Facility ID # SRS#: 2001-10876

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	BTEX 40ml Amb-HCl										Remarks	Sample # (lab only)
MW-8K-072519	G	GW		7-25-19	1430	3	X											-11
Dup-1-072519	G	GW		↓	—	3	X											12
Dup-2-072519	G	GW		↓	—	3	X											13
		GW																
		GW																
		GW																
		GW																
TRIP BLANK		GW																

Analysis / Container / Preservative

Chain of Custody

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 # L1122861

Table #

Acctnum: PLAINSGHD
Template: T139793
Prelogin: P719648
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: Report to SOLs
flag estimated concentrations

pH _____ Temp _____
Flow _____ Other _____

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

Tracking # 5 cmc

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: X __N
Bottles arrive intact: X __N
Correct bottles used: X __N
Sufficient volume sent: X __N
If Applicable
VOA Zero Headspace: X __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	
	7-25-19	1715			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 5.3+0.5=5.8 39	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/26/19 Time: 8145	Hold: / Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

November 08, 2019

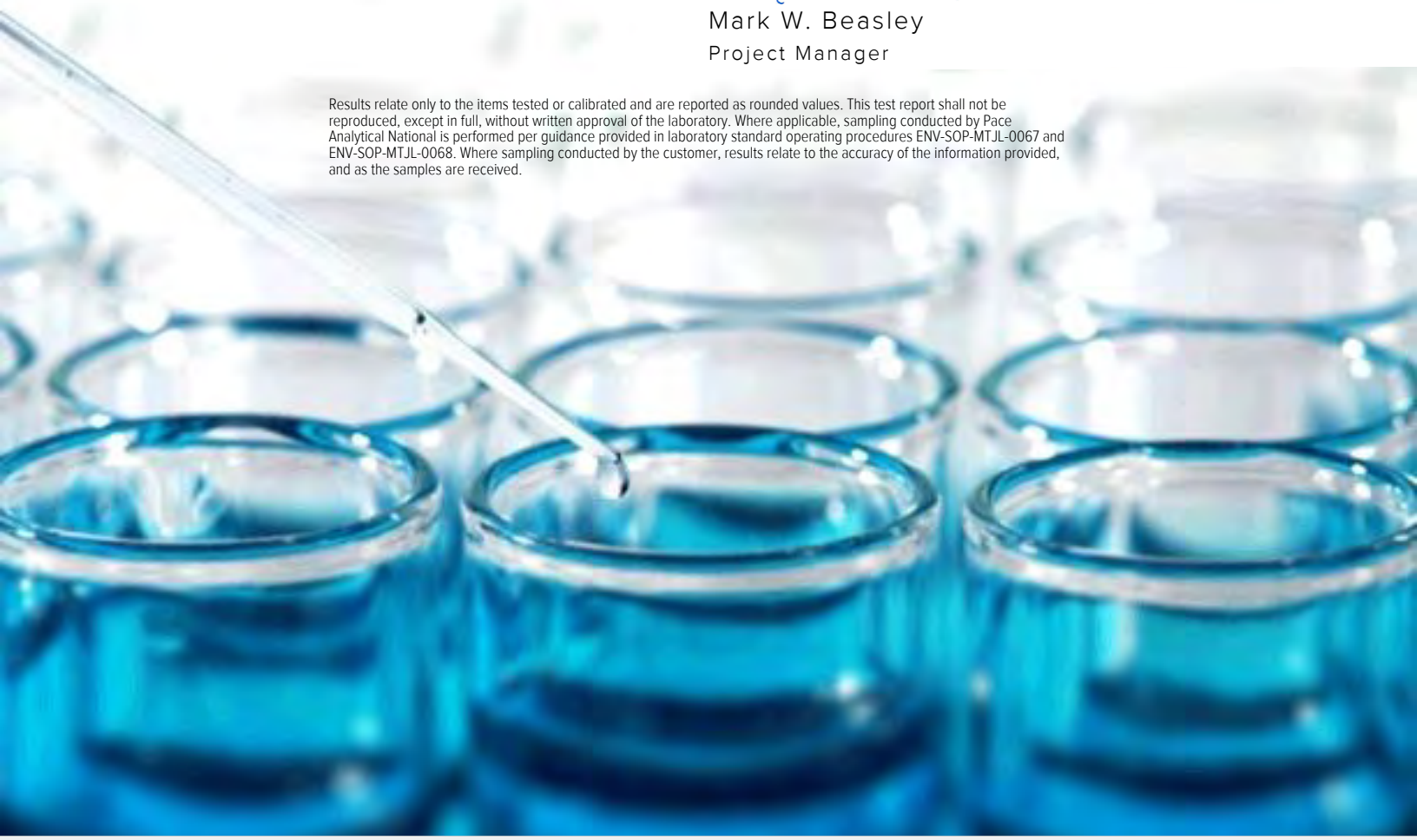
Plains All American, LP - GHD

Sample Delivery Group:	L1154385
Samples Received:	10/26/2019
Project Number:	074684
Description:	Darr Angell #4 - Lea County, New Mexico
Site:	SRS#: 2001-10876
Report To:	John Schnable 2135 S Loop 250 W Midland, TX 79703

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 Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



MW-15-102519 L1154385-01 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 10:00 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375650	1	11/06/19 20:45	11/06/19 20:45	DWR	Mt. Juliet, TN

MW-16-102519 L1154385-02 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 10:10 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375505	1	11/06/19 07:25	11/06/19 07:25	ACG	Mt. Juliet, TN

MW-10R-102519 L1154385-03 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 10:25 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375505	1	11/06/19 07:45	11/06/19 07:45	ACG	Mt. Juliet, TN

MW-3R-102519 L1154385-04 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 10:40 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375505	1	11/06/19 08:06	11/06/19 08:06	ACG	Mt. Juliet, TN

MW-4R-102519 L1154385-05 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 11:15 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375505	1	11/06/19 08:26	11/06/19 08:26	ACG	Mt. Juliet, TN

