2019 Annual Groundwater Monitoring Report

Plains All American Pipeline, L.P.
DCP Plant to Lea Station 6-Inch Section 31
Plains All American Pipeline, L.P. SRS No. 2009-084
Lea County, New Mexico
NMOCD Reference No. 1RP-2166

Terracon Project No. AR197009
February 12, 2020

Prepared for:

Plains All American Pipeline, L.P.
10 Desta Drive, Suite 550E
Midland, Texas 79705

Prepared by:

Terracon Consultants, Inc.
Lubbock, Texas

March 17, 2020

Plains All American Pipeline, LP
10 Desta Drive, Suite 550E
Midland, Texas 79705

Attn: Mrs. Camille Bryant
Telephone: (432) 221-7924
Email: CJBryant@paalp.com

Re: 2019 Annual Groundwater Monitoring Report
DCP Plant to Lea Station 6-Inch Section 31
U/L "K", Sec. 31, T20S, R37E
Lea County, New Mexico
NMOCD Reference No. 1RP – 2166
Plains All American Pipeline, L.P. SRS N0. 2009-084
Terracon Project No. AR197009

Dear Mrs. Bryant:

Terracon is pleased to submit one electronic copy and one CD attached to the cover page of the 2019 Annual Groundwater Monitoring Report for the above-referenced site.

We appreciate the opportunity to perform these services for Plains All American Pipeline, L.P. Please contact either of the undersigned at (806) 300-0140 if you have questions regarding the information provided in the report.

Sincerely,
Terracon

Prepared by:

Paige Gaona
Project Manager
Lubbock

Reviewed by:

Erin Loyd, P.G.
Principal
Office Manager – Lubbock

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1.0 INTRODUCTION

1.1 Site Description

The legal description of the DCP Plant to Lea Station 6-Inch Section 31 release site is Unit Letter "K" (NE/SW), Section 31, Township 20 South, Range 37 East, in Lea County, New Mexico. The property affected by the release is owned by The State of New Mexico and administered by the New Mexico State Land Office (NMSLO). The geographic coordinates of the release site are 32.527330° North latitude and 103.29060° West longitude. A "Topographic Map" depicting the site's location is provided as Exhibit 1 in Appendix A.

Site Name	DCP Plant to Lea Station 6-Inch Section 31
Site Location	Latitude 32.527330° North, Longitude 103.29060° West
General Site Description	The site consists of six groundwater monitoring wells located in, and adjacent to, a pipeline right-of-way surrounded by native pasture land.
Landowner	State of New Mexico

1.2 Background Information

Based on information provided by the client, on April 2, 2009, Plains All American Pipeline, L.P. (Plains) discovered a crude oil release from a 6-inch steel pipeline. During initial response activities, Plains installed a temporary clamp on the pipeline to mitigate the release. The crude oil release resulted in a surface stain measuring approximately 6 feet (ft.) in width by 8 ft. in length. Plains initially classified the release as "non-reportable". Upon further investigation, Plains reclassified the release to "reportable" status and notified the New Mexico Oil Conservation Division (NMOCD) Hobbs District 1 Office and submitted a *Release Notification and Corrective Action* (Form C-141) on April 29, 2009. The cause of the release was attributed to external corrosion of the pipeline. The C-141 indicated approximately 20 barrels (bbls) of crude oil were released from the pipeline, with no recovery.

On April 15, 2009, soil boring (SB-1) was advanced to a maximum depth of approximately 10 ft., west of the release point to evaluate the vertical extent of soil impact. During advancement of the soil boring, groundwater was encountered at approximately 77 ft. below ground surface (bgs). Temporary casing was installed in the boring to obtain a preliminary groundwater sample. On April 16, 2009, a groundwater sample (SB-1) was collected from the temporary casing and submitted for laboratory analysis of total dissolved solids (TDS), chlorides, and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Following the collection of the groundwater sample, the temporary casing was removed from the soil boring and the soil boring was plugged with cement

and bentonite, as required by the New Mexico Office of the State Engineer (NMOSE). Laboratory analytical results indicated a benzene concentration of 1.915 milligrams per liter (mg/L), a BTEX concentration of 4.7711 mg/L, a chloride concentration of 54.6 mg/L, and a TDS concentration of 788 mg/L. Based on the analytical results of the submitted groundwater sample, Plains notified NMOCD representatives in the Hobbs District Office and the Santa Fe Office of the laboratory-confirmed impact to groundwater at the site.

On June 2, 2009, subsequent excavation of crude oil impacted soil began at the site. Approximately 1,400 cubic yards (cy) were excavated and stockpiled on a plastic liner to mitigate the potential leaching of the contaminants into the vadose zone. The final dimensions of the excavation were approximately 77 ft. in width, approximately 80 ft. in length, and 15 ft. in depth.

On September 21 through September 23, 2009, four monitoring wells (MW-1, MW-2, MW-3, and MW-4), were drilled, completed, and developed to further evaluate the status of the groundwater at the site with NMOCD approval. Soil samples were collected at 5-foot drilling intervals and field screened using a photo-ionization detector (PID). Selected soil samples were submitted to the laboratory for determination of concentrations of BTEX and total petroleum hydrocarbons (TPH) using EPA Methods SW-846 8021b and SW-846 8015M, respectively.

Monitoring well MW-1 was installed on the floor of the excavation, at approximately 15 ft. bgs, to a total depth of approximately 86 ft. bgs. Soil samples collected at 25 ft. bgs, 35 ft. bgs, 45 ft. bgs, 55 ft. bgs, 65 ft. bgs, and 75 ft. bgs were submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations were less than the appropriate laboratory method detection limit (MDL) for all of the submitted soil samples. BTEX concentrations ranged from 0.0359 milligrams per kilogram (mg/kg) for the soil sample collected at 25 ft. bgs to 13.444 mg/kg for the soil sample collected at 55 ft. bgs. The TPH concentrations ranged from 286 mg/kg for the soil sample collected at 25 ft. bgs to 1,538 mg/kg for the soil sample collected at 55 ft. bgs.

Monitoring well MW-2 is located approximately 75 ft. northwest (up-gradient) of the release point. The well was installed to a total depth of approximately 90 ft. bgs. Soil samples collected at 15 ft. bgs, 30 ft. bgs, 45 ft. bgs, 60 ft. bgs, and 75 ft. bgs were submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL for all of the submitted soil samples.

Monitoring well MW-3 is located approximately 75 ft. to the southwest (cross-gradient) of the release point. The monitoring well was installed to a total depth of approximately 90 ft. bgs. Soil samples collected at 15 ft. bgs, 30 ft. bgs, 45 ft. bgs, and 60 ft. bgs were submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from less than the appropriate laboratory MDL for the soil samples collected at 15 ft. bgs, 30 ft. bgs, 45 ft. bgs, and 60 ft. bgs to 0.0025 mg/kg for the soil sample collected at 60 ft. bgs. Analytical results indicated BTEX concentrations ranged from less than the appropriate laboratory MDL for the soil samples collected at 15 ft. bgs, 30 ft. bgs, and 45 ft. bgs to 0.0052 mg/kg for the soil

sample collected at 60 ft. bgs. TPH concentrations were less than the appropriate laboratory MDL for all of the submitted soil samples.
Monitoring well MW-4 is located approximately 75 ft. to the southeast (down-gradient) of the release point. The monitoring well was installed to a total depth of approximately 89 ft. bgs. Soil samples collected at 15 ft. bgs, 30 ft. bgs, 45 ft. bgs, and 60 ft. bgs were submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL for all of the submitted soil samples.

On January 25, 2011, monitoring well MW-5 was installed to further monitor the down-gradient migration of the phase separated hydrocarbons (PSH) plume. Monitoring well MW-5 is located approximately 60 ft. to the southeast (down-gradient) of the release point. The well was installed to a total depth of approximately 95 ft. bgs. Soil samples collected at 15 ft. bgs, 25 ft. bgs, 45 ft. bgs, 65 ft. bgs, and 75 ft. bgs were submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL for all of the submitted soil samples. PSH was not observed in monitoring well MW-5.

On September 11, 2013, monitoring well MW-6 was installed to further monitor the down-gradient migration of the PSH plume. Monitoring well MW-6 is located approximately 95 ft. to the east (cross-gradient) of the release point. The well was installed to a total depth of approximately 100 ft. bgs. Soil samples collected at 5 ft. bgs, 40 ft. bgs, and 75 ft. bgs were submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL for all of the submitted soil samples. PSH was not observed in monitoring well MW-6.

On October 18, 2016, Terracon assumed project management responsibilities and oversight of groundwater monitoring activities at the DCP Plant to Lea Station 6-Inch Section 31 project site. There are a total of six monitoring wells (MW-1 through MW-6) located at the site. Monitoring wells MW-2 through MW-6 are gauged and sampled on a quarterly schedule and monitoring well MW-1 is currently not sampled due to the presence of PSH. A “Site Diagram” depicting monitoring well locations is provided as Exhibit 2 in Appendix A.

1.3 Scope of Work

Terracon’s scope of work includes project management responsibilities, oversight of groundwater monitoring activities, and preparation of an *Annual Groundwater Monitoring Report* in accordance with the NMOCD letter, dated May 1998, requiring submittal of and *Annual Groundwater Monitoring* Report by April 1st of each year. Groundwater monitoring activities include conducting quarterly events at the site. Quarterly monitoring events include measuring the static water levels in the monitoring wells, checking for the presence of PSH, and the collection of groundwater samples from each of the on-site wells not exhibiting a measurable thickness of PSH. In

accordance with the approved scope of work, Terracon conducted the quarterly groundwater monitoring events on February 21, May 23, September 6, and November 12, 2019.

2.0 GROUNDWATER REMEDIATION PROGRAM

2.1 Groundwater Monitoring

Quarterly groundwater monitoring events were conducted on February 21 (1Q2019), May 23 (2Q2019), September 6 (3Q2019), and November 12, 2019 (4Q2019). Quarterly groundwater monitoring events included measuring the static water level in the on-site monitoring wells, checking for the presence of PSH, purging, and the collection of groundwater samples from each of the on-site wells not exhibiting a measurable thickness of PSH.

Groundwater samples were collected utilizing low-flow sampling equipment, including a bladder pump and multi-parameter meter. Prior to sample collection, readings on the multi-parameter meter were recorded for a minimum of four cycles of five minutes each. Each collected sample was placed in laboratory-supplied containers appropriate to the analyses requested and placed on ice in a cooler. The sample coolers and completed chain-of-custody forms were delivered to Xenco Laboratories in Lubbock, Texas for analysis of benzene, toluene, ethylbenzene, and total (BTEX). Purged water was placed into a polystyrene aboveground storage tank (AST) and disposed of at an NMOCD-approved disposal facility.

Based on sampling criteria provided by the NMOCD, groundwater samples collected from the on-site monitor wells were not subject to analysis of polynuclear aromatic hydrocarbons (PAHs). PAH sample requirements were met, as two years of sampling was performed on monitoring well MW-2 through MW-5. PAH sampling will be completed on monitoring well MW-1 once PSH is gone. Historical PAH data can be bound in Table 5 in Appendix B.

Groundwater elevation gauging data collected during the respective quarterly sampling events were used to construct groundwater gradient maps, which are included as Exhibits 3 through 6 in Appendix A. Groundwater flow direction was relatively consistent during each quarter of 2019 in the southeasterly direction. Groundwater elevation and PSH thickness data is summarized in Table 1 in Appendix B.

3.0 LABORATORY ANALYTICAL METHODS

The groundwater samples collected from the on-site monitoring wells were analyzed for BTEX using EPA SW-846 Method 8021B. Laboratory results from the analysis of groundwater samples collected from the monitor wells are summarized in Table 2 in Appendix B and presented on Exhibits 7 through 10 in Appendix A. Copies of the certified laboratory reports and chain-of-custody documentation are provided in Appendix C.

4.0 GROUNDWATER DATA EVALUATION

4.1 Groundwater Sample Results

Laboratory analytical results from groundwater samples collected during each quarterly monitoring event were compared to NMOCD regulatory standards based on New Mexico Water Quality Control Commission (NMWQCC) groundwater standards found in Section 20.6.2.3103 of the New Mexico Administrative Code (NMAC).

4.1.1 Monitoring Well MW-1

- Monitoring well MW-1 was not sampled due to the presence of PSH. PSH thicknesses of 0.66 ft (1Q2019), 0.16 ft. (2Q19), 0.05 ft (4Q2019) were observed during the quarterly monitoring events.

4.1.2 Monitoring Wells MW-2, MW-3, MW-4, MW-5, and MW-6

- Laboratory analytical results indicated BTEX concentrations were below the respective laboratory sample detection limit (SDL) during each quarterly monitoring event.

5.0 CORRECTIVE ACTION

5.1 Product Recovery

An estimated 0.258 gallons (0.006 bbls) of PSH were recovered from monitoring well MW-1 by manual recovery in 2019. During the last recovery event, the PSH thickness in monitoring well MW-1 measured 0.10 ft. An estimated 23.5 gallons (0.560 bbls) of hydrocarbon impacted groundwater were recovered manually from monitoring well MW-1 for 2019. Since recovery operations began in 2009, an estimated 5775.0 gallons (137.5 bbls) of PSH have been manually recovered from monitoring well MW-1.

In September 2012, a Mobile Dual-Phase Extraction (MDPE) unit was installed on monitoring well MW-1 by Talon LPE. The MDPE unit was shared with the nearby release site known as DCP Plant to Lea Station 6-Inch #2 (NMOCD Reference #1RP-2136), and the location of the unit was alternated periodically until a Soil Vapor Extraction (SVE) unit was placed on the previously mentioned site on July 19, 2017.

During the 2019 reporting period, an estimated 7.05 gallons (0.17 bbls) of PSH in the vapor phase and an estimated 613.84 gallons (14.62 bbls) of PSH in the liquid phase were recovered by the MDPE unit, for a total of an estimated 620.85 equivalent gallons (14.78 bbls) of PSH. To date, an estimated 14,983.85 equivalent gallons (356.76 bbls) of PSH have been recovered from monitoring well MW-1 by MDPE. Recovered fluids are disposed at an NMOCD-approved disposal

facility. Quarterly MDPE unit System Operation Data & Mass Recovery Calculations, provided by Talon LPE, are summarized in Tables 3a, 3b, 3c, and 3d in Appendix B.

6.0 SUMMARY OF FINDINGS

The findings of the 2019 Quarterly groundwater monitoring activities are as follows:

- Currently, there are six groundwater monitoring wells (MW-1 through MW-6) located at the site.
- Monitoring well MW-1 was not sampled during each quarterly monitoring event due to the presence of PSH.
- Monitoring well MW-2 through MW-6 were gauged, purged, and sampled during each quarterly monitoring event.
- Benzene, toluene, ethylbenzene and total xylene concentrations were below the respective laboratory sample detection limits in groundwater samples collected from monitoring wells MW-2, MW-3, MW-4, MW-5, and MW-6 during each quarterly monitoring event.
- The groundwater flow direction was relatively consistent to the southeast for each quarterly event. The groundwater contour interval was 0.10 ft. with a gradient of 0.002 ft./ft.
- An estimated 0.258 gallons of PSH was recovered manually from monitoring well MW-1.
- For 2019, the MDPE unit recovered an estimated total of 620.85 equivalent of gallons (14.78 bbls) of vapor and liquid phase PSH from monitoring well MW-1.
- Since 2012, the MDPE unit has recovered an estimated cumulative total of 14,983.85 equivalent gallons (356.76 bbls) of PSH.

7.0 ANTICIPATED ACTIONS

- MDPE unit will be removed and SVE unit installed in early 2020 to aid in PSH recovery.
- Manual PSH recovery, if applicable, will continue on monitoring well MW-1.
- Monitoring well MW-2 through MW-6 will continue to be gauged, purged, and sampled quarterly for the presence of PSH and BTEX in 2020.
- An *Annual Groundwater Monitoring Report* will be prepared detailing field activities and the results of groundwater monitoring activities conducted during the 2020 reporting period.

8.0 DISTRIBUTION

Copy 1: Bradford Billings, Hydrologist, E Spec. A.
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cjbryant@paalp.com

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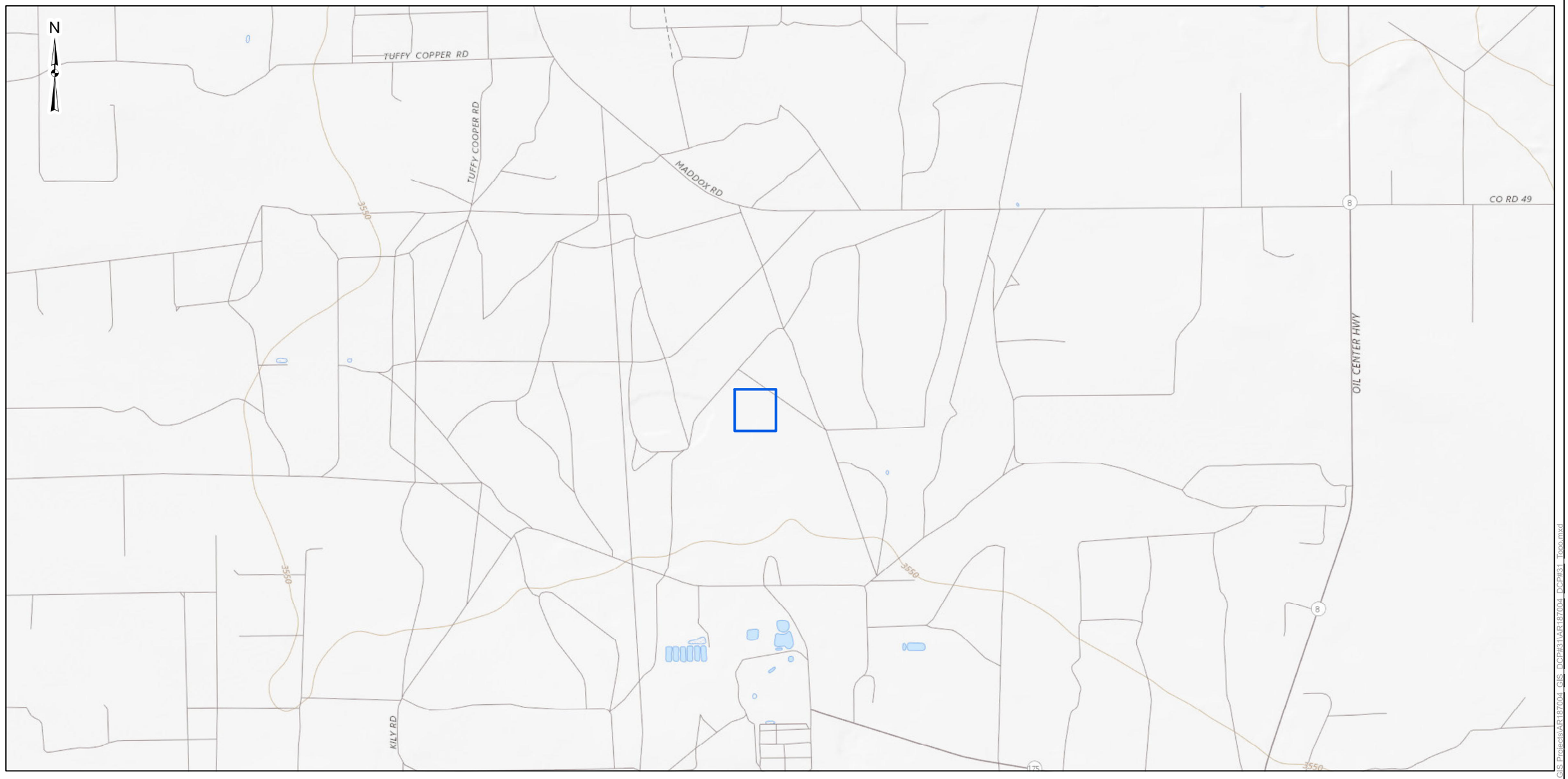
333 Clay Street, Suite 1600
Houston, Texas 77002
jpdann@paalp.c

APPENDIX A

Exhibit 1 – Topographic Map
Exhibit 2 – Site Diagram
Exhibit 3 – 1Q19 Groundwater Gradient Map (02/21/19)
Exhibit 4 – 2Q19 Groundwater Gradient Map (05/23/19)
Exhibit 5 – 3Q19 Groundwater Gradient Map (09/06/19)
Exhibit 6 – 4Q19 Groundwater Gradient Map (11/12/19)
Exhibit 7 – 1Q19 Groundwater Contaminant Concentration Map (02/21/19)
Exhibit 8 – 2Q19 Groundwater Contaminant Concentration Map (05/23/19)
Exhibit 9 – 3Q19 Groundwater Contaminant Concentration Map (09/06/19)
Exhibit 10 – 4Q19 Groundwater Contaminant Concentration Map (11/12/19)



Groundwater Monitoring Site

Site

Notes:
-Exhibit is for general location only, is not indended for construction purposes, and should not be used separately from original report.