MW-12R-102519 L1154385-06 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 11:25 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375505	1	11/06/19 08:47	11/06/19 08:47	ACG	Mt. Juliet, TN

MW-17-102519 L1154385-07 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 11:35 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375505	1	11/06/19 09:07	11/06/19 09:07	ACG	Mt. Juliet, TN

RW-15-102519 L1154385-08 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 11:50 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375505	1	11/06/19 09:28	11/06/19 09:28	ACG	Mt. Juliet, TN

RW-5R-102519 L1154385-09 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 12:05 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375505	1	11/06/19 09:48	11/06/19 09:48	ACG	Mt. Juliet, TN

RW-14-102519 L1154385-10 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 12:20 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375505	1	11/06/19 10:09	11/06/19 10:09	ACG	Mt. Juliet, TN

DUP-1-102519 L1154385-11 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 00:00 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1376337	1	11/07/19 23:03	11/07/19 23:03	ACG	Mt. Juliet, TN

MW-8R-102519 L1154385-12 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 12:35 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375505	1	11/06/19 10:49	11/06/19 10:49	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1370550	1	10/29/19 17:41	10/30/19 02:51	AAT	Mt. Juliet, TN

DUP-2-102519 L1154385-13 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 00:00 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375650	1	11/06/19 21:08	11/06/19 21:08	DWR	Mt. Juliet, TN

TRIP BLANK L1154385-14 GW

Collected by: Justin Nixon | Collected date/time: 10/25/19 00:00 | Received date/time: 10/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021B	WG1375650	1	11/06/19 18:32	11/06/19 18:32	DWR	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

This data package consists of this signature page, the laboratory review checklist, and the following reportable data as applicable:

R1 - Field chain-of-custody documentation;

R2 - Sample identification cross-reference;

R3 - Test reports (analytical data sheets) for each environmental sample that includes:

a. Items consistent with NELAC Chapter 5,

b. dilution factors,

c. preparation methods,

d. cleanup methods, and

e. if required for the project, tentatively identified compounds (TICs).

R4 - Surrogate recovery data including:

a. Calculated recovery (%R), and

b. The laboratory's surrogate QC limits.

R5 - Test reports/summary forms for blank samples;

R6 - Test reports/summary forms for laboratory control samples (LCSs) including:

a. LCS spiking amounts,

b. Calculated %R for each analyte, and

c. The laboratory's LCS QC limits.