0 1,500 3,000 6,000 Feet

Fractional Scale: 1:20,338

DATA SOURCES:
USGS The National Map

Project No.:	AR197009
Date:	Mar 2019
Drawn By:	SW
Reviewed By:	ELL

Terracon
5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

Topographic Map

DCP Plant to Lea Station 6" Sec. 31
Plains SRS # 2009-084
NMOCD Ref. # 1RP-2166
Plains Pipeline, LP
Lea County, New Mexico
GPS: 32.527330°, -103.290600°

Exhibit

1

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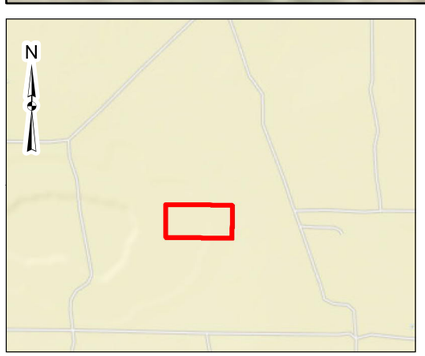

Groundwater Monitoring Site

Recovery Well w/ Mobile Dual Phase Extraction (MDPE) Unit

Monitoring Well (MW)

Notes:
-Exhibit is for general location only, is not indended for construction purposes, and should not be used separately from original report.

0 75 150 Feet

Fractional Scale: 1:550

DATA SOURCES:
Bing Maps - Aerial Imagery, World Street Map

Project No.:	AR197009
Date:	Mar 2019
Drawn By:	SW
Reviewed By:	ELL

Terracon
5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

Site Diagram

DCP Plant to Lea Station 6" Sec. 31
Plains SRS # 2009-084
NMOCD Ref. # 1RP-2166
Plains Pipeline, LP
Lea County, New Mexico
GPS: 32.527330°, -103.290600°

Exhibit

2

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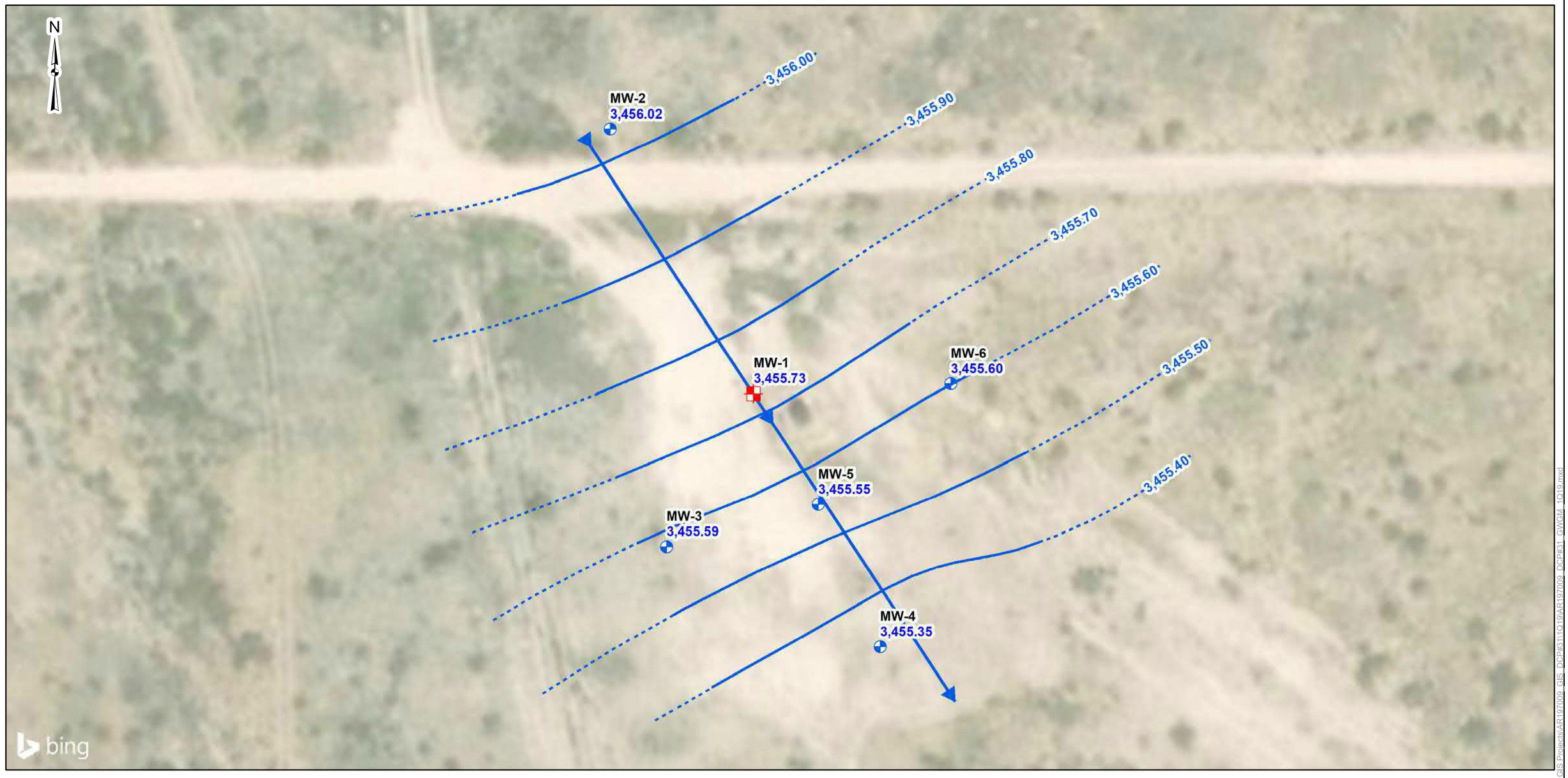

Groundwater Monitoring Site

- Recovery Well w/ Mobile Dual Phase Extraction (MDPE) Unit
- Monitoring Well (MW)
- Groundwater Contours
- Inferred Groundwater Contour
- Groundwater Flow Direction

Notes:
- All groundwater elevations are measured in feet above mean sea level.
- Groundwater contours were interpolated with ArcGIS's kriging algorithm.
- Groundwater contour interval: 0.10 ft.

0 75 150 Feet

Fractional Scale: 1:550

DATA SOURCES:
Bing Maps - Aerial Imagery, World Street Map

Project No.:	AR197009
Date:	Apr 2019
Drawn By:	SW
Reviewed By:	ELL

Terracon
5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

1Q19 Groundwater Gradient Map (02/21/19)

DCP Plant to Lea Station 6" Sec. 31
Plains SRS # 2009-084
NMOCD Ref. # 1RP-2166
Plains Pipeline, LP
Lea County, New Mexico
GPS: 32.527330°, -103.290600°

Exhibit

3

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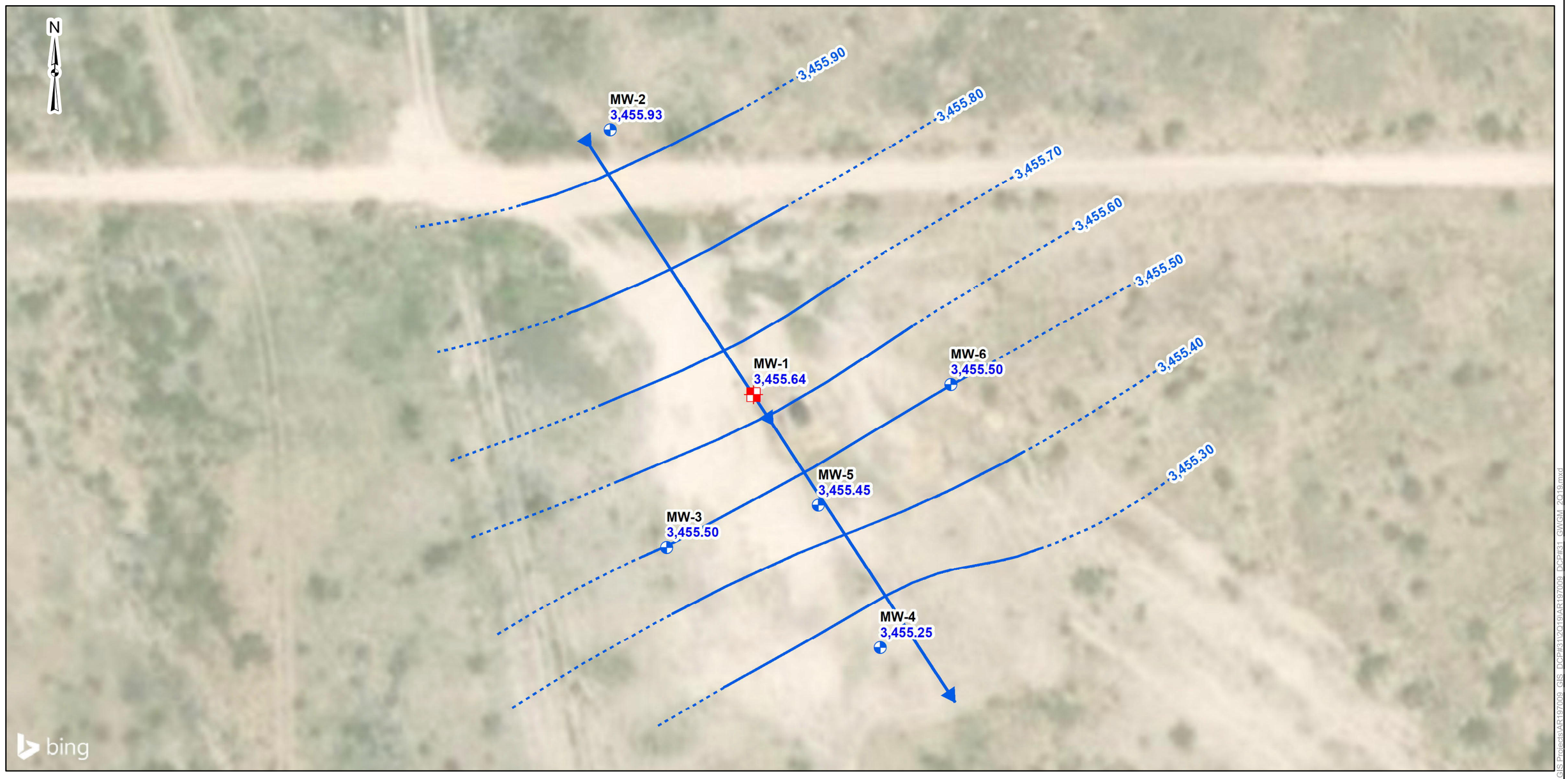

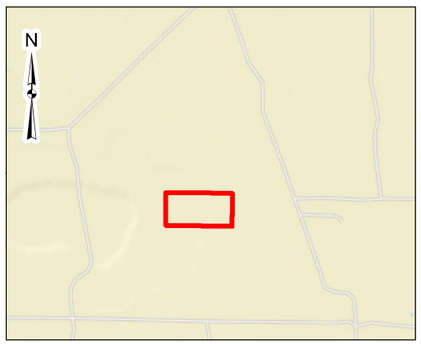

Groundwater Monitoring Site

- Recovery Well w/ Mobile Dual Phase Extraction (MDPE) Unit
- Monitoring Well (MW)
- Groundwater Contours
- Inferred Groundwater Contour
- Groundwater Flow Direction

Notes:
- All groundwater elevations are measured in feet above mean sea level.
- Groundwater contours were interpolated with ArcGIS's kriging algorithm.
- Groundwater contour interval: 0.10 ft.
- Groundwater gradient: 0.002 ft/ft

0 75 150 Feet

Fractional Scale: 1:550

DATA SOURCES:
Bing Maps - Aerial Imagery, World Street Map

Project No.:	AR197009
Date:	Jul 2019
Drawn By:	SW
Reviewed By:	ELL

Terracon
5847 50th St. Lubbock, TX 79424
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2Q19 Groundwater Gradient Map (05/23/19)

DCP Plant to Lea Station 6" Sec. 31
Plains SRS # 2009-084
NMOCD Ref. # 1RP-2166
Plains Pipeline, LP
Unit J, Sec. 31, T20S, R37E
Lea County, New Mexico
GPS: 32.527330°, -103.290600°

Exhibit

4

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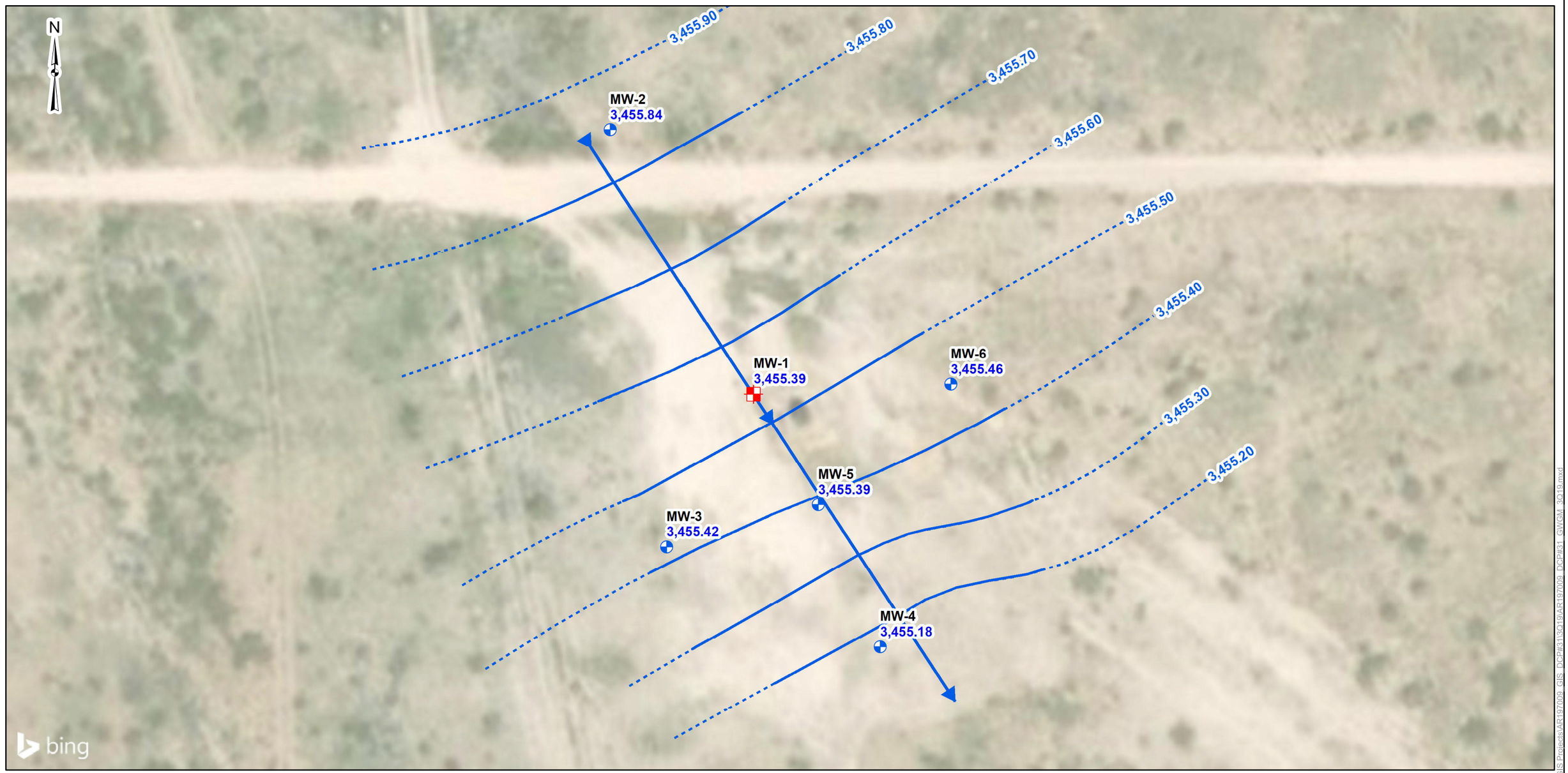

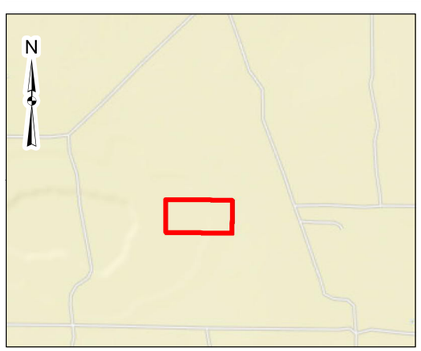

Groundwater Monitoring Site

- Recovery Well w/ Mobile Dual Phase Extraction (MDPE) Unit
- Monitoring Well (MW)
- Groundwater Contours
- Inferred Groundwater Contour
- Groundwater Flow Direction

Notes:
- All groundwater elevations are measured in feet above mean sea level.
- Groundwater contours were interpolated with ArcGIS's kriging algorithm.
- Groundwater contour interval: 0.10 ft.
- Groundwater gradient: 0.002 ft/ft
- MW-1 not honored in contouring interpolation.