R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a. Samples associated with the MS/MSD clearly identified,

b. MS/MSD spiking amounts,

c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,

d. Calculated %Rs and relative percent differences (RPDs), and

e. The laboratory's MS/MSD QC limits

R8 - Laboratory analytical duplicate (if applicable) recovery and precision:

a. The amount of analyte measured in the duplicate,

b. The calculated RPD, and

c. The laboratory's QC limits for analytical duplicates.

R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 - Other problems or anomalies.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Mark W. Beasley
Project Manager

Laboratory Review Checklist: Reportable Data

Laboratory Name: Pace Analytical National	LRC Date: 11/08/2019 15:06
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1154385-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13 and 14
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1370550, WG1375505, WG1375650 and WG1376337

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?		X			1
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Supporting Data

Laboratory Name: Pace Analytical National	LRC Date: 11/08/2019 15:06
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1154385-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13 and 14
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1370550, WG1375505, WG1375650 and WG1376337

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports

Laboratory Name: Pace Analytical National	LRC Date: 11/08/2019 15:06
Project Name: Darr Angell #4 - Lea County, New Mexico	Laboratory Job Number: L1154385-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13 and 14
Reviewer Name: Mark W. Beasley	Prep Batch Number(s): WG1370550, WG1375505, WG1375650 and WG1376337

ER #[1]	Description
1	8021B WG1375650 Benzene, Toluene, Ethylbenzene, Total Xylene: Relative Percent Difference is outside of established control limits.

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	11/06/2019 20:45	WG1375650
Toluene	U		0.000412	0.00100	0.00100	1	11/06/2019 20:45	WG1375650
Ethylbenzene	U		0.000160	0.000500	0.000500	1	11/06/2019 20:45	WG1375650
Total Xylene	0.000829	J	0.000510	0.00150	0.00150	1	11/06/2019 20:45	WG1375650
(S) a,a,a-Trifluorotoluene(PID)	*106*				*79.0-125*		*11/06/2019 20:45*	WG1375650

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	11/06/2019 07:25	WG1375505
Toluene	0.000584	J	0.000412	0.00100	0.00100	1	11/06/2019 07:25	WG1375505
Ethylbenzene	U		0.000160	0.000500	0.000500	1	11/06/2019 07:25	WG1375505
Total Xylene	0.00195		0.000510	0.00150	0.00150	1	11/06/2019 07:25	WG1375505
(S) a,a,a-Trifluorotoluene(PID)	*92.5*				*79.0-125*		*11/06/2019 07:25*	WG1375505

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000571		0.000190	0.000500	0.000500	1	11/06/2019 07:45	WG1375505
Toluene	0.00169		0.000412	0.00100	0.00100	1	11/06/2019 07:45	WG1375505
Ethylbenzene	0.000455	J	0.000160	0.000500	0.000500	1	11/06/2019 07:45	WG1375505
Total Xylene	0.00155		0.000510	0.00150	0.00150	1	11/06/2019 07:45	WG1375505
(S) a,a,a-Trifluorotoluene(PID)	*92.3*				*79.0-125*		*11/06/2019 07:45*	WG1375505

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	11/06/2019 08:06	WG1375505
Toluene	U		0.000412	0.00100	0.00100	1	11/06/2019 08:06	WG1375505
Ethylbenzene	U		0.000160	0.000500	0.000500	1	11/06/2019 08:06	WG1375505
Total Xylene	0.000752	J	0.000510	0.00150	0.00150	1	11/06/2019 08:06	WG1375505
(S) a,a,a-Trifluorotoluene(PID)	*92.8*				*79.0-125*		*11/06/2019 08:06*	WG1375505

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	11/06/2019 08:26	WG1375505
Toluene	0.000498	J	0.000412	0.00100	0.00100	1	11/06/2019 08:26	WG1375505
Ethylbenzene	U		0.000160	0.000500	0.000500	1	11/06/2019 08:26	WG1375505
Total Xylene	0.000839	J	0.000510	0.00150	0.00150	1	11/06/2019 08:26	WG1375505
(S) a,a,a-Trifluorotoluene(PID)	*92.5*				*79.0-125*		*11/06/2019 08:26*	WG1375505