Feet
0 75 150

Fractional Scale: 1:550

DATA SOURCES:
Bing Maps - Aerial Imagery, World Street Map

Project No.:	AR197009
Date:	Sep 2019
Drawn By:	SW
Reviewed By:	ELL

Terracon
5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

3Q19 Groundwater Gradient Map (09/06/19)

DCP Plant to Lea Station 6" Sec. 31
Plains SRS # 2009-084
NMOCD Ref. # 1RP-2166
Plains Pipeline, LP
U/L "K", Sec. 31, T20S, R37E
Lea County, New Mexico
GPS: 32.527330°, -103.290600°

Exhibit

5

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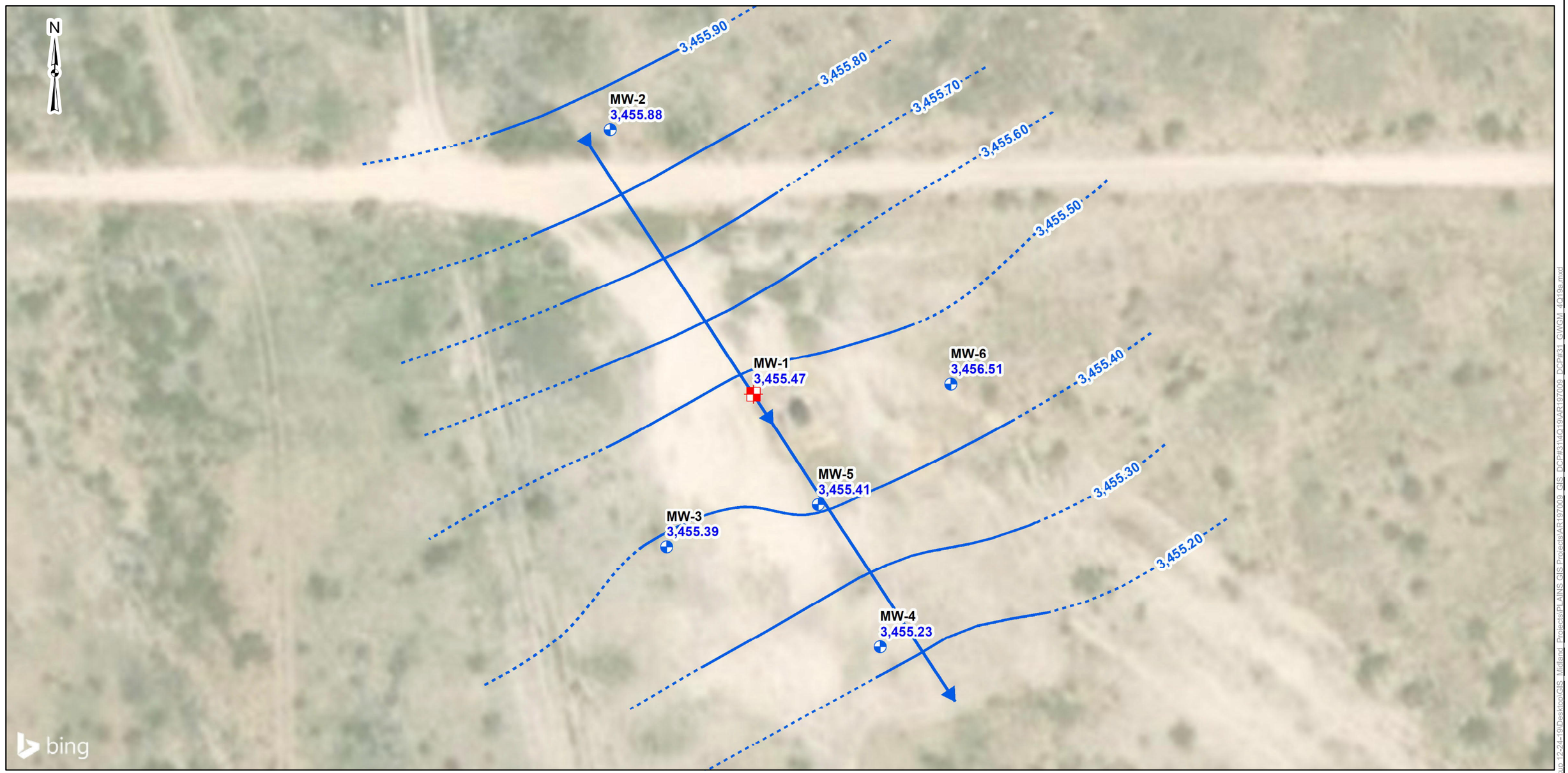
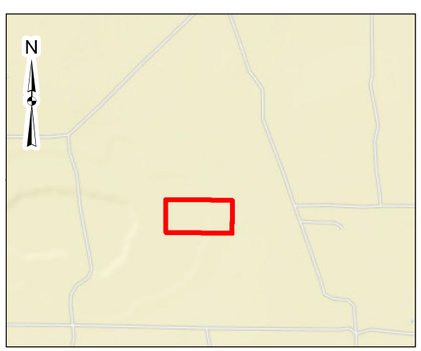




Groundwater Monitoring Site

- Recovery Well w/ Mobile Dual Phase Extraction (MDPE) Unit
- Monitoring Well (MW)
- Groundwater Contours
- Inferred Groundwater Contour
- Groundwater Flow Direction

Notes:
- All groundwater elevations are measured in feet above mean sea level.
- Groundwater contours were interpolated with ArcGIS's kriging algorithm.
- Groundwater contour interval: 0.10 ft.
- Groundwater gradient: 0.002 ft/ft
- MW-1 not honored in contouring interpolation.

0 75 150 Feet

Fractional Scale: 1:550

DATA SOURCES:
Bing Maps - Aerial Imagery, World Street Map

Project No.:	AR197009
Date:	Jan 2020
Drawn By:	SW
Reviewed By:	ELL

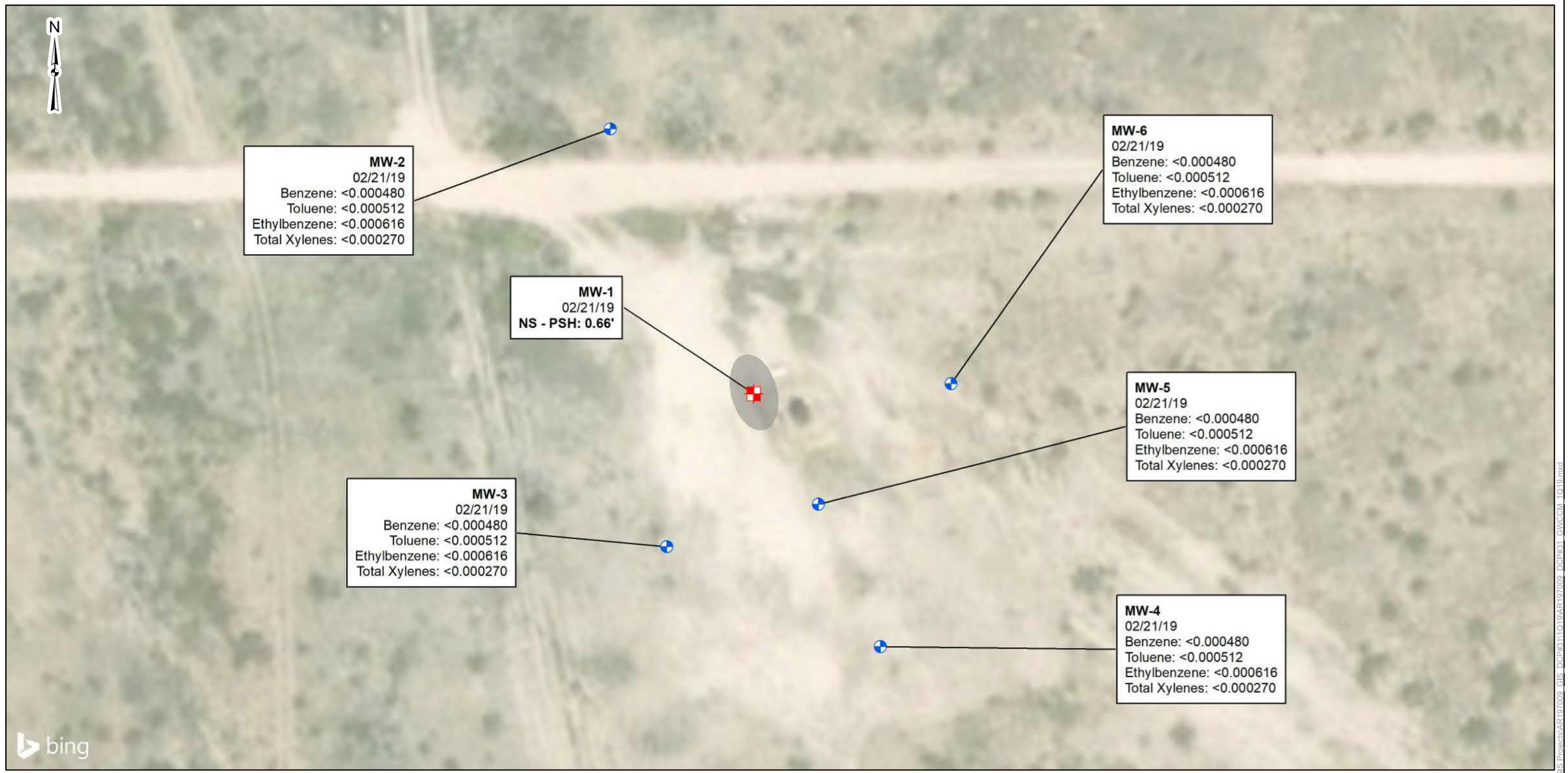
Terracon
5827 50th St. Suite 1 Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

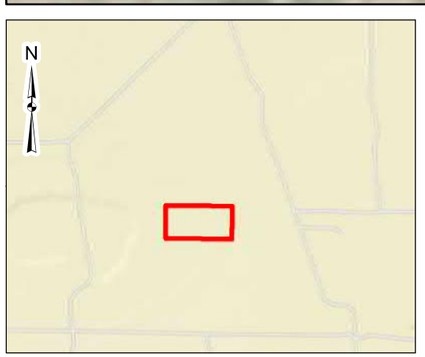
4Q19 Groundwater Gradient Map (11/12/19)

DCP Plant to Lea Station 6" Sec. 31
Plains SRS # 2009-084
NMOCD Ref. # 1RP-2166
Plains Pipeline, LP
U/L "K", Sec. 31, T20S, R37E
Lea County, New Mexico
GPS: 32.527330°, -103.290600°

Exhibit

6





Groundwater Monitoring Site

Recovery Well w/ Mobile Dual Phase Extraction (MDPE) Unit

Monitoring Well (MW)

Free Phase Plume: Outlines Wells w/ Phase Seperated Hydrocarbons (PSH)

New Mexico - Oil Conservation Division (NMOCD) Criteria:
B (Benzene) - 0.01 mg/L
T (Toluene) - 0.75 mg/L
E (Ethylbenzene) - 0.75 mg/L
X (Total Xylenes) - 0.62 mg/L
J: The identification of the analyte is acceptable; the reported value is an estimate.
NS: Monitoring well was not sampled due to presence of PSH.
Bold concentrations indicate a concentration above the laboratory sample detection limit (SDL).
Highlighted concentrations indicate a concentration exceeding the NMOCD Recommended Remediation Action Level (RRAL) Criteria. PSH thicknesses are measured in hundreths of a foot.

0 75 150 Feet

Fractional Scale: 1:550

DATA SOURCES:
Bing Maps - Aerial Imagery, World Street Map

Project No.:	AR197009
Date:	Apr 2019
Drawn By:	SW
Reviewed By:	ELL

Terracon
5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

1Q19 Groundwater Contaminant Concentration Map (02/21/19)

DCP Plant to Lea Station 6" Sec. 31
Plains SRS # 2009-084
NMOCD Ref. # 1RP-2166
Plains Pipeline, LP
Lea County, New Mexico
GPS: 32.527330°, -103.290600°

Exhibit

7

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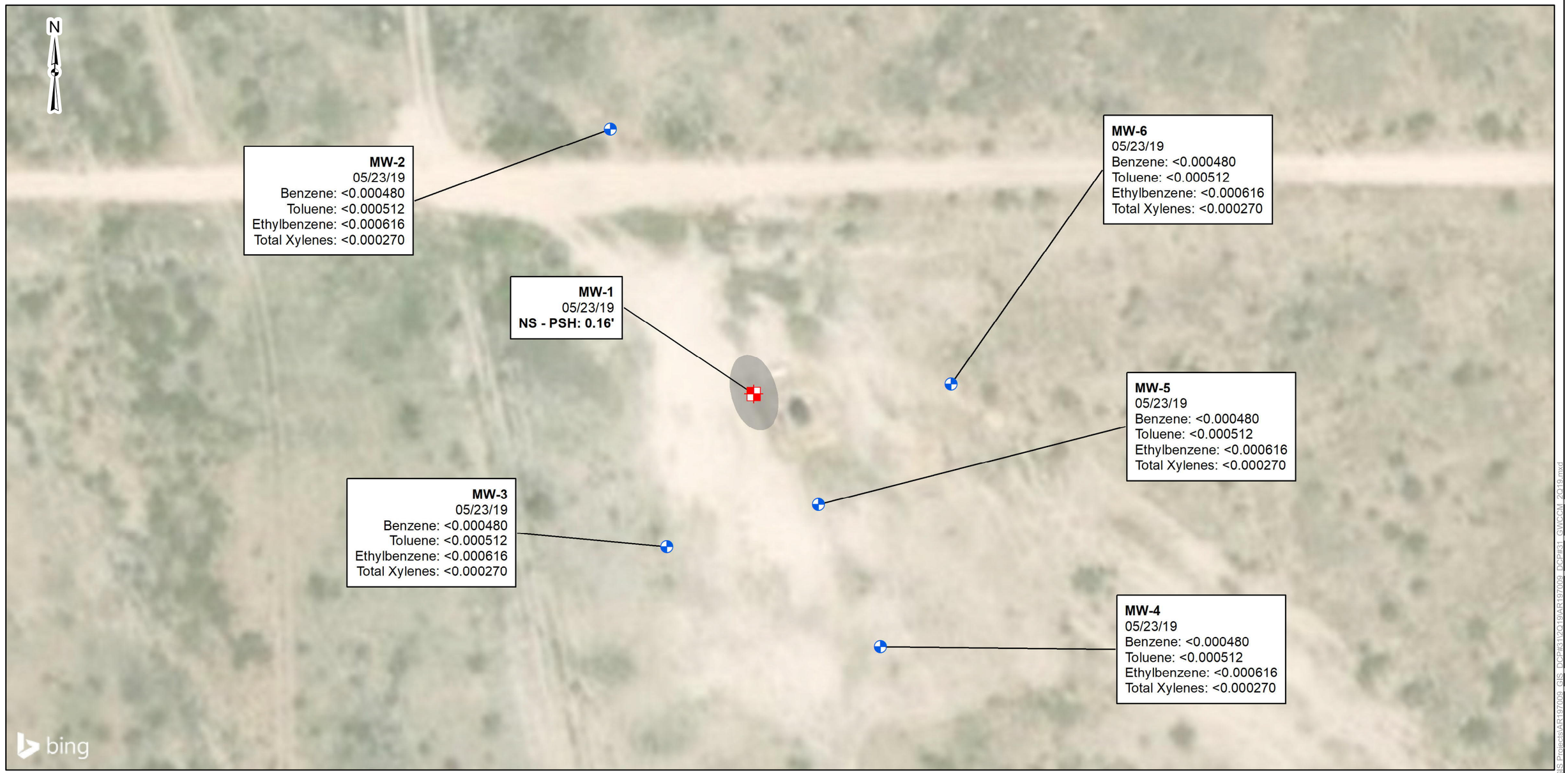

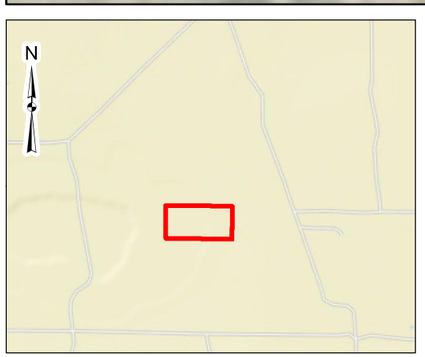

Groundwater Monitoring Site

Recovery Well w/ Mobile Dual Phase Extraction (MDPE) Unit

Monitoring Well (MW)

Free Phase Plume: Outlines Wells w/ Phase Seperated Hydrocarbons (PSH)

New Mexico - Oil Conservation Division (NMOCD) Criteria:
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E (Ethylbenzene) - 0.75 mg/L
X (Total Xylenes) - 0.62 mg/L
J: The identification of the analyte is acceptable; the reported value is an estimate.
NS: Monitoring well was not sampled due to presence of PSH.
Bold concentrations indicate a concentration above the laboratory sample detection limit (SDL).
Highlighted concentrations indicate a concentration exceeding the NMOCD Recommended Remediation Action Level (RRAL) Criteria. PSH thicknesses are measured in tenths of a foot.

0 75 150 Feet

Fractional Scale: 1:550

DATA SOURCES:
Bing Maps - Aerial Imagery, World Street Map

Project No.:	AR197009
Date:	Jun 2019
Drawn By:	SW
Reviewed By:	ELL

Terracon
5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

2Q19 Groundwater Contaminant Concentration Map (05/23/19)

DCP Plant to Lea Station 6" Sec. 31
Plains SRS # 2009-084
NMOCD Ref. # 1RP-2166
Plains Pipeline, LP
U/L "K", Sec. 31, T20S, R37E
Lea County, New Mexico
GPS: 32.527330°, -103.290600°

Exhibit

8

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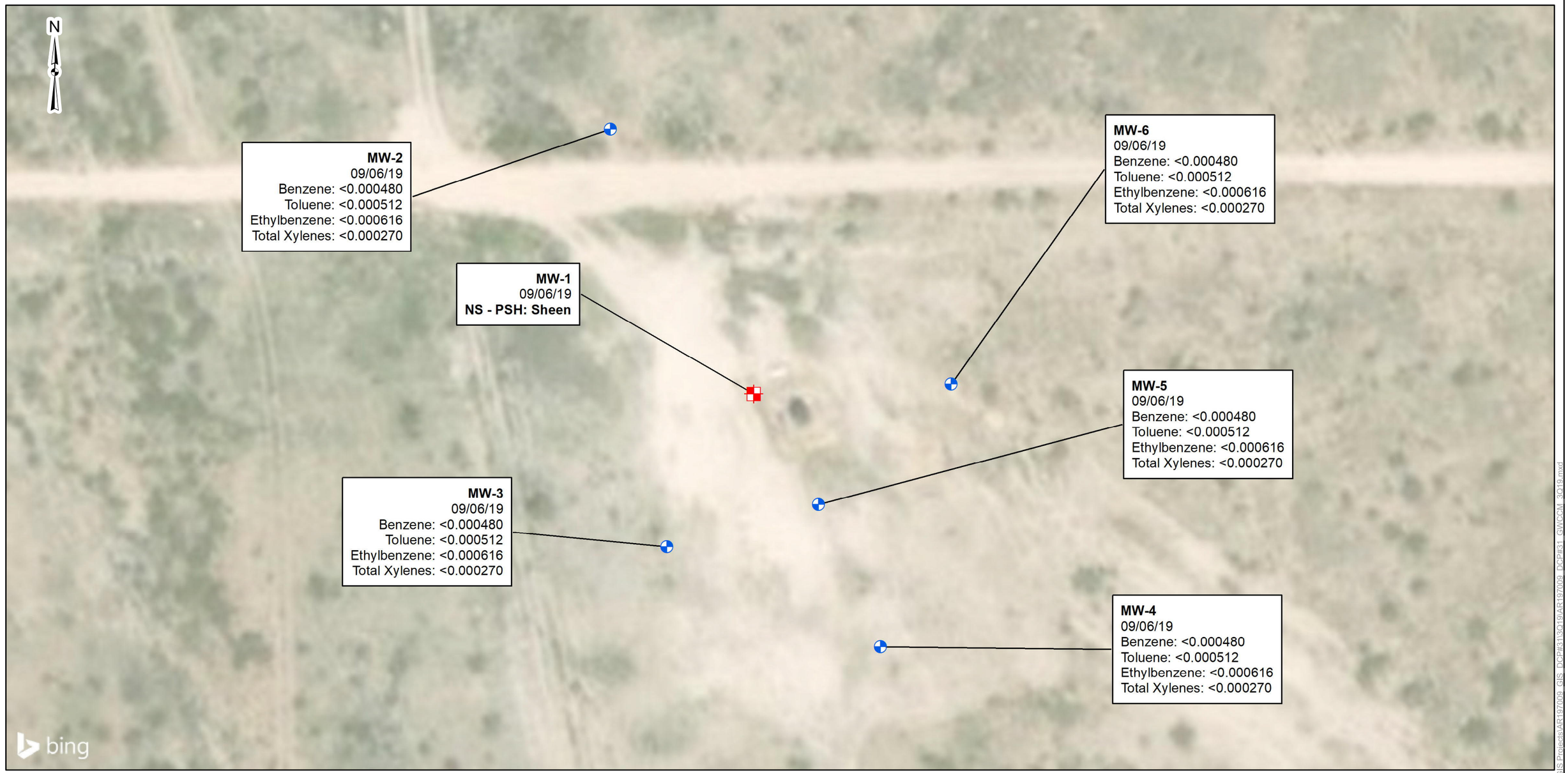

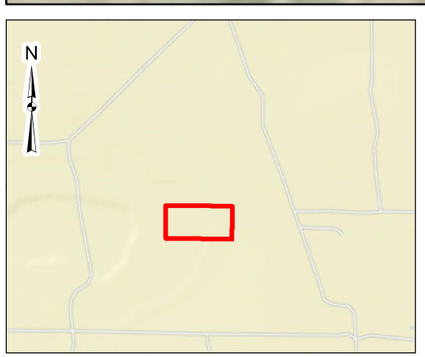

Groundwater Monitoring Site

Recovery Well w/ Mobile Dual Phase Extraction (MDPE) Unit

Monitoring Well (MW)

New Mexico - Oil Conservation Division (NMOCD) Criteria:
B (Benzene) - 0.01 mg/L
T (Toluene) - 0.75 mg/L
E (Ethylbenzene) - 0.75 mg/L
X (Total Xylenes) - 0.62 mg/L
J: The identification of the analyte is acceptable; the reported value is an estimate.
NS: Monitoring well was not sampled due to presence of PSH.
Bold concentrations indicate a concentration above the laboratory sample detection limit (SDL).
Highlighted concentrations indicate a concentration exceeding the NMOCD Recommended Remediation Action Level (RRAL) Criteria. PSH thicknesses are measured in tenths of a foot.