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	11/06/2019 08:47	WG1375505
Toluene	0.000953	J	0.000412	0.00100	0.00100	1	11/06/2019 08:47	WG1375505
Ethylbenzene	0.000343	J	0.000160	0.000500	0.000500	1	11/06/2019 08:47	WG1375505
Total Xylene	0.000574	J	0.000510	0.00150	0.00150	1	11/06/2019 08:47	WG1375505
(S) a,a,a-Trifluorotoluene(PID)	*91.8*				*79.0-125*		*11/06/2019 08:47*	WG1375505

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	11/06/2019 09:07	WG1375505
Toluene	U		0.000412	0.00100	0.00100	1	11/06/2019 09:07	WG1375505
Ethylbenzene	U		0.000160	0.000500	0.000500	1	11/06/2019 09:07	WG1375505
Total Xylene	0.00137	J	0.000510	0.00150	0.00150	1	11/06/2019 09:07	WG1375505
(S) a,a,a-Trifluorotoluene(PID)	*92.3*				*79.0-125*		*11/06/2019 09:07*	WG1375505

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.000631		0.000190	0.000500	0.000500	1	11/06/2019 09:28	WG1375505
Toluene	0.00165		0.000412	0.00100	0.00100	1	11/06/2019 09:28	WG1375505
Ethylbenzene	0.000707		0.000160	0.000500	0.000500	1	11/06/2019 09:28	WG1375505
Total Xylene	0.00209		0.000510	0.00150	0.00150	1	11/06/2019 09:28	WG1375505
(S) a,a,a-Trifluorotoluene(PID)	*90.6*				*79.0-125*		*11/06/2019 09:28*	WG1375505

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00104		0.000190	0.000500	0.000500	1	11/06/2019 09:48	WG1375505
Toluene	0.000575	J	0.000412	0.00100	0.00100	1	11/06/2019 09:48	WG1375505
Ethylbenzene	0.000704		0.000160	0.000500	0.000500	1	11/06/2019 09:48	WG1375505
Total Xylene	0.00263		0.000510	0.00150	0.00150	1	11/06/2019 09:48	WG1375505
(S) a,a,a-Trifluorotoluene(PID)	*92.9*				*79.0-125*		*11/06/2019 09:48*	WG1375505

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00355		0.000190	0.000500	0.000500	1	11/06/2019 10:09	WG1375505
Toluene	0.00204		0.000412	0.00100	0.00100	1	11/06/2019 10:09	WG1375505
Ethylbenzene	0.00120		0.000160	0.000500	0.000500	1	11/06/2019 10:09	WG1375505
Total Xylene	0.00159		0.000510	0.00150	0.00150	1	11/06/2019 10:09	WG1375505
(S) a,a,a-Trifluorotoluene(PID)	*93.5*				*79.0-125*		*11/06/2019 10:09*	WG1375505

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.00309		0.000190	0.000500	0.000500	1	11/07/2019 23:03	WG1376337
Toluene	0.00112		0.000412	0.00100	0.00100	1	11/07/2019 23:03	WG1376337
Ethylbenzene	0.000811		0.000160	0.000500	0.000500	1	11/07/2019 23:03	WG1376337
Total Xylene	0.00125	J	0.000510	0.00150	0.00150	1	11/07/2019 23:03	WG1376337
(S) a,a,a-Trifluorotoluene(PID)	*97.6*				*79.0-125*		*11/07/2019 23:03*	WG1376337

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0338		0.000190	0.000500	0.000500	1	11/06/2019 10:49	WG1375505
Toluene	0.00812		0.000412	0.00100	0.00100	1	11/06/2019 10:49	WG1375505
Ethylbenzene	0.0108		0.000160	0.000500	0.000500	1	11/06/2019 10:49	WG1375505
Total Xylene	0.0687		0.000510	0.00150	0.00150	1	11/06/2019 10:49	WG1375505
(S) a,a,a-Trifluorotoluene(PID)	*97.3*				*79.0-125*		*11/06/2019 10:49*	WG1375505