0 — 75 — 150 Feet

Fractional Scale: 1:550

DATA SOURCES:
Bing Maps - Aerial Imagery, World Street Map

Project No.:	AR197009
Date:	Sep 2019
Drawn By:	SW
Reviewed By:	ELL

Terracon
5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

3Q19 Groundwater Contaminant Concentration Map (09/06/19)

DCP Plant to Lea Station 6" Sec. 31
Plains SRS # 2009-084
NMOCD Ref. # 1RP-2166
Plains Pipeline, LP
U/L "K", Sec. 31, T20S, R37E
Lea County, New Mexico
GPS: 32.527330°, -103.290600°

Exhibit

9

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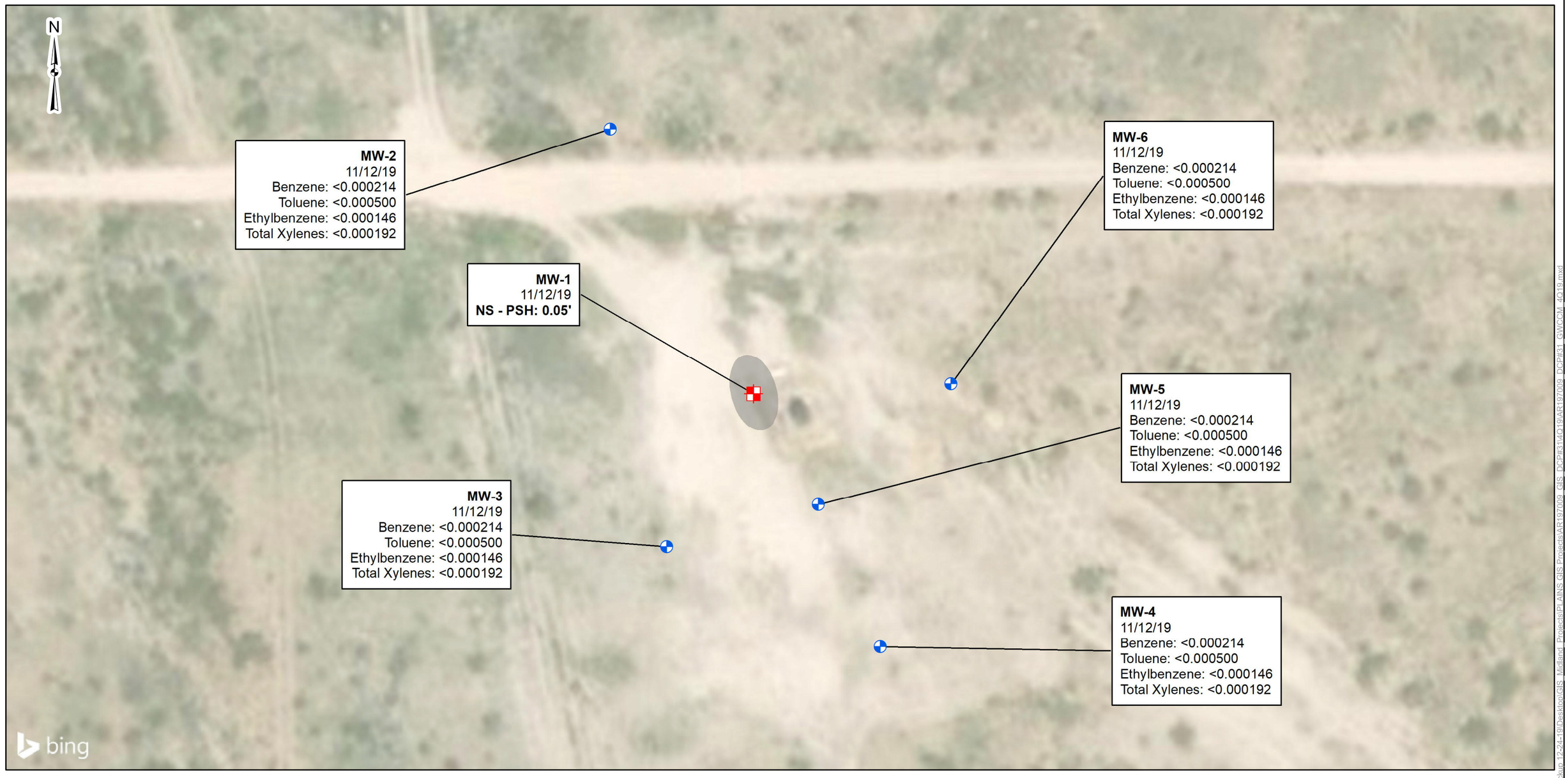

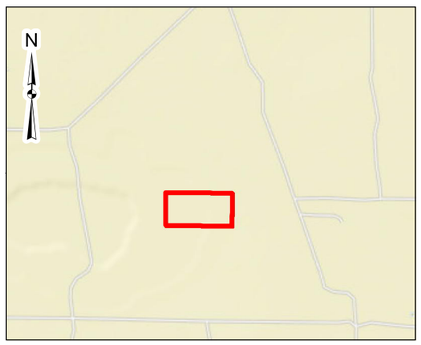

Groundwater Monitoring Site

Recovery Well w/ Mobile Dual Phase Extraction (MDPE) Unit

Monitoring Well (MW)

Free Phase Plume: Outlines Wells w/ Phase Seperated Hydrocarbons (PSH)

New Mexico - Oil Conservation Division (NMOCD) Criteria:
B (Benzene) - 0.01 mg/L
T (Toluene) - 0.75 mg/L
E (Ethylbenzene) - 0.75 mg/L
X (Total Xylenes) - 0.62 mg/L
NS: Monitoring well was not sampled due to presence of PSH.
Bold concentrations indicates a concentration above the laboratory sample detection limit (SDL).
Highlighted concentrations indicate a concentration exceeding the RRC Delineation and Remediation Limits. PSH thicknesses are measured in tenths of feet.

0 — 75 — 150 Feet

Fractional Scale: 1:550

DATA SOURCES:
Bing Maps - Aerial Imagery, World Street Map

Project No.:	AR197009
Date:	Jan 2020
Drawn By:	SW
Reviewed By:	ELL

Terracon
5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

4Q19 Groundwater Contaminant Concentration Map (11/12/19)

DCP Plant to Lea Station 6" Sec. 31
Plains SRS # 2009-084
NMOCD Ref. # 1RP-2166
Plains Pipeline, LP
U/L "K", Sec. 31, T20S, R37E
Lea County, New Mexico
GPS: 32.527330°, -103.290600°

Exhibit

10

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APPENDIX B

Table 1 – Groundwater Elevation and PSH Thickness Summary
Table 2 – Groundwater BTEX Concentration Analytical Summary
Table 3a – 2019 Q1 System Operation Data & Mass Recovery Calculations
Table 3b – 2019 Q2 System Operation Data & Mass Recovery Calculations
Table 3c – 2019 Q3 System Operation Data & Mass Recovery Calculations
Table 3d – 2019 Q4 System Operation Data & Mass Recovery Calculations
Table 4 – MW-1 PSH Thickness & BTEX Recovery Summary
Table 5 – Historical Concentrations of PAH in Groundwater Summary

Table 1
Groundwater Elevation and PSH[1] Thickness Summary

DCP Plant to Lea Station 6-Inch Sec. 31
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2009-084
Terracon Project#: AR197009
NMOCD[2] Reference #: 1RP-2166
All measurements are in feet above mean sea level

Monitoring Well (Well Diameter ")	Date Gauged	Top of Casing (TOC)[3] Elevation	Depth to PSH Below TOC (feet)	Depth to Water Below TOC (feet)	PSH Thickness (feet)	Corrected Groundwater Elevation
MW-1 (4")	12/22/2016	3,539.59	83.05	86.01	2.96	3,456.10
	03/01/2017		83.39	84.91	1.52	3,455.97
	06/27/2017		83.28	85.65	2.37	3,455.95
	05/24/2018		83.65	84.58	0.93	3,455.80
	06/28/2018		83.67	84.68	1.01	3,455.77
	07/31/2018		83.77	84.42	0.65	3,455.72
	08/17/2018		83.73	84.56	0.83	3,455.74
	09/20/2018		83.77	84.38	0.61	3,455.73
	11/21/2018		83.82	84.19	0.37	3,455.71
	02/21/2019		83.76	84.42	0.66	3,455.73
	05/23/2019		83.93	84.09	0.16	3,455.64
	09/06/2019		-	84.20	-	-
	11/11/2019		84.11	84.16	0.05	3,455.47
MW-2 (2")	02/10/2016	3,539.37	-	83.10	-	3,456.27
	05/03/2016		-	83.10	-	3,456.27
	08/04/2016		-	83.08	-	3,456.29
	12/22/2016		-	83.21	-	3,456.16
	03/01/2017		-	83.17	-	3,456.20
	06/27/2017		-	83.28	-	3,456.09
	09/21/2017		-	83.16	-	3,456.21
	11/14/2017		-	83.31	-	3,456.06
	01/15/2018		-	83.31	-	3,456.06
	04/16/2018		-	83.22	-	3,456.15
	05/24/2018		-	83.40	-	3,455.97
	06/28/2018		-	83.29	-	3,456.08
	07/31/2018		-	83.26	-	3,456.11
	08/17/2018		-	83.33	-	3,456.04
	09/20/2018		-	83.32	-	3,456.05
	11/21/2018		-	83.34	-	3,456.03
	02/21/2019		-	83.35	-	3,456.02
	05/23/2019		-	83.44	-	3,455.93
	09/06/2019		-	83.83	-	3,455.54
	11/11/2019		-	83.49	-	3,455.88
MW-3 (2")	02/10/2016	3,539.28	-	83.48	-	3,455.80
	05/03/2016		-	83.45	-	3,455.83
	08/04/2016		-	83.44	-	3,455.84
	12/22/2016		-	83.51	-	3,455.77
	03/01/2017		-	83.49	-	3,455.79
	06/27/2017		-	83.61	-	3,455.67
	09/21/2017		-	83.51	-	3,455.77
	11/14/2017		-	83.62	-	3,455.66
	01/15/2018		-	83.69	-	3,455.59
	04/16/2018		-	83.62	-	3,455.66
	05/24/2018		-	83.70	-	3,455.58
	06/28/2018		-	83.63	-	3,455.65
	07/31/2018		-	83.66	-	3,455.62
	08/17/2018		-	83.69	-	3,455.59
	09/20/2018		-	83.72	-	3,455.56
	11/21/2018		-	83.73	-	3,455.55
	02/21/2019		-	83.69	-	3,455.59
	05/23/2019		-	83.78	-	3,455.50
	09/06/2019		-	83.86	-	3,455.42
	11/11/2019		-	83.89	-	3,455.39

Table 1
Groundwater Elevation and PSH[1] Thickness Summary

DCP Plant to Lea Station 6-Inch Sec. 31
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2009-084
Terracon Project#: AR197009
NMOCD[2] Reference #: 1RP-2166
All measurements are in feet above mean sea level

Monitoring Well (Well Diameter ")	Date Gauged	Top of Casing (TOC)[3] Elevation	Depth to PSH Below TOC (feet)	Depth to Water Below TOC (feet)	PSH Thickness (feet)	Corrected Groundwater Elevation
MW-4 (2")	02/10/2016	3,540.07	-	84.50	-	3,455.57
	05/03/2016		-	84.47	-	3,455.60
	08/04/2016		-	84.48	-	3,455.59
	12/22/2016		-	84.54	-	3,455.53
	03/01/2017		-	84.53	-	3,455.54
	06/27/2017		-	84.63	-	3,455.44
	09/21/2017		-	84.54	-	3,455.53
	11/14/2017		-	84.71	-	3,455.36
	01/15/2018		-	84.71	-	3,455.36
	04/16/2018		-	84.64	-	3,455.43
	05/24/2018		-	84.73	-	3,455.34
	06/28/2018		-	84.65	-	3,455.42
	07/31/2018		-	84.71	-	3,455.36
	08/17/2018		-	84.74	-	3,455.33
	09/20/2018		-	84.76	-	3,455.31
	11/21/2018		-	84.74	-	3,455.33
	02/21/2019		-	84.72	-	3,455.35
	05/23/2019		-	84.82	-	3,455.25
	09/06/2019		-	84.89	-	3,455.18
	11/11/2019		-	84.84	-	3,455.23
MW-5 (4")	02/10/2016	3,539.90	-	84.14	-	3,455.76
	05/03/2016		-	84.10	-	3,455.80
	08/04/2016		-	84.12	-	3,455.78
	12/22/2016		-	84.18	-	3,455.72
	03/01/2017		-	84.16	-	3,455.74
	06/27/2017		-	84.28	-	3,455.62
	09/21/2017		-	84.16	-	3,455.74
	11/14/2017		-	85.40	-	3,454.50
	01/15/2018		-	84.32	-	3,455.58
	04/16/2018		-	84.28	-	3,455.62
	05/24/2018		-	84.37	-	3,455.53
	06/28/2018		-	84.29	-	3,455.61
	07/31/2018		-	84.30	-	3,455.60
	08/17/2018		-	84.31	-	3,455.59
	09/20/2018		-	84.54	-	3,455.36
	11/21/2018		-	84.28	-	3,455.62
	02/21/2019		-	84.35	-	3,455.55
	05/23/2019		-	84.45	-	3,455.45
	09/06/2019		-	84.51	-	3,455.39
	11/11/2019		-	84.49	-	3,455.41
MW-6 (2")	02/10/2016	3540.82	-	85.00	-	3,455.82
	05/03/2016		-	84.96	-	3,455.86
	08/04/2016		-	85.03	-	3,455.79
	12/22/2016		-	85.05	-	3,455.77
	03/01/2017		-	85.06	-	3,455.76
	06/27/2017		-	85.14	-	3,455.68
	09/21/2017		-	85.04	-	3,455.78
	11/14/2017		-	85.23	-	3,455.59
	01/15/2018		-	85.18	-	3,455.64
	04/16/2018		-	85.13	-	3,455.69
	05/24/2018		-	85.23		3,455.59
	06/28/2018		-	85.16	-	3,455.66
	07/31/2018		-	85.20	-	3,455.62
	08/17/2018		-	85.19	-	3,455.63
	09/20/2018		-	85.22	-	3,455.60
	11/21/2018		-	85.21	-	3,455.61
	02/21/2019		-	85.22	-	3,455.60
	05/23/2019		-	85.32	-	3,455.50
	09/06/2019		-	85.36	-	3,455.46
	11/11/2019		-	84.31	-	3,456.51

Notes:
1. PSH: Phase Separated Hydrocarbons
2. NMOCD: New Mexico Oil Conservation Division
3. TOC: Top of Casing
* Elevations based on the North American Vertical Datum of 1988.
** Corrected groundwater elevations were extrapolated using a PSH specific gravity of 0.85, if PSH was gauged in the monitoring well.

Table 2
Groundwater BTEX[1] Concentration Analytical Summary

DCP Plant to Lea Station 6-Inch Sec. 31
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2009-084
NMOCD[2] Reference #: 1RP-2166
Terracon Project #: AR197009
All concentrations are in milligrams per liter (mg/L)

Monitoring Well	Date Sampled	EPA SW846-8021B						
		Benzene	Toluene	Ethylbenzene	M,P-Xylenes	O-Xylenes	Total Xylenes	Total BTEX
NMOCD RRAL CRITERIA[3]		0.01	0.75	0.75	TOTAL XYLENES 0.62			NE[4]
MW-2	02/10/2016	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	05/03/2016	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	08/04/2016	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	12/22/2016	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200
	03/08/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	06/27/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	09/21/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	11/14/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	01/15/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/16/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/17/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/21/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	02/21/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/23/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	09/06/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/12/2019	<0.000214	<0.000500	<0.000146	<0.000330	<0.000192	<0.000192	<0.000146
MW-3	02/10/2016	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	05/03/2016	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	08/04/2016	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	12/22/2016	0.00110	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	0.00110
	03/08/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	06/27/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	09/21/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	11/14/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	01/15/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/16/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/17/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/21/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	02/21/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/23/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	09/06/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/12/2019	<0.000214	<0.000500	<0.000146	<0.000330	<0.000192	<0.000192	<0.000146
MW-4	02/10/2016	0.0021	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0021
	05/03/2016	0.00205	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.00205
	08/04/2016	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	12/22/2016	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200
	03/08/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	06/27/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	09/21/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	11/14/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	01/15/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/16/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/17/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/21/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	02/21/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/23/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	09/06/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/12/2019	<0.000214	<0.000500	<0.000146	<0.000330	<0.000192	<0.000192	<0.000146

Table 2
Groundwater BTEX[1] Concentration Analytical Summary

DCP Plant to Lea Station 6-Inch Sec. 31
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2009-084
NMOCD[2] Reference #: 1RP-2166
Terracon Project #: AR197009
All concentrations are in milligrams per liter (mg/L)

Monitoring Well	Date Sampled	EPA SW846-8021B						
		Benzene	Toluene	Ethylbenzene	M,P-Xylenes	O-Xylenes	Total Xylenes	Total BTEX
NMOCD RRAL CRITERIA[3]		0.01	0.75	0.75	TOTAL XYLENES 0.62			NE[4]
MW-5	02/10/2016	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	05/03/2016	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	08/04/2016	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	12/22/2016	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200
	03/08/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	06/27/2017	0.00318	0.00191	<0.00200	<0.00200	<0.00200	<0.00200	0.00509
	09/21/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	11/14/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	01/15/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/16/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/17/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/21/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	02/21/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	DUP-1	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/23/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	DUP-1	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	09/06/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	DUP-1	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/12/2019	<0.000214	<0.000500	<0.000146	<0.000330	<0.000192	<0.000192	<0.000146
	DUP-1	<0.000214	<0.000500	<0.000146	<0.000330	<0.000192	<0.000192	<0.000146
MW-6	02/10/2016	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	05/03/2016	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	08/04/2016	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	12/22/2016	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200
	03/08/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	06/27/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	09/21/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	11/14/2017	<0.00200	<0.00150	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
	01/15/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/16/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/17/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/21/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	02/21/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/23/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	09/06/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/12/2019	<0.000214	<0.000500	<0.000146	<0.000330	<0.000192	<0.000192	<0.000146

Notes:
1. BTEX: Benzene, Toluene, Ethylbenzene, and Total Xylenes
2. NMOCD: New Mexico Oil Conservation Division
3. RRAL Criteria: Recommended Remediation Action Level Criteria
4. NE: Not Established
J: The target analyte was positively identified below the quantitation limit and above the detection limit

Table 3a

DCP Plant South Sec 31 – SRS #2009-084
2019 Q1 System Operation Data & Mass Recovery Calculations