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

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Anthracene	0.0000497	J	0.0000140	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Acenaphthene	0.000113		0.0000100	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Acenaphthylene	U		0.0000120	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Benzo(a)anthracene	U		0.00000410	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Benzo(a)pyrene	U		0.0000116	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Benzo(b)fluoranthene	U		0.00000212	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Benzo(g,h,i)perylene	U		0.00000227	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Benzo(k)fluoranthene	U		0.0000136	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Chrysene	U		0.0000108	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Dibenz(a,h)anthracene	U		0.00000396	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Dibenzofuran	0.000473		0.00000105	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Fluoranthene	U		0.0000157	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Fluorene	0.000349		0.00000850	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Indeno(1,2,3-cd)pyrene	U		0.0000148	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Naphthalene	0.00112		0.0000198	0.000250	0.000250	1	10/30/2019 02:51	WG1370550
Phenanthrene	0.000535		0.00000820	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
Pyrene	0.0000117	J	0.0000117	0.0000500	0.0000500	1	10/30/2019 02:51	WG1370550
1-Methylnaphthalene	0.00106		0.00000821	0.000250	0.000250	1	10/30/2019 02:51	WG1370550
2-Methylnaphthalene	0.000356		0.00000902	0.000250	0.000250	1	10/30/2019 02:51	WG1370550
(S) Nitrobenzene-d5	*107*				*31.0-160*		*10/30/2019 02:51*	WG1370550
(S) 2-Fluorobiphenyl	*116*				*48.0-148*		*10/30/2019 02:51*	WG1370550
(S) p-Terphenyl-d14	*123*				*37.0-146*		*10/30/2019 02:51*	WG1370550

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	0.0385		0.000190	0.000500	0.000500	1	11/06/2019 21:08	WG1375650
Toluene	0.00766		0.000412	0.00100	0.00100	1	11/06/2019 21:08	WG1375650
Ethylbenzene	0.0103		0.000160	0.000500	0.000500	1	11/06/2019 21:08	WG1375650
Total Xylene	0.0858		0.000510	0.00150	0.00150	1	11/06/2019 21:08	WG1375650
(S) a,a,a-Trifluorotoluene(PID)	*103*				*79.0-125*		*11/06/2019 21:08*	WG1375650

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Benzene	U		0.000190	0.000500	0.000500	1	11/06/2019 18:32	WG1375650
Toluene	U		0.000412	0.00100	0.00100	1	11/06/2019 18:32	WG1375650
Ethylbenzene	U		0.000160	0.000500	0.000500	1	11/06/2019 18:32	WG1375650
Total Xylene	U		0.000510	0.00150	0.00150	1	11/06/2019 18:32	WG1375650
(S) a,a,a-Trifluorotoluene(PID)	*102*				*79.0-125*		*11/06/2019 18:32*	WG1375650

Method Blank (MB)

(MB) R3469174-3 11/06/19 06:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	U		0.000412	0.00100
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*94.9*			*79.0-125*

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

(LCS) R3469174-1 11/06/19 05:01 • (LCSD) R3469174-2 11/06/19 05:22

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	0.0500	0.0534	0.0540	107	108	77.0-122			1.12	20
Toluene	0.0500	0.0492	0.0494	98.4	98.8	80.0-121			0.406	20
Ethylbenzene	0.0500	0.0513	0.0514	103	103	80.0-123			0.195	20
Total Xylene	0.150	0.141	0.142	94.0	94.7	47.0-154			0.707	20
(S) a,a,a-Trifluorotoluene(PID)				*106*	*104*	*79.0-125*				

L1154391-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1154391-14 11/06/19 13:33 • (MS) R3469174-4 11/06/19 13:54 • (MSD) R3469174-5 11/06/19 14:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0649	0.105	0.104	80.2	78.2	1	10.0-160			0.957	21
Toluene	0.0500	0.000664	0.0449	0.0438	88.5	86.3	1	12.0-148			2.48	21
Ethylbenzene	0.0500	0.00157	0.0463	0.0450	89.5	86.9	1	22.0-149			2.85	21
Total Xylene	0.150	0.00622	0.135	0.132	85.9	83.9	1	13.0-155			2.25	21
(S) a,a,a-Trifluorotoluene(PID)					*110*	*110*		*79.0-125*				