Date	System Hours	Run Time (hours)	Influent Temp. (°f)	Vacuum (In. h20)	Differential pressure (In. h20)	Flow (SCFM)	Lab Result (ppmv)	Assigned Lab Result (ppmv)	Adjusted Lab Result (mg/L)	Recovery (lbs/hr)	Recovery in Period (lbs)	Total Recovery (lbs)
01/07/19	7,622	0.00	56	21.0	4.30	32.78	-	130.00	0.15	0.02	0.00	0.00
01/08/19	7,646	24.7	54	20.0	4.70	34.38	-	130.00	0.15	0.02	0.49	0.49
01/09/19	7,669	22.3	49	20.0	5.4	37.03	-	130.00	0.16	0.02	0.48	0.97
01/10/19	7,694	25.2	53	20.0	6.0	38.88		130.00	0.16	0.02	0.57	1.5
01/11/19	7,724	29.9	53	20.0	5.0	35.50	-	130.00	0.16	0.02	0.62	2.2
01/14/19	7,790	66.5	49	20.0	5.0	35.64	-	130.00	0.16	0.02	1.39	3.5
01/16/19	7,837	46.9	56	20.0	4.6	33.95		130.00	0.15	0.02	0.92	4.5
01/27/19	7,929	92.2	66	20.0	4.3	32.51		130.00	0.15	0.02	1.70	6.2
01/28/19	7,954	24.8	52	20.0	3.4	29.30		130.00	0.16	0.02	0.42	6.6
01/29/19	7,954	0.3	38	20.0	4.0	32.22		130.00	0.16	0.02	0.01	6.6
02/27/19	7,984	30	58	20.0	5.0	35.32		130.00	0.15	0.02	0.61	7.2
02/28/19	7,985	0.7	74	20.0	5.0	34.79		130.00	0.15	0.02	0.01	7.2
03/05/19	8,024	38.7	47	20.0	3.0	27.66	130.00	130.00	0.16	0.02	0.63	7.8
03/06/19	8,048	24.1	48	20.0	1.0	15.95		130.00	0.16	0.01	0.23	8.1
03/07/19	8,076	28.5	70	20.0	3.0	27.05		130.00	0.15	0.02	0.43	8.5
03/11/19	8,151	74.8	50	20.0	0.0	3.30		130.00	0.16	0.00	0.14	8.6
03/12/19	8,176	24.9	53	20.0	0.0	2.61		130.00	0.16	0.00	0.04	8.7
03/14/19	8,225	49	60	20.0	7.0	41.72		130.00	0.15	0.02	1.17	9.8
03/15/19	8,249	23.6	53	20.0	7.0	42.00		130.00	0.16	0.02	0.58	10.4
03/18/19	8,316	67.4	62	20.0	4.0	31.47		130.00	0.15	0.02	1.21	11.6
Total Run Time:	695	Averages:	55	20.05	4.09	30.20				**PSH Volume Recovered in Vapor Phase =**	**1.9**	**gallons**
										PSH Volume Recovered in Liquid Phase =	**399.00**	**gallons**
										Total PSH Recovered =	**400.9**	**gallons**

Ex: Conversion from ppmv to mg/L							
Date	Measured Conc. (ppmv)	Molecular Wt. (grams)	Pressure (atm)	Gas Constant (atm.L/K.mole)	Temp. (F)	Temp. (K)	Conc. (mg/L)
08/06/18	130	27.90	1	0.0821	82	301	0.15

SG = 0.734
lbs/Gallon = 6.12

% Vol. Hydrocarbon to ppmv - Influent 1*				
Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0		0.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0		0.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0		0.00
Iso-Pentane (C4H12)	72.15	0		0.00
N-Pentane (C5H12)	72.15	0		0.00
Hexane+ (C6H14)	97.40	0.013		130.00
			Total	**130.00**
*Hexane+ is treated as 60% hexanes, 30 % heptanes, and 10 % octanes, as such its (0.6*93.1887)+(0.3*100.2019)+(0.1*114.2285) = 97.3966				

Molecular Weight Calculations		
component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	99.5100
Methane (CH4)	16.0425	0.0000
Carbon Dioxide (CO2)	44.011	0.0450
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0000
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0000
Iso-Pentane (C4H12)	72.1488	0.0000
N-Pentane (C5H12)	72.1488	0.0000
Hexane+	97.3966	0.0040
	Total	99.559
	Calculated MW	**27.9024**

% Vol. Hydrocarbon to ppmv - Influent 2*				
Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0		0.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0		0.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0		0.00
Iso-Pentane (C4H12)	72.15	0		0.00
N-Pentane (C5H12)	72.15	0		0.00
Hexane+ (C6H14)	97.40	0.116		1160.00
			Total	**1160.00**
*Hexane+ is treated as 60% hexanes, 30 % heptanes, and 10 % octanes, as such its (0.6*93.1887)+(0.3*100.2019)+(0.1*114.2285) = 97.3966				

Molecular Weight Calculations		
component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	99.6860
Methane (CH4)	16.0425	0.0000
Carbon Dioxide (CO2)	44.011	0.2790
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0000
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0000
Iso-Pentane (C4H12)	72.1488	0.0000
N-Pentane (C5H12)	72.1488	0.0000
Hexane+	97.3966	0.0350
	Total	100
	Calculated MW	**28.0849**

Table 3b

DCP Plant South Sec 31 – SRS #2009-084
2019 Q2 System Operation Data & Mass Recovery Calculations

Date	System Hours	Run Time (hours)	Influent Temp. (°f)	Vacuum (In. h20)	Differential pressure (In. h20)	Flow (SCFM)	Lab Result (ppmv)	Assigned Lab Result (ppmv)	Adjusted Lab Result (mg/L)	Recovery (lbs/hr)	Recovery in Period (lbs)	Total Recovery (lbs)
05/02/19	8,316	0.00	71	2.0	4.30	33.10	-	50.00	0.06	0.01	0.00	0.00
05/03/19	8,385	69	73	2.0	4.70	34.54	-	50.00	0.06	0.01	0.51	0.51
05/06/19	8,412	27	82	2.0	5.4	36.71	-	50.00	0.06	0.01	0.21	0.72
05/08/19	8,460	48	73	2.0	6.0	39.02		50.00	0.06	0.01	0.40	1.1
05/09/19	8,490	30.3	69	2.0	5.0	35.76	-	50.00	0.06	0.01	0.24	1.4
05/10/19	8,508	17.7	42	2.0	5.0	36.71	-	50.00	0.06	0.01	0.15	1.5
05/13/19	8,582	73.9	63	2.0	4.6	34.49		50.00	0.06	0.01	0.56	2.1
05/28/19	8,582	0	92	2.0	4.3	32.46		50.00	0.06	0.01	0.00	2.1
05/29/19	8,582	0	92	2.0	3.4	28.87		50.00	0.06	0.01	0.00	2.1
05/31/19	8,633	51.1	88	2.0	4.0	31.42		50.00	0.06	0.01	0.34	2.4
06/03/19	8,703	69.7	84	2.0	5.0	35.26	50.00	50.00	0.06	0.01	0.52	2.9
Total Run Time:	387	Averages:	75	2.00	4.70	34.39						

PSH Volume Recovered in Vapor Phase =	**0.5**	**gallons**
PSH Volume Recovered in Liquid Phase =	**80.64**	**gallons**
Total PSH Recovered =	**81.1**	**gallons**

Ex: Conversion from ppmv to mg/L

Date	Measured Conc. (ppmv)	Molecular Wt. (grams)	Pressure (atm)	Gas Constant (atm.L/K.mole)	Temp. (F)	Temp. (K)	Conc. (mg/L)
08/06/18	50	28.02	1	0.0821	82	301	0.06

SG = 0.734
lbs/Gallon = 6.12

% Vol. Hydrocarbon to ppmv - Influent 1*

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0		0.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0.002		20.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0		0.00
Iso-Pentane (C4H12)	72.15	0		0.00
N-Pentane (C5H12)	72.15	0		0.00
Hexane+ (C6H14)	97.40	0.003		30.00
			Total	**50.00**

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

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	99.9560
Methane (CH4)	16.0425	0.0000
Carbon Dioxide (CO2)	44.011	0.0420
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0010
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0000
Iso-Pentane (C4H12)	72.1488	0.0000
N-Pentane (C5H12)	72.1488	0.0000
Hexane+	97.3966	0.0010
	Total	100
	Calculated MW	**28.0236**

Table 3c

DCP Plant South Sec 31 – SRS #2009-084
2019 Q3 System Operation Data & Mass Recovery Calculations

Date	System Hours	Run Time (hours)	Influent Temp. (°f)	Vacuum (In. h20)	Differential pressure (In. h20)	Flow (SCFM)	Lab Result (ppmv)	Assigned Lab Result (ppmv)	Adjusted Lab Result (mg/L)	Recovery (lbs/hr)	Recovery in Period (lbs)	Total Recovery (lbs)
08/02/19	8,769	0.00	90	2.0	4.30	32.52	-	30.00	0.03	0.00	0.00	0.00
08/05/19	8,849	80	104	2.0	4.70	33.58	-	30.00	0.03	0.00	0.33	0.33
08/06/19	8,866	17	83	2.0	5.4	36.68	-	30.00	0.03	0.00	0.08	0.41
08/08/19	8,913	47	90	2.0	6.0	38.42		30.00	0.03	0.00	0.23	0.6
08/12/19	9,009	96	94	2.0	5.0	34.94	-	30.00	0.03	0.00	0.42	1.1
08/14/19	9,058	49	80	2.0	5.0	35.39	-	30.00	0.03	0.00	0.22	1.3
08/15/19	9,081	23	102	2.0	4.6	33.28	-	30.00	0.03	0.00	0.09	1.4
08/19/19	9,082	0.8	85	2.0	4.3	32.67	-	30.00	0.03	0.00	0.00	1.4
08/20/19	9,106	24.2	90	2.0	3.4	28.92	-	30.00	0.03	0.00	0.09	1.5
08/22/19	9,153	47	88	2.0	4.0	31.42	-	30.00	0.03	0.00	0.19	1.6
09/20/19	9,354	200.7	72	2.0	5.2	36.36	-	30.00	0.03	0.00	0.95	2.6
09/23/19	9,427	72.8	84	2.0	6.5	40.20	-	30.00	0.03	0.01	0.37	3.0
09/24/19	9,450	23.2	82	2.0	4.8	34.61	-	30.00	0.03	0.00	0.10	3.1
09/25/19	9,479	29.2	101	2.0	5.9	37.72	-	30.00	0.03	0.00	0.14	3.2
09/27/19	9,524	45.5	103	2.0	5.2	35.35	-	30.00	0.03	0.00	0.20	3.4
09/30/19	9,593	68.6	78	2.0	5.6	37.52	-	30.00	0.03	0.00	0.33	3.7
Total Run Time:	824	Averages:	89	2.00	4.99	34.97						

PSH Volume Recovered in Vapor Phase =	**0.6**	**gallons**
PSH Volume Recovered in Liquid Phase =	**130.20**	**gallons**
Total PSH Recovered =	**130.8**	**gallons**

Ex: Conversion from ppmv to mg/L

Date	Measured Conc. (ppmv)	Molecular Wt. (grams)	Pressure (atm)	Gas Constant (atm.L/K.mole)	Temp. (F)	Temp. (K)	Conc. (mg/L)
08/06/18	30	28.02	1	0.0821	82	301	0.03

SG = 0.734
lbs/Gallon = 6.12

% Vol. Hydrocarbon to ppmv - Influent 1*

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0		0.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0		0.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0		0.00
Iso-Pentane (C4H12)	72.15	0		0.00
N-Pentane (C5H12)	72.15	0		0.00
Hexane+ (C6H14)	97.40	0.003		30.00
			Total	**30.00**

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

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	99.9620
Methane (CH4)	16.0425	0.0000
Carbon Dioxide (CO2)	44.011	0.0370
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0000
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0000
Iso-Pentane (C4H12)	72.1488	0.0000
N-Pentane (C5H12)	72.1488	0.0000
Hexane+	97.3966	0.0010
	Total	100
	Calculated MW	**28.0226**

Table 3d

DCP Plant South Sec 31 - SRS #2009-084

2019 Q4 System Operation Data and Mass Recovery Calculations

Time	Period (hours)	Influent Temp. (°f)	Vacuum (In. hg)	Vacuum (In. h20)	Differential pressure (In. h20)	Flow (SCFM)	FID Readings (ppm)	Lab Result (ppmv)	Assigned Lab Result (ppmv)	Correction Factor (CF)	Adjusted Lab Result (ppmv)	Adjusted Lab Result (mg/L)	Recovery (lbs/hr)	Recovery in Period (lbs)	Total Recovery (lbs)
20:30	1	44	21.0	285.79	46.8	134.10	50000	3690.00	3690.00	1.00	3690	4.75	2.38	2.38	2.38
21:30	1	40	21.0	285.79	46.6	134.34	50000	-	3690.00	1.00	3690	4.79	2.41	2.41	4.79
22:30	1	39	21.0	285.79	47.2	135.34	50000	-	3690.00	1.00	3690	4.80	2.43	2.43	7.21
23:30	1	32	21.0	285.79	47.5	136.73	50000	-	3690.00	1.00	3690	4.87	2.49	2.49	9.70
0:30	1	30	21.0	285.79	46.9	136.14	50000	-	3690.00	1.00	3690	4.89	2.49	2.49	12.19
1:30	1	28	21.0	285.79	45.7	134.67	50000	-	3690.00	1.00	3690	4.91	2.47	2.47	14.66
2:30	1	28	21.0	285.79	46.1	135.25	50000	-	3240.00	1.00	3240	4.27	2.16	2.16	16.82
3:30	1	28	21.0	285.79	46.4	135.69	50000	-	3240.00	1.00	3240	4.27	2.17	2.17	18.99
4:30	1	26	21.0	285.79	47.0	136.85	50000	-	3240.00	1.00	3240	4.29	2.19	2.19	21.18
5:30	1	26	21.0	285.79	46.2	135.68	50000	-	3240.00	1.00	3240	4.29	2.18	2.18	23.36
6:30	1	26	21.0	285.79	46.8	136.56	50000	3240.00	3240.00	1.00	3240	4.29	2.19	2.19	25.55
7:30	1	30	21.0	285.79	46.5	135.56	50000		3240.00	1.00	3240	4.25	2.16	2.16	27.70
Averages:		31.42	21.00	285.79	46.64	135.58	50000.00						Total	27.70	

PSH Mass Recovered in Vapor Phase = 4.05 gallons

FID maximum Concentration = 50,000 PPM

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

Measured Conc.	Molecular Wt.	Pressure	Gas Constant	Temp.	Temp.	Conc.
(ppmv)	(Grams)	(atm)	(atm.liter/K.mole)	(F)	(K)	(C_mg/l)
3690	29.5638	1	0.0821	44	279.666667	4.75118701

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

Liquid-phase Hydrocarbon Recovery

∏ * r2 * h = volume

Total Hydrocarbon Recovery

PSH Mass Recovered in Vapor Phase =	27.70	lbs
	4.05	gallons
PSH Mass Recovered in Liquid Phase =	27.36	lbs
	4.00	gallons
TOTAL =	**55.06**	**lbs**
	8.05	**gallons**

Gallons removed determined at time of pick up

PSH Volume in Gallons=	4
PSH Mass in Pounds=	27.36

% Vol. Hydrocarbon to ppmv - Influent 1

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0		0.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0		0.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0		0.00
Iso-Pentane (C4H12)	72.15	0		0.00
N-Pentane (C5H12)	72.15	0		0.00
Hexane+ (C6H14)	97.40	0.369		3690.00
			Total	**3690.00**

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

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	90.7140
Methane (CH4)	16.0425	0.0000
Carbon Dioxide (CO2)	44.011	9.1690
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0000
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0000
Iso-Pentane (C4H12)	72.1488	0.0000
N-Pentane (C5H12)	72.1488	0.0000
Hexane+	97.3966	0.1170
	Total	100
	Calculated MW	**29.5638**

% Vol. Hydrocarbon to ppmv - Influent 2

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0		0.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0		0.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0		0.00
Iso-Pentane (C4H12)	72.15	0		0.00
N-Pentane (C5H12)	72.15	0		0.00
Hexane+ (C6H14)	97.40	0.324		3240.00
			Total	**3240.00**

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

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	92.2710
Methane (CH4)	16.0425	0.0000
Carbon Dioxide (CO2)	44.011	7.6270
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0000
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0000
Iso-Pentane (C4H12)	72.1488	0.0000
N-Pentane (C5H12)	72.1488	0.0000
Hexane+	97.3966	0.1020
	Total	100
	Calculated MW	**29.3067**

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

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

TABLE 4
MW-1 PSH[1] Thickness & BTEX[2] Recovery Summary

DCP Plant to Lea Station 6-Inch Sec. 31
Lea County, New Mexico
Plains Pipeline, L.P. SRS #2009-084
Terracon Project #: AR197009
NMOCD[3] REFERENCE #: 1RP-2166
All measurements are in feet above mean sea level

Monitoring Well	Date	Top of Casing (TOC)[4] Elevation*	Depth to PSH Below TOC (feet)	Depth to Water Below TOC (feet)	PSH Thickness (feet)	Corrected Groundwater Elevation**	Total Fluid Volume (gallons)	PSH Recovered (gallons)
MW-1	01/03/2018	3,540.25	80.67	82.89	2.22	3,459.25	-	-
	01/09/2018		80.44	82.00	1.56	3,459.58	-	-
	02/06/2018		80.61	82.55	1.94	3,459.35	-	-
	02/23/2018		80.62	82.63	2.01	3,459.33	-	-
	02/28/2018		80.64	80.66	0.02	3,459.61	-	-
	03/08/2018		80.65	82.64	1.99	3,459.30	-	-
	03/21/2018		80.66	82.70	2.04	3,459.28	-	-
	03/27/2018		80.65	82.70	2.05	3,459.29	-	-
	04/04/2018		80.68	82.73	2.05	3,459.26	-	-
	04/13/2018		80.68	82.70	2.02	3,459.27	-	-
	05/01/2018		80.63	82.62	1.99	3,459.32	-	-
	05/10/2018		80.59	82.92	2.33	3,459.31	-	-
	05/17/2018		80.70	83.06	2.36	3,459.20	-	-
	05/21/2018		80.05	82.23	2.18	3,459.87	-	-
	05/31/2018		80.62	82.58	1.96	3,459.34	-	-
	06/07/2018		80.59	82.21	1.62	3,459.42	-	-
	06/12/2018		80.69	82.77	2.08	3,459.25	-	-
	06/22/2018		80.70	82.75	2.05	3,459.24	-	-
	06/28/2018		80.80	82.80	2.00	3,459.15	-	-
	07/10/2018		80.79	82.87	2.08	3,459.15	-	-
	07/19/2018		80.76	82.99	2.23	3,459.16	-	-
	07/24/2018		80.71	83.02	2.31	3,459.19	-	-
	08/02/2018		80.68	82.93	2.25	3,459.23	-	-
	08/08/2018		80.70	82.92	2.22	3,459.22	-	-
	09/06/2018		80.70	83.04	2.34	3,459.20	-	-
	09/13/2018		80.69	83.15	2.46	3,459.19	-	-
	09/28/2018		81.69	82.92	1.23	3,458.38	-	-
	10/10/2018		80.63	-	-	-	-	-
	10/16/2018		80.76	83.00	2.24	3,459.15	-	-
	10/24/2018		80.73	82.06	1.33	3,459.32	-	-
	10/25/2018		80.74	82.11	1.37	3,459.30	0.2	0.0
	11/06/2018		80.91	82.66	1.75	3,459.08	-	-
	11/14/2018		80.69	82.27	1.58	3,459.32	-	-
	12/20/2018		81.85	83.52	1.67	3,458.15	-	-
	02/06/2019		80.73	81.74	1.01	3,459.37	-	-
	02/14/2019		80.85	82.45	1.60	3,459.16	-	-
	02/21/2019		80.81	81.70	0.89	3,459.31	-	-
	05/14/2019		84.17	-	-	-	4.0	0.000
	06/14/2019		84.23	84.48	0.25	3,455.98	2.9	0.041
	06/27/2019		84.22	84.66	0.44	3,455.96	2.6	0.072
	07/10/2019		84.11	84.54	0.43	3,456.08	3.0	0.070
	07/29/2019		84.32	84.40	0.08	3,455.92	3.0	0.013
	09/13/2019		84.25	84.41	0.16	3,455.98	-	0.026
	10/17/2019		-	84.23	-	-	2.0	-
	11/01/2019		-	-	-	-	-	-
	11/06/2019		-	-	-	-	-	-
	11/20/2019		-	-	-	-	-	-
	12/11/2019		84.35	84.47	0.12	3,455.88	3.00	0.020
	12/20/2019		84.99	85.09	0.10	3,455.25	3.00	0.016
			4Q19 Average PSH Thickness		**0.11**	**4Q19 Total Recovered**	**6.0**	**0.258**

Notes:
1. PSH: Phase Separated Hydrocarbons
2. BTEX: Benzene, Toluene, Ethylbenzene, and Total Xylenes
3. NMOCD: New Mexico Oil Conservation Division
4. TOC: Top Of Casing

* Elevations based on the North American Vertical Datum of 1988.

** Corrected groundwater elevations were extrapolated using a PSH specific gravity of 0.85, if PSH was gauged in the monitoring well.

Table 5
Historical Concentrations of PAH[1] in Groundwater Summary

DCP Plant to Lea Station 6-Inch Section 31
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2009-084
Terracon Project #: AR197011
NMOCD[2] Reference#: 1RP-2166
All concentrations are in milligrams per liter (mg/L)[3]

Monitoring Well	Date Sampled	EPA SW846-8270C, 3510																
		Naphthalene	Benzo(a)pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Phenanthrene	Pyrene
NMWQCC Groundwater Criteria[4]		0.03	0.0007	NE[5]														
MW-1	12/10/2009	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	<0.05	<0.05	<0.05	N/A	<0.05
MW-2	9/29/2009	N/A	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	N/A	<0.005	<0.005	<0.005	<0.005	<0.005
MW-3	9/29/2009	N/A	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	N/A	<0.005	<0.005	<0.005	<0.005	<0.005
	12/16/2011	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	N/A	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111
	11/9/2012	<0.00031	<0.00019	<0.00035	<0.00033	<0.00016	<0.00024	<0.00036	<0.00049	<0.00028	<0.00022	<0.00019	N/A	<0.00024	<0.00030	<0.00032	<0.00027	<0.00027
MW-4	9/29/2009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	N/A	<0.005	<0.005	<0.005	<0.005	<0.005
	12/21/2011	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	N/A	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102
MW-5	3/25/2011	N/A	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	N/A	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
	11/9/2012	<0.00032	<0.00020	<0.00037	<0.00034	<0.00016	<0.00025	<0.00038	<0.00051	<0.00029	<0.00023	<0.00020	N/A	<0.00025	<0.00031	<0.00034	<0.00028	<0.00028
	12/23/2013	0.000535	<0.000049	<0.000049	<0.000049	<0.000049	<0.000049	<0.000049	<0.000049	<0.000049	<0.000049	<0.000049	N/A	<0.000049	<0.000049	<0.000049	<0.000049	<0.000049
MW-6	5/13/2014	N/A	<0.000051	<0.000051	<0.000051	<0.000051	<0.000051	<0.000051	<0.000051	<0.000051	<0.000051	<0.000051	N/A	<0.000051	<0.000051	<0.000051	<0.000051	<0.000051

Notes:
1. PAH: Polycyclic Aromatic Hydrocarbons
2. NMOCD: New Mexico Oil Conservation Division
3. mg/L milligrams per liter
4. NMWQCC Groundwater Criteria: Recommended Remediation Action Level Criteria
5. NE: Not Established
J: The target analyte was positively identified below the quantitation limit and above the detection limit
Bold text indicates a concentration above the laboratory detection limit.
Highlighted text indicates a concentration exceeding the NMOCD RRAL Criteria

APPENDIX C

Certified Xenco Laboratories Analytical Reports:
1Q19 Groundwater Report 615446
2Q19 Groundwater Report 625491
3Q19 Groundwater Report 636293
4Q19 Groundwater Report 643092

Analytical Report 615446

for

Terracon-Lubbock

Project Manager: John Fergerson

DCP Plant to Lea Station 6"

AR197009

27-FEB-19

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

Table of Contents

27-FEB-19

Project Manager: **John Fergerson**
Terracon-Lubbock
5827 50th st, Suite 1
Lubbock, TX 79424

Reference: XENCO Report No(s): **615446**
DCP Plant to Lea Station 6"
Project Address: Sec 31

John Fergerson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 615446. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 615446 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 615446

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Station 6"

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	02-21-19 14:04		615446-001
MW-3	W	02-21-19 13:47		615446-002
MW-4	W	02-21-19 14:30		615446-003
MW-5	W	02-21-19 14:37		615446-004
MW-6	W	02-21-19 15:21		615446-005
DUP 1	W	02-21-19 14:42		615446-006

CASE NARRATIVE SUMMARY

Client Name: ***Terracon-Lubbock***

Project Name: ***DCP Plant to Lea Station 6"***

Project ID:	*AR197009*	*Report Date:*	*27-FEB-19*
Work Order Number:	*615446*	*Date Received:*	*22-FEB-19*

Jessica Kramer

Jessica Kramer
Project Assistant

Certificate of Analytical Results
615446
Terracon-Lubbock, Lubbock, TX
DCP Plant to Lea Station 6"

Sample Id: **MW-2** Matrix: Water Sample Depth:

Lab Sample Id: 615446-001 Date Collected: 02.21.19 14.04 Date Received: 02.22.19 09.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3080459 Date Prep: 02.22.19 18.03

Prep seq: 7672500

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	02.24.19 14:26	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	02.24.19 14:26	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	02.24.19 14:26	U	1
m_p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	02.24.19 14:26	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	02.24.19 14:26	U	1
Xylenes, Total	1330-20-7	<0.000270		0.000270	mg/L	02.24.19 14:26	U	
Total BTEX		<0.000270		0.000270	mg/L	02.24.19 14:26	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	103	66 - 120	%		
4-Bromofluorobenzene	109	67 - 120	%		

Sample Id: **MW-3** Matrix: Water Sample Depth:

Lab Sample Id: 615446-002 Date Collected: 02.21.19 13.47 Date Received: 02.22.19 09.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3080459 Date Prep: 02.22.19 18.03

Prep seq: 7672500

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	02.24.19 14:50	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	02.24.19 14:50	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	02.24.19 14:50	U	1
m_p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	02.24.19 14:50	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	02.24.19 14:50	U	1
Xylenes, Total	1330-20-7	<0.000270		0.000270	mg/L	02.24.19 14:50	U	
Total BTEX		<0.000270		0.000270	mg/L	02.24.19 14:50	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	102	66 - 120	%		
4-Bromofluorobenzene	110	67 - 120	%		

Certificate of Analytical Results
615446
Terracon-Lubbock, Lubbock, TX
DCP Plant to Lea Station 6"

Sample Id: **MW-4** Matrix: Water Sample Depth:

Lab Sample Id: 615446-003 Date Collected: 02.21.19 14.30 Date Received: 02.22.19 09.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3080459 Date Prep: 02.22.19 18.03

Prep seq: 7672500

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	02.24.19 15:15	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	02.24.19 15:15	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	02.24.19 15:15	U	1
m_p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	02.24.19 15:15	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	02.24.19 15:15	U	1
Xylenes, Total	1330-20-7	<0.000270		0.000270	mg/L	02.24.19 15:15	U	
Total BTEX		<0.000270		0.000270	mg/L	02.24.19 15:15	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	105	66 - 120	%		
4-Bromofluorobenzene	112	67 - 120	%		

Sample Id: **MW-5** Matrix: Water Sample Depth:

Lab Sample Id: 615446-004 Date Collected: 02.21.19 14.37 Date Received: 02.22.19 09.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3080459 Date Prep: 02.22.19 18.03

Prep seq: 7672500

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	02.24.19 16:52	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	02.24.19 16:52	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	02.24.19 16:52	U	1
m_p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	02.24.19 16:52	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	02.24.19 16:52	U	1
Xylenes, Total	1330-20-7	<0.000270		0.000270	mg/L	02.24.19 16:52	U	
Total BTEX		<0.000270		0.000270	mg/L	02.24.19 16:52	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	101	66 - 120	%		
4-Bromofluorobenzene	108	67 - 120	%		

Certificate of Analytical Results
615446
Terracon-Lubbock, Lubbock, TX
DCP Plant to Lea Station 6"

Sample Id: **MW-6** Matrix: Water Sample Depth:

Lab Sample Id: 615446-005 Date Collected: 02.21.19 15.21 Date Received: 02.22.19 09.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3080459 Date Prep: 02.22.19 18.03

Prep seq: 7672500

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	02.24.19 17:16	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	02.24.19 17:16	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	02.24.19 17:16	U	1
m_p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	02.24.19 17:16	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	02.24.19 17:16	U	1
Xylenes, Total	1330-20-7	<0.000270		0.000270	mg/L	02.24.19 17:16	U	
Total BTEX		<0.000270		0.000270	mg/L	02.24.19 17:16	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	102	66 - 120	%		
4-Bromofluorobenzene	110	67 - 120	%		

Sample Id: **DUP 1** Matrix: Water Sample Depth:

Lab Sample Id: 615446-006 Date Collected: 02.21.19 14.42 Date Received: 02.22.19 09.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3080459 Date Prep: 02.22.19 18.03

Prep seq: 7672500

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	02.24.19 17:40	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	02.24.19 17:40	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	02.24.19 17:40	U	1
m_p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	02.24.19 17:40	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	02.24.19 17:40	U	1
Xylenes, Total	1330-20-7	<0.000270		0.000270	mg/L	02.24.19 17:40	U	
Total BTEX		<0.000270		0.000270	mg/L	02.24.19 17:40	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	104	66 - 120	%		
4-Bromofluorobenzene	115	67 - 120	%		

Certificate of Analytical Results
615446

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Station 6"

Sample Id: **7672500-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 7672500-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3080459 Date Prep: 02.22.19 18.03

Prep seq: 7672500

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	02.24.19 07:49	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	02.24.19 07:49	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	02.24.19 07:49	U	1
m_p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	02.24.19 07:49	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	02.24.19 07:49	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	102	66 - 120	%		
4-Bromofluorobenzene	109	67 - 120	%		

CHRONOLOGY OF HOLDING TIMES

Analytical Method : BTEX by EPA 8021B
Work Order #: **615446**
Date Received: 02/22/19

Client : Terracon-Lubbock
Project ID: AR197009

Field Sample ID	Lab Sample ID	Date Collected	Date Extracted	Max Holding Time Extracted (Days)	Time Held Extracted (Days)	Date Analyzed	Max Holding Time Analyzed (Days)	Time Held Analyzed (Days)	Q
MW-2	615446-001	02/21/19				02/24/19	14	3	P
MW-3	615446-002	02/21/19				02/24/19	14	3	P
MW-4	615446-003	02/21/19				02/24/19	14	3	P
MW-5	615446-004	02/21/19				02/24/19	14	3	P
MW-6	615446-005	02/21/19				02/24/19	14	3	P
DUP 1	615446-006	02/21/19				02/24/19	14	3	P

F = These samples were analyzed outside the recommended holding time.
P = Samples analyzed within the recommended holding time.

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Analytical Log

Analytical Method:	BTEX by EPA 8021B	Batch #:	3080459
Project Name:	DCP Plant to Lea Station 6"	Project ID:	AR197009
Client Name:	Terracon-Lubbock	WO Number:	615446

Client Sample Id	Lab Sample Id	QC Types
DUP 1	615446-006	SMP
MW-2	615446-001	SMP
MW-3	615446-002	SMP
MW-4	615446-003	SMP
MW-5	615446-004	SMP
MW-6	615446-005	SMP
	615254-009 S	MS
	615254-009 SD	MSD
	7672500-1-BKS	BKS
	7672500-1-BLK	BLK
	7672500-1-BSD	BSD

Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6"

Work Orders : 615446, **Project ID:** AR197009

Lab Batch #: 3080459 **Sample:** 7672500-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/24/19 06:12

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.103	0.100	103	66-120	
4-Bromofluorobenzene	0.102	0.100	102	67-120	

Lab Batch #: 3080459 **Sample:** 7672500-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/24/19 06:36

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.102	0.100	102	66-120	
4-Bromofluorobenzene	0.100	0.100	100	67-120	

Lab Batch #: 3080459 **Sample:** 7672500-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/24/19 07:49

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.102	0.100	102	66-120	
4-Bromofluorobenzene	0.109	0.100	109	67-120	

Lab Batch #: 3080459 **Sample:** 615254-009 S / MS **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 02/24/19 08:38

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0962	0.100	96	66-120	
4-Bromofluorobenzene	0.0982	0.100	98	67-120	

Lab Batch #: 3080459 **Sample:** 615254-009 SD / MSD **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 02/24/19 09:02

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0976	0.100	98	66-120	
4-Bromofluorobenzene	0.101	0.100	101	67-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: DCP Plant to Lea Station 6"

Work Order #: 615446 **Project ID:** AR197009

Analyst: MIT **Date Prepared:** 02/22/2019 **Date Analyzed:** 02/24/2019

Lab Batch ID: 3080459 **Sample:** 7672500-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000480	0.100	0.0985	99	0.100	0.0998	100	1	74-120	20	
Toluene	<0.000512	0.100	0.0997	100	0.100	0.0998	100	0	74-120	20	
Ethylbenzene	<0.000616	0.100	0.103	103	0.100	0.103	103	0	74-120	20	
m_p-Xylenes	<0.000454	0.200	0.207	104	0.200	0.207	104	0	73-120	25	
o-Xylene	<0.000270	0.100	0.104	104	0.100	0.105	105	1	73-120	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: DCP Plant to Lea Station 6"

Work Order # : 615446 **Project ID:** AR197009

Lab Batch ID: 3080459 **QC- Sample ID:** 615254-009 S **Batch #:** 1 **Matrix:** Ground Water

Date Analyzed: 02/24/2019 **Date Prepared:** 02/22/2019 **Analyst:** MIT

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000480	0.100	0.102	102	0.100	0.102	102	0	15-147	25	
Toluene	<0.000512	0.100	0.101	101	0.100	0.0999	100	1	11-147	25	
Ethylbenzene	<0.000616	0.100	0.100	100	0.100	0.101	101	1	10-149	25	
m_p-Xylenes	<0.000454	0.200	0.199	100	0.200	0.202	101	1	62-124	25	
o-Xylene	<0.000270	0.100	0.102	102	0.100	0.103	103	1	62-124	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Attachment A Laboratory Data Package Cover Page

Project Name: **DCP Plant to Lea Station 6"** Laboratory Number: **615446**

This Data package consists of : Laboratory Batch No(s) **3080459**

This signature page, the laboratory review checklist, and the following reportable data:

[X] R1 Field chain-of-custody documentation;

[X] R2 Sample identification cross-reference;

[X] R3 Test reports (analytical data sheets) for each environmental sample that includes:
- a) Items consistent with NELAC 5
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

[X] R4 Surrogate Recovery data including:
- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

[X] R5 Test reports/summary forms for blank samples;

[X] 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.

[X] 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

[X] R8 Laboratory anaytical 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.

[X] R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;

[X] R10 Other problems or anomalies.

[X] Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

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.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC 25.6 and was last inspection by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The offical signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Jessica Kramer	Jessica Kramer	**Project Assistant**	**27-FEB-19**
Name (Printed)	Signature	Official Title (printed)	Date

A1

Attachment A (cont'd) : Laboratory Review Checklist: Reportable Data

Laboratory Name:	XENCO LABORATORIES	LRC Date :	27-FEB-19
Project Name:	DCP Plant to Lea Station 6"	Laboratory Job Number :	615446
Reviewer Name:	JKR	Batch Number(s) :	3080459

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-Custody (COC)**					
		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 soil/solid samples for volatile analysis extracted with methanol per SW846 Method 5035?	X				
		If required for the project, were 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 procedure, 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 the 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 the 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				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				

Attachment A (cont'd) : Laboratory Review Checklist: Reportable Data

Laboratory Name:	XENCO LABORATORIES	LRC Date :	27-FEB-19
Project Name:	DCP Plant to Lea Station 6"	Laboratory Job Number :	615446
Reviewer Name:	JKR	Batch Number(s) :	3080459

#[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 the 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 (**					
		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 Standard (IS)**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw Data (NELAC 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 Digestions 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 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 to the TCEQ-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).

Attachment A (cont'd): Laboratory Review Checklist: Exception Reports

Laboratory Name:	XENCO LABORATORIES	LRC Date:	27-FEB-19
Project Name:	DCP Plant to Lea Station 6"	Laboratory Job Number:	615446
Reviewer Name:	JKR	Batch Number(s) :	3080459

ER# [1]	DESCRIPTION

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No is checked on the LRC).

DCS Summary 615446

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Station 6"

Analytical Method: **BTEX by EPA 8021B** Matrix: **Water**

Prep Method: **SW5030B** Laboratory: **Xenco - Lubbock**

Parameter	SDL	MQL	Spike Amount	Actual Amount	Units
Benzene	0.000480	0.00100	0.000700	0.000700	mg/L
Toluene	0.000512	0.00100	0.000700	0.000800	mg/L
Ethylbenzene	0.000616	0.00100	0.000700	0.000800	mg/L
m_p-Xylenes	0.000454	0.00200	0.00140	0.00160	mg/L
o-Xylene	0.000270	0.00100	0.000700	0.000800	mg/L

615446

615446

CHAIN OF CUSTODY RECORD

Terracon

Office Location: Lubbock

Project Manager: John Fergerson

Sampler's Name: Aaron Adams

Sampler's Signature:

Laboratory: Xenco Laboratories
Address: 6701 Aberdeen Avenue, Suite 9, Lubbock, TX 79424
Phone: (806) 794-1296
Contact:
PO/SO #:

Project Number: AR197009

Project Name: DCP Plant to Lea Station 6" Sec. 31 (SRS # 2009-084)

ANALYSIS REQUESTED: 615446

LAB USE ONLY
DUE DATE:

TEMP OF COOLER WHEN RECEIVED (°C): IR 3.4

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No. Type of Containers: 40 ml VOA	BTEX (EPA Method 8021B)	Lab Sample ID
GW	02/21/19	1404		X	MW-2			X	2	001
GW	02/21/19	1347		X	MW-3			X	2	002
GW	02/21/19	1430		X	MW-4			X	2	003
GW	02/21/19	1437		X	MW-5			X	2	004
GW	02/21/19	1521		X	MW-6			X	2	005
GW	02/21/19	1442		X	DUP-1			X	2	006
					**********END OF COC**********					

TURNAROUND TIME: ☑ Normal ☐ 48-Hour Rush ☐ 24-Hour Rush

TRRP Laboratory Review Checklist ☐ Yes ☐ No

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
	2-22-19	9:00am		2/22/19	9:00

NOTES:

E-MAIL RESULTS TO:
1. CJBRYANT@PAALP.COM
2. ALGROVES@PAALP.COM
3. JOHN.FERGERSON@TERRACON.COM
4. ERIN.LOYD@TERRACON.COM
5. AARON.ADAMS@TERRACON.COM
6. KATHRASH@TERRACON.COM

Matrix: WW-Wastewater; W - Water; S - Soil; L - Liquid; A - Air Bag; C - Charcoal tube; SL - Sludge
Container: VOA - 40 ml vial; A/G - Amber Glass 1L; 250 ml = Glass wide mouth; P/O - Plastic or other _____

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 02/22/2019 09:00:00 AM

Work Order #: 615446

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R3

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Ashley Derstine Date: 02/22/2019

Checklist reviewed by: Jessica Kramer Date: 02/26/2019

Jessica Kramer

Analytical Report 625491

for

Terracon-Lubbock

Project Manager: John Fergerson

DCP Plant to Lea Station

AR197009

29-MAY-19

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

Table of Contents

29-MAY-19

Project Manager: **John Fergerson**
Terracon-Lubbock
5827 50th st, Suite 1
Lubbock, TX 79424

Reference: XENCO Report No(s): **625491**
DCP Plant to Lea Station
Project Address: 6" Sec 31

John Fergerson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 625491. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 625491 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 625491

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Station

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW #2	W	05-23-19 08:25		625491-001
MW #3	W	05-23-19 09:11		625491-002
MW #4	W	05-23-19 09:58		625491-003
MW #5	W	05-23-19 11:38		625491-004
MW #6	W	05-23-19 10:47		625491-005
DUP-1	W	05-23-19 11:43		625491-006

CASE NARRATIVE

Client Name: Terracon-Lubbock

Project Name: DCP Plant to Lea Station

Project ID: *AR197009*
Work Order Number(s): *625491*

Report Date: *29-MAY-19*
Date Received: *05/24/2019*

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. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results
625491
Terracon-Lubbock, Lubbock, TX
DCP Plant to Lea Station

Sample Id: **MW #2** Matrix: Ground Water Sample Depth:

Lab Sample Id: 625491-001 Date Collected: 05.23.19 08.25 Date Received: 05.24.19 17.15

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: RNL

Seq Number: 3090467 Date Prep: 05.24.19 16.03

Prep seq: 7678640

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	05.25.19 08:54	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	05.25.19 08:54	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	05.25.19 08:54	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	05.25.19 08:54	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	05.25.19 08:54	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	05.25.19 08:54	U	
Total BTEX		<0.000270		0.000270	mg/L	05.25.19 08:54	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	99	66 - 120	%		
4-Bromofluorobenzene	109	67 - 120	%		