Method Blank (MB)

(MB) R3469490-5 11/06/19 14:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	U		0.000412	0.00100
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*103*			*79.0-125*

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

(LCS) R3469490-1 11/06/19 12:59 • (LCSD) R3469490-2 11/06/19 13:21

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	0.0500	0.0525	0.0548	105	110	77.0-122			4.29	20
Toluene	0.0500	0.0523	0.0551	105	110	80.0-121			5.21	20
Ethylbenzene	0.0500	0.0493	0.0505	98.6	101	80.0-123			2.40	20
Total Xylene	0.150	0.146	0.153	97.3	102	47.0-154			4.68	20
(S) a,a,a-Trifluorotoluene(PID)				*103*	*105*	*79.0-125*				

L1154565-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1154565-02 11/06/19 21:52 • (MS) R3469490-6 11/07/19 01:57 • (MSD) R3469490-7 11/07/19 02:19

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	ND	0.0513	0.0380	103	76.0	1	10.0-160		J3	29.8	21
Toluene	0.0500	ND	0.0508	0.0377	102	75.4	1	12.0-148		J3	29.6	21
Ethylbenzene	0.0500	0.000661	0.0484	0.0381	95.5	74.9	1	22.0-149		J3	23.8	21
Total Xylene	0.150	0.00180	0.139	0.109	91.5	71.5	1	13.0-155		J3	24.2	21
(S) a,a,a-Trifluorotoluene(PID)					*103*	*104*		*79.0-125*				

Method Blank (MB)

(MB) R3469798-4 11/07/19 22:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	U		0.000412	0.00100
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*97.9*			*79.0-125*

Laboratory Control Sample (LCS)

(LCS) R3469798-1 11/07/19 20:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0504	101	77.0-122	
Toluene	0.0500	0.0532	106	80.0-121	
Ethylbenzene	0.0500	0.0505	101	80.0-123	
Total Xylene	0.150	0.148	98.7	47.0-154	
(S) a,a,a-Trifluorotoluene(PID)			*98.0*	*79.0-125*	

Method Blank (MB)

(MB) R3466490-3 10/29/19 21:40

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	0.0000124	J	0.00000821	0.000250
2-Methylnaphthalene	0.0000200	J	0.00000902	0.000250
Dibenzofuran	0.00000719	J	0.00000105	0.0000500
(S) Nitrobenzene-d5	*131*			*31.0-160*
(S) 2-Fluorobiphenyl	*114*			*48.0-148*
(S) p-Terphenyl-d14	*138*			*37.0-146*

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

(LCS) R3466490-1 10/29/19 20:58 • (LCSD) R3466490-2 10/29/19 21:19

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	0.00210	0.00207	105	103	67.0-134			1.44	20
Anthracene	0.00200	0.00206	0.00207	103	103	67.0-150			0.484	20
Acenaphthene	0.00200	0.00209	0.00206	105	103	65.0-138			1.45	20
Acenaphthylene	0.00200	0.00231	0.00224	115	112	66.0-140			3.08	20
Benzo(a)anthracene	0.00200	0.00223	0.00214	111	107	61.0-140			4.12	20
Benzo(a)pyrene	0.00200	0.00223	0.00220	111	110	60.0-143			1.35	20
Benzo(b)fluoranthene	0.00200	0.00216	0.00205	108	102	58.0-141			5.23	20
Benzo(g,h,i)perylene	0.00200	0.00222	0.00218	111	109	52.0-153			1.82	20
Benzo(k)fluoranthene	0.00200	0.00224	0.00230	112	115	58.0-148			2.64	20
Chrysene	0.00200	0.00216	0.00214	108	107	64.0-144			0.930	20
Dibenz(a,h)anthracene	0.00200	0.00217	0.00214	108	107	52.0-155			1.39	20