Sample Id: **MW #3** Matrix: Ground Water Sample Depth:

Lab Sample Id: 625491-002 Date Collected: 05.23.19 09.11 Date Received: 05.24.19 17.15

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: RNL

Seq Number: 3090293 Date Prep: 05.24.19 16.03

Prep seq: 7678638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	05.24.19 23:38	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	05.24.19 23:38	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	05.24.19 23:38	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	05.24.19 23:38	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	05.24.19 23:38	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	05.24.19 23:38	U	
Total BTEX		<0.000270		0.000270	mg/L	05.24.19 23:38	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	96	66 - 120	%		
4-Bromofluorobenzene	97	67 - 120	%		

Certificate of Analytical Results
625491
Terracon-Lubbock, Lubbock, TX
DCP Plant to Lea Station

Sample Id: **MW #4** Matrix: Ground Water Sample Depth:

Lab Sample Id: 625491-003 Date Collected: 05.23.19 09.58 Date Received: 05.24.19 17.15

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: RNL

Seq Number: 3090293 Date Prep: 05.24.19 16.03

Prep seq: 7678638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	05.25.19 00:02	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	05.25.19 00:02	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	05.25.19 00:02	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	05.25.19 00:02	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	05.25.19 00:02	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	05.25.19 00:02	U	
Total BTEX		<0.000270		0.000270	mg/L	05.25.19 00:02	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	101	66 - 120	%		
4-Bromofluorobenzene	111	67 - 120	%		

Sample Id: **MW #5** Matrix: Ground Water Sample Depth:

Lab Sample Id: 625491-004 Date Collected: 05.23.19 11.38 Date Received: 05.24.19 17.15

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: RNL

Seq Number: 3090293 Date Prep: 05.24.19 16.03

Prep seq: 7678638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	05.25.19 01:39	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	05.25.19 01:39	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	05.25.19 01:39	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	05.25.19 01:39	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	05.25.19 01:39	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	05.25.19 01:39	U	
Total BTEX		<0.000270		0.000270	mg/L	05.25.19 01:39	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	94	66 - 120	%		
4-Bromofluorobenzene	98	67 - 120	%		

Certificate of Analytical Results
625491
Terracon-Lubbock, Lubbock, TX
DCP Plant to Lea Station

Sample Id: **MW #6** Matrix: Ground Water Sample Depth:

Lab Sample Id: 625491-005 Date Collected: 05.23.19 10.47 Date Received: 05.24.19 17.15

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: RNL

Seq Number: 3090293 Date Prep: 05.24.19 16.03

Prep seq: 7678638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	05.25.19 02:03	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	05.25.19 02:03	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	05.25.19 02:03	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	05.25.19 02:03	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	05.25.19 02:03	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	05.25.19 02:03	U	
Total BTEX		<0.000270		0.000270	mg/L	05.25.19 02:03	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	97	66 - 120	%		
4-Bromofluorobenzene	100	67 - 120	%		

Sample Id: **DUP-1** Matrix: Ground Water Sample Depth:

Lab Sample Id: 625491-006 Date Collected: 05.23.19 11.43 Date Received: 05.24.19 17.15

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: RNL

Seq Number: 3090293 Date Prep: 05.24.19 16.03

Prep seq: 7678638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	05.25.19 02:27	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	05.25.19 02:27	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	05.25.19 02:27	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	05.25.19 02:27	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	05.25.19 02:27	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	05.25.19 02:27	U	
Total BTEX		<0.000270		0.000270	mg/L	05.25.19 02:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	93	66 - 120	%		
4-Bromofluorobenzene	94	67 - 120	%		

Certificate of Analytical Results
625491
Terracon-Lubbock, Lubbock, TX
DCP Plant to Lea Station

Sample Id: **7678638-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 7678638-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: RNL

Seq Number: 3090293 Date Prep: 05.24.19 16.03

Prep seq: 7678638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	05.24.19 18:46	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	05.24.19 18:46	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	05.24.19 18:46	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	05.24.19 18:46	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	05.24.19 18:46	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	05.24.19 18:46	U	
Total BTEX		<0.000270		0.000270	mg/L	05.24.19 18:46	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	100	66 - 120	%		
4-Bromofluorobenzene	104	67 - 120	%		

Sample Id: **7678640-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 7678640-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: RNL

Seq Number: 3090467 Date Prep: 05.24.19 16.03

Prep seq: 7678640

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	05.25.19 08:30	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	05.25.19 08:30	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	05.25.19 08:30	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	05.25.19 08:30	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	05.25.19 08:30	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	05.25.19 08:30	U	
Total BTEX		<0.000270		0.000270	mg/L	05.25.19 08:30	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	94	66 - 120	%		
4-Bromofluorobenzene	97	67 - 120	%		

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station

Work Orders : 625491, **Project ID:** AR197009

Lab Batch #: 3090293 **Sample:** 7678638-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/24/19 17:08

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0985	0.100	99	66-120	
4-Bromofluorobenzene	0.0939	0.100	94	67-120	

Lab Batch #: 3090293 **Sample:** 7678638-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/24/19 17:33

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0987	0.100	99	66-120	
4-Bromofluorobenzene	0.0945	0.100	95	67-120	

Lab Batch #: 3090293 **Sample:** 7678638-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/24/19 18:46

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0999	0.100	100	66-120	
4-Bromofluorobenzene	0.104	0.100	104	67-120	

Lab Batch #: 3090293 **Sample:** 625479-001 S / MS **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 05/24/19 20:22

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0966	0.100	97	66-120	
4-Bromofluorobenzene	0.0918	0.100	92	67-120	

Lab Batch #: 3090293 **Sample:** 625479-001 SD / MSD **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 05/24/19 20:47

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0935	0.100	94	66-120	
4-Bromofluorobenzene	0.0923	0.100	92	67-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station

Work Orders : 625491, **Project ID:** AR197009

Lab Batch #: 3090467 **Sample:** 7678640-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/25/19 06:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0994	0.100	99	66-120	
4-Bromofluorobenzene	0.105	0.100	105	67-120	

Lab Batch #: 3090467 **Sample:** 7678640-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/25/19 08:30

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0940	0.100	94	66-120	
4-Bromofluorobenzene	0.0966	0.100	97	67-120	

Lab Batch #: 3090467 **Sample:** 625491-001 S / MS **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 05/25/19 09:18

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.101	0.100	101	66-120	
4-Bromofluorobenzene	0.107	0.100	107	67-120	

Lab Batch #: 3090467 **Sample:** 625491-001 SD / MSD **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 05/25/19 09:42

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0989	0.100	99	66-120	
4-Bromofluorobenzene	0.104	0.100	104	67-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Blank Spike Recovery

Project Name: DCP Plant to Lea Station

Work Order #: 625491 **Project ID:** AR197009

Lab Batch #: 3090467 **Sample:** 7678640-1-BKS **Matrix:** Water

Date Analyzed: 05/25/2019 **Date Prepared:** 05/24/2019 **Analyst:** MIT

Reporting Units: mg/L **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

BTEX by EPA 8021B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.000480	0.100	0.102	102	74-120	
Toluene	<0.000512	0.100	0.102	102	74-120	
Ethylbenzene	<0.000616	0.100	0.108	108	74-120	
m,p-Xylenes	<0.000454	0.200	0.215	108	73-120	
o-Xylene	<0.000270	0.100	0.108	108	73-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: DCP Plant to Lea Station

Work Order #: 625491 **Project ID:** AR197009

Analyst: MIT **Date Prepared:** 05/24/2019 **Date Analyzed:** 05/24/2019

Lab Batch ID: 3090293 **Sample:** 7678638-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000480	0.100	0.0980	98	0.100	0.0970	97	1	74-120	20	
Toluene	<0.000512	0.100	0.0960	96	0.100	0.0963	96	0	74-120	20	
Ethylbenzene	<0.000616	0.100	0.0980	98	0.100	0.0977	98	0	74-120	20	
m,p-Xylenes	<0.000454	0.200	0.201	101	0.200	0.200	100	0	73-120	25	
o-Xylene	<0.000270	0.100	0.104	104	0.100	0.104	104	0	73-120	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: DCP Plant to Lea Station

Work Order # : 625491 **Project ID:** AR197009

Lab Batch ID: 3090293 **QC- Sample ID:** 625479-001 S **Batch #:** 1 **Matrix:** Ground Water

Date Analyzed: 05/24/2019 **Date Prepared:** 05/24/2019 **Analyst:** MIT

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000480	0.100	0.0989	99	0.100	0.0973	97	2	15-147	25	
Toluene	<0.000512	0.100	0.0966	97	0.100	0.0971	97	1	11-147	25	
Ethylbenzene	<0.000616	0.100	0.0967	97	0.100	0.0996	100	3	10-149	25	
m,p-Xylenes	<0.000454	0.200	0.199	100	0.200	0.206	103	3	62-124	25	
o-Xylene	<0.000270	0.100	0.104	104	0.100	0.106	106	2	62-124	25	

Lab Batch ID: 3090467 **QC- Sample ID:** 625491-001 S **Batch #:** 1 **Matrix:** Ground Water

Date Analyzed: 05/25/2019 **Date Prepared:** 05/24/2019 **Analyst:** MIT

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000480	0.100	0.105	105	0.100	0.104	104	1	15-147	25	
Toluene	<0.000512	0.100	0.105	105	0.100	0.104	104	1	11-147	25	
Ethylbenzene	<0.000616	0.100	0.108	108	0.100	0.109	109	1	10-149	25	
m,p-Xylenes	<0.000454	0.200	0.215	108	0.200	0.217	109	1	62-124	25	
o-Xylene	<0.000270	0.100	0.108	108	0.100	0.110	110	2	62-124	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

625491

625491

Terracon

CHAIN OF CUSTODY RECORD

Laboratory: Xenco
Address: 6701 Aberdeen
Lubbock, Texas 79424

Office Location: Lubbock
Project Manager: John Fergerson
Sampler's Name: Aaron Adams

Phone:
Contact: John Fergerson
PO/SO #:
Sampler's Signature: Aaron Adams

Project Number: AR197009
Project Name: DCP Plant to Lea Station 6" Sec. 31 (SRS # 2009-084)

ANALYSIS REQUESTED: BTEX (EPA Method 8021B)

LAB USE ONLY
DUE DATE:

TEMP OF COOLER WHEN RECEIVED (°C)

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No. Type of Containers: 40 ml VOA	BTEX (EPA Method 8021B)	Lab Sample ID
GW	5/23/2019	8:25		X	MW #2			3	X	1
GW	5/23/2019	9:11		X	MW #3			3	X	2
GW	5/23/2019	9:58		X	MW #4			3	X	3
GW	5/23/2019	11:38		X	MW #5			3	X	4
GW	5/23/2019	10:47		X	MW #6			3	X	5
GW	5/23/2019	11:43		X	DUP-1			3	X	6

TURNAROUND TIME: [X] Normal [ ] 48-Hour Rush [ ] 24-Hour Rush

TRRP Laboratory Review Checklist [ ] Yes [ ] No

Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Aaron Adams	5-23-19	17:15	Brenda Ward	5/23/19	17:15

NOTES:

e-mail results to:
john.fergerson@terracon.com
erin.loyd@terracon.com
aaron.adams@terracon.com

4.0 / 3.9

Matrix: WW-Wastewater; W - Water; S - Soil; L - Liquid; A - Air Bag; C - Charcoal tube; SL - Sludge
Container: VOA - 40 ml vial; A/G - Amber Glass 1L; 250 ml = Glass wide mouth; P/O - Plastic or other _____

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 05/24/2019 05:15:00 PM

Work Order #: 625491

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-3

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.9
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Brenda Ward Date: 05/24/2019
Brenda Ward

Checklist reviewed by: Jessica Kramer Date: 05/28/2019
Jessica Kramer

Analytical Report 636293

for

Terracon-Lubbock

Project Manager: Paige Gaona

DCP Plant to Lea Station 6'' Sec 31

AR1970009

11-SEP-19

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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11-SEP-19

Project Manager: **Paige Gaona**
Terracon-Lubbock
5827 50th st, Suite 1
Lubbock, TX 79424

Reference: XENCO Report No(s): **636293**
DCP Plant to Lea Station 6'' Sec 31
Project Address: SRS #2009-084

Paige Gaona:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 636293. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 636293 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 636293

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Station 6" Sec 31

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	09-06-19 11:00		636293-001
MW-6	W	09-06-19 11:47		636293-002
MW-4	W	09-06-19 12:25		636293-003
MW-3	W	09-06-19 13:25		636293-004
MW-5	W	09-06-19 14:05		636293-005
DUP-1	W	09-06-19 14:10		636293-006

CASE NARRATIVE

Client Name: Terracon-Lubbock

Project Name: DCP Plant to Lea Station 6'' Sec 31

Project ID: *AR1970009*
Work Order Number(s): *636293*

Report Date: *11-SEP-19*
Date Received: *09/06/2019*

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. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

MS/MSD outside normal ranges due to prep error. The LCS/LCSD are within acceptable limits: therefore the data was accepted.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3100941 BTEX by EPA 8021B
MS/MSD outside normal ranges due to prep error. The LCS/LCSD are within acceptable limits: therefore the data was accepted.

Certificate of Analytical Results
636293
Terracon-Lubbock, Lubbock, TX
DCP Plant to Lea Station 6" Sec 31

Sample Id: **MW-2** Matrix: Water Sample Depth:

Lab Sample Id: 636293-001 Date Collected: 09.06.19 11.00 Date Received: 09.06.19 18.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3100941 Date Prep: 09.09.19 14.00

Prep seq: 7685853

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	09.09.19 21:55	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	09.09.19 21:55	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	09.09.19 21:55	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	09.09.19 21:55	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	09.09.19 21:55	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	09.09.19 21:55	U	
Total BTEX		<0.000270		0.000270	mg/L	09.09.19 21:55	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	100	66 - 120	%		
4-Bromofluorobenzene	100	67 - 120	%		

Sample Id: **MW-6** Matrix: Water Sample Depth:

Lab Sample Id: 636293-002 Date Collected: 09.06.19 11.47 Date Received: 09.06.19 18.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3100941 Date Prep: 09.09.19 14.00

Prep seq: 7685853

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	09.09.19 22:19	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	09.09.19 22:19	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	09.09.19 22:19	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	09.09.19 22:19	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	09.09.19 22:19	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	09.09.19 22:19	U	
Total BTEX		<0.000270		0.000270	mg/L	09.09.19 22:19	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	98	66 - 120	%		
4-Bromofluorobenzene	99	67 - 120	%		

Certificate of Analytical Results
636293

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Station 6" Sec 31

Sample Id: **MW-4** Matrix: Water Sample Depth:

Lab Sample Id: 636293-003 Date Collected: 09.06.19 12.25 Date Received: 09.06.19 18.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3100941 Date Prep: 09.09.19 14.00

Prep seq: 7685853

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	09.09.19 22:44	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	09.09.19 22:44	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	09.09.19 22:44	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	09.09.19 22:44	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	09.09.19 22:44	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	09.09.19 22:44	U	
Total BTEX		<0.000270		0.000270	mg/L	09.09.19 22:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	102	66 - 120	%		
4-Bromofluorobenzene	104	67 - 120	%		

Sample Id: **MW-3** Matrix: Water Sample Depth:

Lab Sample Id: 636293-004 Date Collected: 09.06.19 13.25 Date Received: 09.06.19 18.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3100941 Date Prep: 09.09.19 14.00

Prep seq: 7685853

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	09.09.19 23:08	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	09.09.19 23:08	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	09.09.19 23:08	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	09.09.19 23:08	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	09.09.19 23:08	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	09.09.19 23:08	U	
Total BTEX		<0.000270		0.000270	mg/L	09.09.19 23:08	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	103	66 - 120	%		
4-Bromofluorobenzene	107	67 - 120	%		

Certificate of Analytical Results
636293
Terracon-Lubbock, Lubbock, TX
DCP Plant to Lea Station 6" Sec 31

Sample Id: **MW-5** Matrix: Water Sample Depth:

Lab Sample Id: 636293-005 Date Collected: 09.06.19 14.05 Date Received: 09.06.19 18.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3100941 Date Prep: 09.09.19 14.00

Prep seq: 7685853

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	09.09.19 23:32	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	09.09.19 23:32	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	09.09.19 23:32	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	09.09.19 23:32	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	09.09.19 23:32	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	09.09.19 23:32	U	
Total BTEX		<0.000270		0.000270	mg/L	09.09.19 23:32	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	99	66 - 120	%		
4-Bromofluorobenzene	97	67 - 120	%		

Sample Id: **DUP-1** Matrix: Water Sample Depth:

Lab Sample Id: 636293-006 Date Collected: 09.06.19 14.10 Date Received: 09.06.19 18.00

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3100941 Date Prep: 09.09.19 14.00

Prep seq: 7685853

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	09.10.19 01:08	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	09.10.19 01:08	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	09.10.19 01:08	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	09.10.19 01:08	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	09.10.19 01:08	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	09.10.19 01:08	U	
Total BTEX		<0.000270		0.000270	mg/L	09.10.19 01:08	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	99	66 - 120	%		
4-Bromofluorobenzene	102	67 - 120	%		

Certificate of Analytical Results
636293

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Station 6" Sec 31

Sample Id: **7685853-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 7685853-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3100941 Date Prep: 09.09.19 14.00

Prep seq: 7685853

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	09.09.19 18:18	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	09.09.19 18:18	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	09.09.19 18:18	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	09.09.19 18:18	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	09.09.19 18:18	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	09.09.19 18:18	U	
Total BTEX		<0.000270		0.000270	mg/L	09.09.19 18:18	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	96	66 - 120	%		
4-Bromofluorobenzene	98	67 - 120	%		

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6'' Sec 31

Work Orders : 636293, **Project ID:** AR1970009

Lab Batch #: 3100941 **Sample:** 7685853-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/09/19 16:41

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0962	0.100	96	66-120	
4-Bromofluorobenzene	0.0928	0.100	93	67-120	

Lab Batch #: 3100941 **Sample:** 7685853-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/09/19 17:06

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.100	0.100	100	66-120	
4-Bromofluorobenzene	0.0955	0.100	96	67-120	

Lab Batch #: 3100941 **Sample:** 7685853-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/09/19 18:18

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0960	0.100	96	66-120	
4-Bromofluorobenzene	0.0984	0.100	98	67-120	

Lab Batch #: 3100941 **Sample:** 636015-001 S / MS **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 09/09/19 19:06

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.481	0.500	96	66-120	
4-Bromofluorobenzene	0.0969	0.100	97	67-120	

Lab Batch #: 3100941 **Sample:** 636015-001 SD / MSD **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 09/09/19 19:30

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.481	0.500	96	66-120	
4-Bromofluorobenzene	0.0988	0.100	99	67-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: DCP Plant to Lea Station 6'' Sec 31

Work Order #: 636293 **Project ID:** AR1970009

Analyst: MIT **Date Prepared:** 09/09/2019 **Date Analyzed:** 09/09/2019

Lab Batch ID: 3100941 **Sample:** 7685853-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000480	0.100	0.0955	96	0.100	0.0945	95	1	74-120	20	
Toluene	<0.000512	0.100	0.0957	96	0.100	0.0932	93	3	74-120	20	
Ethylbenzene	<0.000616	0.100	0.0999	100	0.100	0.0997	100	0	74-120	20	
m,p-Xylenes	<0.000454	0.200	0.202	101	0.200	0.194	97	4	73-120	25	
o-Xylene	<0.000270	0.100	0.102	102	0.100	0.0982	98	4	73-120	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: DCP Plant to Lea Station 6'' Sec 31

Work Order # : 636293 **Project ID:** AR1970009

Lab Batch ID: 3100941 **QC- Sample ID:** 636015-001 S **Batch #:** 1 **Matrix:** Ground Water