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

(LCS) R3466490-1 10/29/19 20:58 • (LCSD) R3466490-2 10/29/19 21:19

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 %
Fluoranthene	0.00200	0.00231	0.00226	115	113	69.0-153			2.19	20
Fluorene	0.00200	0.00214	0.00210	107	105	64.0-136			1.89	20
Indeno(1,2,3-cd)pyrene	0.00200	0.00224	0.00220	112	110	54.0-153			1.80	20
Naphthalene	0.00200	0.00191	0.00192	95.5	96.0	61.0-137			0.522	20
Phenanthrene	0.00200	0.00214	0.00211	107	105	62.0-137			1.41	20
Pyrene	0.00200	0.00229	0.00222	114	111	60.0-142			3.10	20
1-Methylnaphthalene	0.00200	0.00199	0.00201	99.5	100	66.0-142			1.00	20
2-Methylnaphthalene	0.00200	0.00189	0.00188	94.5	94.0	62.0-136			0.531	20
(S) Nitrobenzene-d5				*121*	*119*	*31.0-160*				
(S) 2-Fluorobiphenyl				*105*	*108*	*48.0-148*				
(S) p-Terphenyl-d14				*125*	*121*	*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.

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.
MQL	Method Quantitation Limit.
ND	Not detected at the Method Quantitation Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
SDL	Sample Detection Limit.
(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 Sample Detection Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.
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.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
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.
J3	The associated batch QC was outside the established quality control range for precision.

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

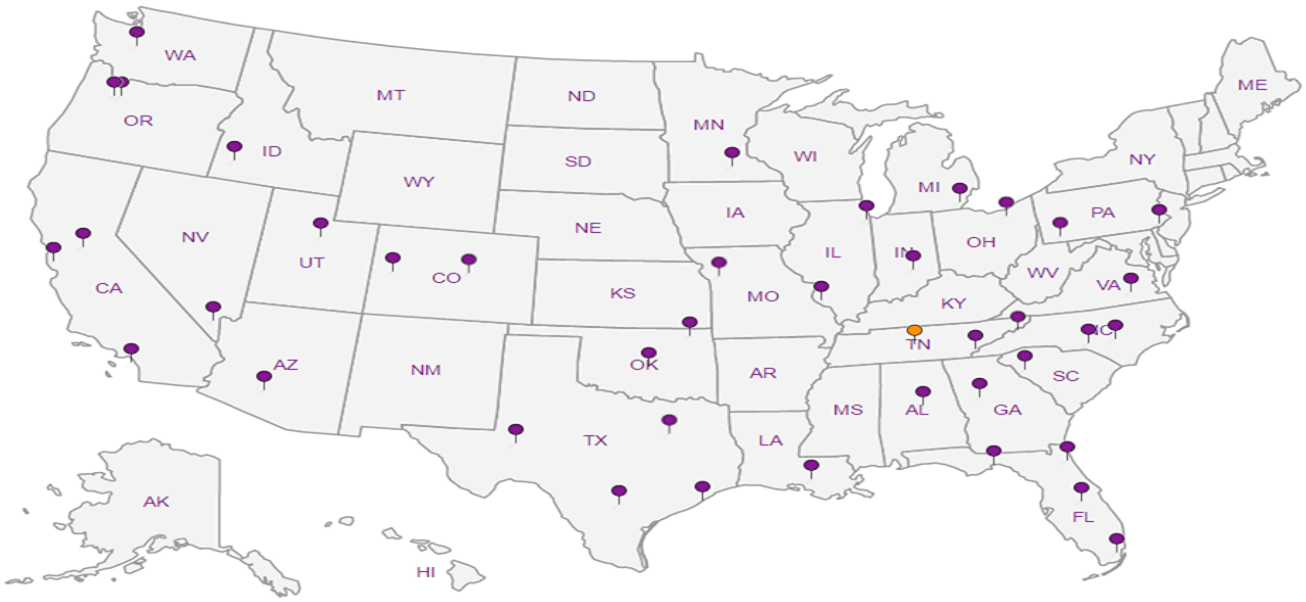
Third Party Federal Accreditations

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, LP - GHD

2135 S Loop 250 W
Midland, TX 79703

Billing Information:
Accounts Payable
505 N. Big Spring, Ste. 600
Midland, TX 79701

Pres Chk

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

Report to: **John Schnable**

Email To: **john.schnable@ghd.com, christopher.knight@ghd.com,**

Project Description: **Darr Angell #4 - Lea County, Ne**

City/State Collected:

Please Circle: PT MT CT ET

Phone: **432-686-0086**
Fax:

Client Project # **074684**

Lab Project # **PLAINSGHD-074684**

SDG # L1154385
E238

Acctnum: **PLAINSGHD**
Template: **T139793**
Prelogin: **P736590**
PM: **134 - Mark W. Beasley**
PB:
Shipped Via:

Collected by (print): Justin Nixon

Site/Facility ID # **SRS#: 2001-10876**

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 X

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 40mlAmb-HCl	PAHSIMLVI 40mlAmb-NoPres-WT								Remarks	Sample # (lab only)
MW-15-102519	G	GW		10-25-19	10:00	3	X										-01
MW-16-102519	↓	GW		10-25-19	10:10	3	X										02
MW-10R-102519	↓	GW		10-25-19	10:25	3	X										03
MW-3R-102519	↓	GW		10-25-19	10:40	3	X										04
MW-4R-102519	↓	GW		10-25-19	11:15	3	X										05
MW-12R-102519	↓	GW		10-25-19	11:25	3	X										06
MW-17-102519	↓	GW		10-25-19	11:35	3	X										07
RW-15-102519	↓	GW		10-25-19	11:50	3	X										08
RW-5R-102519	↓	GW		10-25-19	12:05	3	X										09
RW-14-102519	↓	GW		10-25-19	12:20	3	X										10

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

Remarks: Report to SDLs
Flag estimated concentrations

pH ______ Temp ______
Flow ______ Other ______

Sample Receipt Checklist
COC Seal Present/Intact: X 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: ✓Y _N

Samples returned via:
__ UPS __ FedEx __ Courier ________

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)		
[signature]	10-25-19	14:00	[signature]	Trip Blank Received: Yes / No HCL / MeoH TBR	
[signature]	10-25-19	17:00	Sco A	Temp: °C 2.8+0=2.8	Bottles Received: 41
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Carol Kemp	Date: 10/26/19	Time: 8:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Plains All American, LP - GHD

2135 S Loop 250 W
Midland, TX 79703

Billing Information:
Accounts Payable
505 N. Big Spring, Ste. 600
Midland, TX 79701

Report to: **John Schnable**

Email To: **john.schnable@ghd.com, christopher.knight@ghd.com,**

Project Description: **Darr Angell #4 - Lea County, Ne**

City/State Collected:

Please Circle: PT MT CT ET

Phone: **432-686-0086**
Fax:

Client Project # **074684**

Lab Project # **PLAINSGHD-074684**

Collected by (print): Justin Nixon

Site/Facility ID # **SRS#: 2001-10876**

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

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

SDG # L1154385

Table #

Acctnum: **PLAINSGHD**
Template: **T139793**
Prelogin: **P736590**
PM: **134 - Mark W. Beasley**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 40mlAmb-HCl	PAHSIMLVI 40mlAmb-NoPres-WT	Remarks	Sample # (lab only)
Dup-1-102519	G	GW		10-25-19	N/A	3	X			-11
MW-8R-102519	G	GW		10-25-19	12:35	5	X	X		12
Dup-2-102519	G	GW		10-25-19	N/A	3	X			13
Trip Blank	G	GW		10-25-19	N/A	1	X			14
		GW								
		GW								
		GW								
TRIP BLANK		GW								
		GW								
		GW								

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

Remarks: Report to SDLS
Flag estimated Concentrations

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: X NP __ Y __ N
COC Signed/Accurate: X Y __ N
Bottles arrive intact: X Y __ N
Correct bottles used: X Y __ N
Sufficient volume sent: X Y __ N
If Applicable
VOA Zero Headspace: X Y __ N
Preservation Correct/Checked: __ Y __ N
RAD Screen <0.5 mR/hr: X 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
	10-25-19	14:00			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: ~~A2B~~ °C Bottles Received:	
	10.25.19	17:00		2.8+0=2.8 4J	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK
			Carol Kemp	10/26/19 8:10	

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

John Schnable
john.schnable@ghd.com
432.940.2184

Ryan Livingston
ryan.livingston@ghd.com
432.488.9980

www.ghd.com