Date Analyzed: 09/09/2019 **Date Prepared:** 09/09/2019 **Analyst:** MIT

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00240	0.500	<0.00240	0	0.500	<0.00240	0	NC	15-147	25	X
Toluene	<0.00256	0.500	<0.00256	0	0.500	<0.00256	0	NC	11-147	25	X
Ethylbenzene	<0.00308	0.500	<0.00308	0	0.500	<0.00308	0	NC	10-149	25	X
m,p-Xylenes	<0.00227	1.00	<0.00227	0	1.00	<0.00227	0	NC	62-124	25	X
o-Xylene	<0.00135	0.500	<0.00135	0	0.500	<0.00135	0	NC	62-124	25	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

636293

636293

Terracon

CHAIN OF CUSTODY RECORD

Laboratory: Xenco Laboratories
Address: 6701 Aberdeen Avenue, Suite 9
Lubbock, TX 79424

Phone: (806) 794-1296
Contact:
PO/SO #:

Office Location: Lubbock
Project Manager: Paige Gaona
Sampler's Name: Aaron Adams
Sampler's Signature: Aaron Adams

Project Number: AR197009
Project Name: DCP Plant to Lea Station 6" Sec. 31 (SRS # 2009-084)

ANALYSIS REQUESTED

LAB USE ONLY
DUE DATE:
TEMP OF COOLER WHEN RECEIVED (°C): 1.2 / 1.3 ~~FR 3~~

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No. Type of Containers: 40 ml VOA	BTEX (EPA Method 8021B)	Lab Sample ID
GW	09/06/19	1100		X	MW-2			X	3	1
GW	09/06/19	1147		X	MW-6			X	3	2
GW	09/06/19	1225		X	MW-4			X	3	3
GW	09/06/19	1325		X	MW-3			X	3	4
GW	09/06/19	1405		X	MW-5			X	3	5
GW	09/06/19	1410		X	DUP-1			X	3	6
					**********END OF COC**********					

TURNAROUND TIME: ☒ Normal ☐ 48-Hour Rush ☐ 24-Hour Rush

TRRP Laboratory Review Checklist ☐ Yes ☐ No

Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature) Aaron Adams	Date: 9/6/19	Time: 18:00	Received by (Signature) Brenda Ward	Date: 9/6/19	Time: 18:00

NOTES:

E-MAIL RESULTS TO:
1. CJBRYANT@PAALP.COM
2. ALGROVES@PAALP.COM
3. PAIGE.GAONA@TERRACON.COM
4. ERIN.LOYD@TERRACON.COM
5. AARON.ADAMS@TERRACON.COM
6. KATHRASH@TERRACON.COM

Matrix: WW-Wastewater; W - Water; S - Soil; L - Liquid; A - Air Bag; C - Charcoal tube; SL - Sludge
Container: VOA - 40 ml vial; A/G - Amber Glass 1L; 250 ml = Glass wide mouth; P/O - Plastic or other _____

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 09/06/2019 06:00:00 PM

Work Order #: 636293

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-3

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.3
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Brenda Ward Date: 09/09/2019
Brenda Ward

Checklist reviewed by: Jessica Kramer Date: 09/10/2019
Jessica Kramer

Analytical Report 643092

for

Terracon-Lubbock

Project Manager: Paige Gaona

DCP Plant to Lea Sta. 6" Sec. 31(SRS#2009-084)

AR197009

19-NOV-19

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

Table of Contents

19-NOV-19

Project Manager: **Paige Gaona**
Terracon-Lubbock
5827 50th st, Suite 1
Lubbock, TX 79424

Reference: XENCO Report No(s): **643092**
DCP Plant to Lea Sta. 6" Sec. 31(SRS#2009-084)
Project Address:

Paige Gaona:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 643092. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 643092 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 643092

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Sta. 6" Sec. 31(SRS#2009-084)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW#2	W	11-12-19 12:40		643092-001
MW#6	W	11-12-19 13:36		643092-002
MW#4	W	11-12-19 14:25		643092-003
MW#3	W	11-12-19 15:10		643092-004
MW#5	W	11-12-19 16:02		643092-005
DUP-1	W	11-12-19 16:07		643092-006

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. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results
643092

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Sta. 6" Sec. 31(SRS#2009-084)

Sample Id: **MW#2** Matrix: Water Sample Depth:

Lab Sample Id: 643092-001 Date Collected: 11.12.19 12.40 Date Received: 11.13.19 15.35

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: KRP % Moist: Tech: KRP

Seq Number: 3107644 Date Prep: 11.15.19 09.40

Subcontractor: SUB: T104704215-19-30 Prep seq: 7690465

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000214	0.00100	0.000214	mg/L	11.15.19 12:21	U	1
Toluene	108-88-3	<0.000500	0.00100	0.000500	mg/L	11.15.19 12:21	U	1
Ethylbenzene	100-41-4	<0.000146	0.00100	0.000146	mg/L	11.15.19 12:21	U	1
m,p-Xylenes	179601-23-1	<0.000330	0.0100	0.000330	mg/L	11.15.19 12:21	U	1
o-Xylene	95-47-6	<0.000192	0.00100	0.000192	mg/L	11.15.19 12:21	U	1
Total Xylenes	1330-20-7	<0.000192		0.000192	mg/L	11.15.19 12:21	U	
Total BTEX		<0.000146		0.000146	mg/L	11.15.19 12:21	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	90	75 - 131	%		
1,2-Dichloroethane-D4	103	63 - 144	%		
Toluene-D8	104	80 - 117	%		

Sample Id: **MW#6** Matrix: Water Sample Depth:

Lab Sample Id: 643092-002 Date Collected: 11.12.19 13.36 Date Received: 11.13.19 15.35

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: KRP % Moist: Tech: KRP

Seq Number: 3107644 Date Prep: 11.15.19 09.40

Subcontractor: SUB: T104704215-19-30 Prep seq: 7690465

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000214	0.00100	0.000214	mg/L	11.15.19 12:39	U	1
Toluene	108-88-3	<0.000500	0.00100	0.000500	mg/L	11.15.19 12:39	U	1
Ethylbenzene	100-41-4	<0.000146	0.00100	0.000146	mg/L	11.15.19 12:39	U	1
m,p-Xylenes	179601-23-1	<0.000330	0.0100	0.000330	mg/L	11.15.19 12:39	U	1
o-Xylene	95-47-6	<0.000192	0.00100	0.000192	mg/L	11.15.19 12:39	U	1
Total Xylenes	1330-20-7	<0.000192		0.000192	mg/L	11.15.19 12:39	U	
Total BTEX		<0.000146		0.000146	mg/L	11.15.19 12:39	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	86	75 - 131	%		
1,2-Dichloroethane-D4	83	63 - 144	%		
Toluene-D8	107	80 - 117	%		

Certificate of Analytical Results
643092

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Sta. 6" Sec. 31(SRS#2009-084)

Sample Id: **MW#4** Matrix: Water Sample Depth:

Lab Sample Id: 643092-003 Date Collected: 11.12.19 14.25 Date Received: 11.13.19 15.35

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: KRP % Moist: Tech: KRP

Seq Number: 3107644 Date Prep: 11.15.19 09.40

Subcontractor: SUB: T104704215-19-30 Prep seq: 7690465

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000214	0.00100	0.000214	mg/L	11.15.19 12:57	U	1
Toluene	108-88-3	<0.000500	0.00100	0.000500	mg/L	11.15.19 12:57	U	1
Ethylbenzene	100-41-4	<0.000146	0.00100	0.000146	mg/L	11.15.19 12:57	U	1
m,p-Xylenes	179601-23-1	<0.000330	0.0100	0.000330	mg/L	11.15.19 12:57	U	1
o-Xylene	95-47-6	<0.000192	0.00100	0.000192	mg/L	11.15.19 12:57	U	1
Total Xylenes	1330-20-7	<0.000192		0.000192	mg/L	11.15.19 12:57	U	
Total BTEX		<0.000146		0.000146	mg/L	11.15.19 12:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	86	75 - 131	%		
1,2-Dichloroethane-D4	95	63 - 144	%		
Toluene-D8	114	80 - 117	%		

Sample Id: **MW#3** Matrix: Water Sample Depth:

Lab Sample Id: 643092-004 Date Collected: 11.12.19 15.10 Date Received: 11.13.19 15.35

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: KRP % Moist: Tech: KRP

Seq Number: 3107644 Date Prep: 11.15.19 09.40

Subcontractor: SUB: T104704215-19-30 Prep seq: 7690465

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000214	0.00100	0.000214	mg/L	11.15.19 13:15	U	1
Toluene	108-88-3	<0.000500	0.00100	0.000500	mg/L	11.15.19 13:15	U	1
Ethylbenzene	100-41-4	<0.000146	0.00100	0.000146	mg/L	11.15.19 13:15	U	1
m,p-Xylenes	179601-23-1	<0.000330	0.0100	0.000330	mg/L	11.15.19 13:15	U	1
o-Xylene	95-47-6	<0.000192	0.00100	0.000192	mg/L	11.15.19 13:15	U	1
Total Xylenes	1330-20-7	<0.000192		0.000192	mg/L	11.15.19 13:15	U	
Total BTEX		<0.000146		0.000146	mg/L	11.15.19 13:15	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	85	75 - 131	%		
1,2-Dichloroethane-D4	83	63 - 144	%		
Toluene-D8	107	80 - 117	%		

Certificate of Analytical Results
643092

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Sta. 6" Sec. 31(SRS#2009-084)

Sample Id: **MW#5** Matrix: Water Sample Depth:

Lab Sample Id: 643092-005 Date Collected: 11.12.19 16.02 Date Received: 11.13.19 15.35

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: KRP % Moist: Tech: KRP

Seq Number: 3107644 Date Prep: 11.15.19 09.40

Subcontractor: SUB: T104704215-19-30 Prep seq: 7690465

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000214	0.00100	0.000214	mg/L	11.15.19 13:33	U	1
Toluene	108-88-3	<0.000500	0.00100	0.000500	mg/L	11.15.19 13:33	U	1
Ethylbenzene	100-41-4	<0.000146	0.00100	0.000146	mg/L	11.15.19 13:33	U	1
m,p-Xylenes	179601-23-1	<0.000330	0.0100	0.000330	mg/L	11.15.19 13:33	U	1
o-Xylene	95-47-6	<0.000192	0.00100	0.000192	mg/L	11.15.19 13:33	U	1
Total Xylenes	1330-20-7	<0.000192		0.000192	mg/L	11.15.19 13:33	U	
Total BTEX		<0.000146		0.000146	mg/L	11.15.19 13:33	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	85	75 - 131	%		
1,2-Dichloroethane-D4	98	63 - 144	%		
Toluene-D8	109	80 - 117	%		

Sample Id: **DUP-1** Matrix: Water Sample Depth:

Lab Sample Id: 643092-006 Date Collected: 11.12.19 16.07 Date Received: 11.13.19 15.35

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: KRP % Moist: Tech: KRP

Seq Number: 3107644 Date Prep: 11.15.19 09.40

Subcontractor: SUB: T104704215-19-30 Prep seq: 7690465

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000214	0.00100	0.000214	mg/L	11.15.19 13:51	U	1
Toluene	108-88-3	<0.000500	0.00100	0.000500	mg/L	11.15.19 13:51	U	1
Ethylbenzene	100-41-4	<0.000146	0.00100	0.000146	mg/L	11.15.19 13:51	U	1
m,p-Xylenes	179601-23-1	<0.000330	0.0100	0.000330	mg/L	11.15.19 13:51	U	1
o-Xylene	95-47-6	<0.000192	0.00100	0.000192	mg/L	11.15.19 13:51	U	1
Total Xylenes	1330-20-7	<0.000192		0.000192	mg/L	11.15.19 13:51	U	
Total BTEX		<0.000146		0.000146	mg/L	11.15.19 13:51	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	83	75 - 131	%		
1,2-Dichloroethane-D4	100	63 - 144	%		
Toluene-D8	111	80 - 117	%		

Certificate of Analytical Results
643092

Terracon-Lubbock, Lubbock, TX

DCP Plant to Lea Sta. 6" Sec. 31(SRS#2009-084)

Sample Id:	**7690465-1-BLK**	Matrix:	Water	Sample Depth:	
Lab Sample Id:	7690465-1-BLK	Date Collected:		Date Received:	
Analytical Method:	BTEX by SW 8260C			Prep Method:	5030B
Analyst:	KRP	% Moist:		Tech:	KRP
Seq Number:	3107644	Date Prep:	11.15.19 09.40		
Subcontractor:	SUB: T104704215-19-30	Prep seq:	7690465		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000214	0.00100	0.000214	mg/L	11.15.19 11:27	U	1
Toluene	108-88-3	<0.000500	0.00100	0.000500	mg/L	11.15.19 11:27	U	1
Ethylbenzene	100-41-4	<0.000146	0.00100	0.000146	mg/L	11.15.19 11:27	U	1
m,p-Xylenes	179601-23-1	<0.000330	0.0100	0.000330	mg/L	11.15.19 11:27	U	1
o-Xylene	95-47-6	<0.000192	0.00100	0.000192	mg/L	11.15.19 11:27	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	93	75 - 131	%		
1,2-Dichloroethane-D4	93	63 - 144	%		
Toluene-D8	105	80 - 117	%		

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Sta. 6" Sec. 31(SRS#2009-084)

Work Orders : 643092, **Project ID:** AR197009

Lab Batch #: 3107644 **Sample:** 7690465-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/19 09:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0495	0.0500	99	75-131	
1,2-Dichloroethane-D4	0.0534	0.0500	107	63-144	
Toluene-D8	0.0468	0.0500	94	80-117	

Lab Batch #: 3107644 **Sample:** 7690465-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/19 10:17

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0495	0.0500	99	75-131	
1,2-Dichloroethane-D4	0.0469	0.0500	94	63-144	
Toluene-D8	0.0479	0.0500	96	80-117	

Lab Batch #: 3107644 **Sample:** 642981-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/19 10:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0541	0.0500	108	75-131	
1,2-Dichloroethane-D4	0.0541	0.0500	108	63-144	
Toluene-D8	0.0500	0.0500	100	80-117	

Lab Batch #: 3107644 **Sample:** 7690465-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/19 11:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0466	0.0500	93	75-131	
1,2-Dichloroethane-D4	0.0467	0.0500	93	63-144	
Toluene-D8	0.0526	0.0500	105	80-117	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: DCP Plant to Lea Sta. 6" Sec. 31(SRS#2009-084)

Work Order #: 643092 **Project ID:** AR197009

Analyst: KRP **Date Prepared:** 11/15/2019 **Date Analyzed:** 11/15/2019

Lab Batch ID: 3107644 **Sample:** 7690465-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000214	0.0500	0.0436	87	0.0500	0.0414	83	5	66-142	20	
Toluene	<0.000500	0.0500	0.0431	86	0.0500	0.0425	85	1	59-139	20	
Ethylbenzene	<0.000146	0.0500	0.0442	88	0.0500	0.0425	85	4	75-125	20	
m,p-Xylenes	<0.000330	0.100	0.0853	85	0.100	0.0821	82	4	75-125	20	
o-Xylene	<0.000192	0.0500	0.0454	91	0.0500	0.0441	88	3	75-125	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: DCP Plant to Lea Sta. 6" Sec. 31(SRS#2(

Work Order #: 643092

Lab Batch #: 3107644 **Project ID:** AR197009

Date Analyzed: 11/15/2019 **Date Prepared:** 11/15/2019 **Analyst:** KRP

QC- Sample ID: 642981-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

BTEX by SW 8260C Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	<0.000214	0.0500	0.0456	91	66-142	
Toluene	<0.000500	0.0500	0.0469	94	59-139	
Ethylbenzene	<0.000146	0.0500	0.0490	98	75-125	
m,p-Xylenes	<0.000330	0.100	0.0941	94	75-125	
o-Xylene	<0.000192	0.0500	0.0506	101	75-125	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

CHAIN OF CUSTODY RECORD 643092

Terracon

Laboratory: Xenco
Address: 6701 Aberdeen
Lubbock, Texas 79424

Office Location: Lubbock
Phone:
Project Manager: Paige Gaona
Contact: Paige Gaona
Sampler's Name: Aaron Adams
PO/SO #:
Sampler's Signature:

ANALYSIS REQUESTED

LAB USE ONLY
DUE DATE:
TEMP OF COOLER WHEN RECEIVED (°C): 1.4, 5.0

Project Number: AR197009
Project Name: DCP Plant to Lea Sta. 6" Sec. 31 (SRS#2009-084)

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No. Type of Containers: 40 ml VOA				BTEX (EPA Method 8260B)	Lab Sample ID
GW	11/12/2019	12:40		X	MW# 2			3				X	
GW	11/12/2019	13:36		X	MW# 6			3				X	
GW	11/12/2019	14:25		X	MW# 4			3				X	
GW	11/12/2019	15:10		X	MW# 3			3				X	
GW	11/12/2019	16:02		X	MW# 5			3				X	
GW	11/12/2019	16:07		X	DUP - 1			3				X	

TURNAROUND TIME: ☒ Normal ☐ 48-Hour Rush ☐ 24-Hour Rush

TRRP Laboratory Review Checklist ☐ Yes ☐ No

Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
	11-13-19	15:35		11/13/19	15:35
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:

NOTES:

e-mail results to:
paige.gaona@terracon.com
erin.loyd@terracon.com

Matrix: WW-Wastewater; W - Water; S - Soil; L - Liquid; A - Air Bag; C - Charcoal tube; SL - Sludge
Container: VOA - 40 ml vial; A/G - Amber Glass 1L; 250 ml = Glass wide mouth; P/O - Plastic or other _____

Inter-Office Shipment

IOS Number **52231**

Date/Time: 11/13/19 17:00
Lab# From: **Lubbock**
Lab# To: **Houston**

Created by: Ashley Derstine
Delivery Priority: Fedex
Air Bill No.:

Please send report to: Jessica Kramer
Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
643092-001	W	MW#2	11/12/19 12:40	SW8260CBTEX	BTEX by SW 8260C	11/19/19	11/26/19	JKR	BZ BZME EBZ XYLENES	
643092-002	W	MW#6	11/12/19 13:36	SW8260CBTEX	BTEX by SW 8260C	11/19/19	11/26/19	JKR	BZ BZME EBZ XYLENES	
643092-003	W	MW#4	11/12/19 14:25	SW8260CBTEX	BTEX by SW 8260C	11/19/19	11/26/19	JKR	BZ BZME EBZ XYLENES	
643092-004	W	MW#3	11/12/19 15:10	SW8260CBTEX	BTEX by SW 8260C	11/19/19	11/26/19	JKR	BZ BZME EBZ XYLENES	
643092-005	W	MW#5	11/12/19 16:02	SW8260CBTEX	BTEX by SW 8260C	11/19/19	11/26/19	JKR	BZ BZME EBZ XYLENES	
643092-006	W	DUP-1	11/12/19 16:07	SW8260CBTEX	BTEX by SW 8260C	11/19/19	11/26/19	JKR	BZ BZME EBZ XYLENES	

Inter Office Shipment or Sample Comments:

Relinquished By: Ashley Derstine

Date Relinquished: 11/13/2019

Received By:

Date Received:

Cooler Temperature:

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 52231

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : HOU-068

Sent By: Ashley Derstine **Date Sent:** 11.13.2019 05.00 PM

Received By: Ashly Kowalski **Date Received:** 11.14.2019 09.25 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.4	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 *Custody Seals Signed and dated for Containers/coolers	**N/A**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 11.14.2019

Ashly Kowalski

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 11/13/2019 03:35:00 PM

Work Order #: 643092

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R4

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Stafford
#18 Water VOC samples have zero headspace?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Ashley Derstine Date: 11/14/2019

Checklist reviewed by: Jessica Kramer Date: 11/15/2019

Jessica Kramer

APPENDIX D

Terracon Standard of Care, Limitation, and Reliance

Standard of Care

Terracon's services will be performed in a manner consistent with generally-accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed with you, our client, as set forth in our proposal and were not intended to be in strict conformance with ASTM E1903-11.

Additional Scope Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable or not present during these services, and we cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this confirmation sampling. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

Reliance

This report has been prepared for the exclusive use of Plains All American Pipeline LP; and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Plains All American Pipeline LP and Terracon. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the Master Services Agreement (026450-04810-PMLP.2.17), dated August 3, 2011, between Terracon and Plains All American Pipeline LP. The limitation of liability defined in the Terms and Conditions is the aggregate limit of Terracon's liability to the client and all relying parties unless otherwise agreed in writing.