

2014 ANNUAL GROUNDWATER MONITORING REPORT

**Livingston Ridge to Hugh - P. Sims
NE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 3, Township 21 South, Range 37 East
Plains Pipeline SRS Number 2001-11005
Lea County, New Mexico
NMOCD File Number 1R-0398**

Terracon Project Number A4157008 (Formerly A4077008)

March 20, 2015

Prepared for:

**Plains Pipeline, L.P.
2530 State Highway 214
Denver City, Texas 79323**

Prepared by:

Terracon

Midland, Texas

March 20, 2015

Plains Pipeline, L.P.
2530 State Highway 214
Denver City, Texas 79323
Attn: Mrs. Camille Bryant

Telephone: (806) 592-8305
Fax: (806) 592-7479

Re: 2014 Annual Groundwater Monitoring Report
Livingston Ridge to Hugh - P. Sims
NE ¼ of the SE ¼, Section 3, T21S, R37E
Lea County, New Mexico
NMOCD File Number 1R – 0398
Plains Pipeline, L.P. SRS Number 2001-11005
Terracon Project Number A4157008 (Formerly A4077008)

Dear Mrs. Bryant:

Terracon is pleased to submit four copies of the 2014 Annual Groundwater Monitoring Report for the above-referenced site.

We appreciate the opportunity to perform these services for Plains Pipeline, L.P. (Plains). Please contact either of the undersigned at (432) 684-9600 if you have questions regarding the information provided in the report.

Sincerely,
Terracon

Prepared by:


Dale Moxley
Project Manager

Reviewed by:

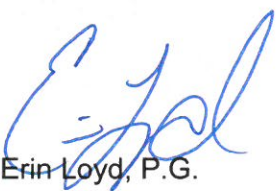

Erin Loyd, P.G.
Environmental Department Manager

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2014 Annual Groundwater Monitoring Report

**Livingston Ridge to Hugh - P. Sims Site
NE ¼ of the SE ¼ of Section 3, T21S, R37E
Plains SRS Number 2001-11005
Lea County, New Mexico
NMOCD File Number 1R – 0398**

Terracon Project Number A4157008 (Formerly A4077008)

1.0 INTRODUCTION

1.1 Site Description

Site Name	Livingston Ridge to Hugh - P. Sims
Site Location	Approximately 5 miles north-northeast of Eunice, Lea County, New Mexico on Loop 207.
General Site Description	Pipeline right-of-way surrounded by native pasture land, in close proximity of the former Carbon Black Plant.

A topographic map is included as Figure 1 and a site plan is included as Figure 2 of Appendix A.

On June 22, 2001, a release of six barrels of crude oil was reported to the New Mexico Oil Conservation District (NMOCD). Initial excavation activities were reportedly conducted by Environmental Plus, Inc. (EPI) in an effort to stockpile saturated soils and expose the leak origin in order to repair the pipeline. The pipeline excavation activities continued during July 2001. A total of approximately 148 cubic yards (cy) of hydrocarbon impacted soil were excavated at the site and transported to EPI's landfarm south of Eunice, New Mexico. A temporary groundwater monitoring well (TMW-1) was installed in the bottom of the excavation. Phase-separated hydrocarbons (PSH) were observed within the shallow groundwater bearing unit. Based on the review of provided documentation, the NMOCD and landowner were immediately notified of the release. EPI installed three groundwater monitoring wells at the site to evaluate the magnitude and extent of the release and determine the groundwater gradient.

Environmental Technology Group, Inc. (ETGI), assumed control of remedial activities in August 2002 and installed 12 additional groundwater monitor wells at the site. These wells were installed to complete the delineation activities initiated by EPI. At the time of ETGI's investigation, the groundwater monitor wells had adequately delineated the dissolved phase plume and PSH plume at the site.

Plains appointed EPI to take over the remediation and sampling activities in 2004. Terracon assumed consulting duties on February 1, 2007. Available files for this site were given to

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Livingston Ridge to Hugh P. Sims ■ **Lea County, New Mexico**

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Terracon at this time.

In July 2007, Terracon oversaw the installation of a PVC liner on the floor of the excavation and backfilling the excavation with remediated soils from the previous land treatment area at the site in accordance with the NMOCD approved work plan. Details of these activities can be found in Plains Soil Closure Compliance Report, dated August 17, 2007.

1.2 Scope of Work

Terracon's scope of work included assuming oversight of remedial activities on February 1, 2007. Oversight activities included the preparation of the 2006 through 2014 Annual Groundwater Monitoring Reports for submittal to the NMOCD on the behalf of Plains Pipeline, L.P. (Plains). In accordance with the approved scope of work, Terracon conducted quarterly groundwater monitoring and sampling events on February 20, 2014, April 16, 2014, July 08, 2014 and October 04, 2014. Micro-purging and the use of absorbant socks in select monitor wells were used to recover PSH. The events were performed at the Livingston Ridge to Hugh - P. Sims site located in Lea County, New Mexico.

The objective of the quarterly sampling events was to gauge the 15 on-site groundwater monitor wells (MW-1 through MW-15) and one temporary monitor well (TMW-1), located in the center of the former excavation, and to collect samples of groundwater from each well not containing PSH for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX, quarterly) and polycyclic aromatic hydrocarbons (PAHs, annually). Groundwater samples for PAH analysis were collected from monitoring wells MW-1, MW-4, and MW-5 on October 04, 2014.

1.3 Standard of Care

Terracon was awarded this project on February 1, 2007. Activities prior to this date were performed by previous consultants hired by Plains. Terracon makes no assumptions or warranties regarding the previous consultants services being 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.

1.4 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,

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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 remediation activities. 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.

1.5 Reliance

This report has been prepared for the exclusive use of Plains Pipeline, L. P., 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 Pipeline, L.P. 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 this report, and Terracon's Terms and Conditions. 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.

2.0 FIELD ACTIVITIES

2.1 Groundwater Monitoring and Sampling

Quarterly monitoring and sampling events were performed on February 20, April 16, July 08, and October 04, 2014, by Terracon. Figure 1 presents the general boundaries and topography of the site on portions of the USGS topographic quadrangle map of Hobbs Southwest, New Mexico (Appendix A). Figure 2 is a site plan that indicates the approximate locations of the monitor wells in relation to the pertinent features, structures and general site boundaries (Appendix A).

Monitoring wells were gauged to determine the depth to groundwater and to evaluate the presence of PSH. Based on the gauging data, measurable thicknesses of PSH were present in temporary monitor well TMW-1 (ranging in thickness from 0.17 to 2.60 feet) during 2014. Groundwater gradient maps for each quarter are included as Figures 3 through 6 (Appendix A). Groundwater and PSH gauging data are included in Appendix B, as Table 1.

Groundwater samples were collected and analyzed from 15 of the 16 of the groundwater monitor wells in accordance with the NMOC approved groundwater sampling plan. Groundwater samples were not collected from wells containing PSH or wells that were dry during sampling events in 2014. Prior to sample collection, each of these monitor wells were micro-purged until consistent values (i.e., less than 10% variance between consecutive

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readings) were obtained for pH, temperature and conductivity. Following purging, a groundwater sample was collected directly from dedicated polyethylene tubing attached to the downhole pump.

Groundwater samples were 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 Company in Odessa, Texas for analysis on a standard turnaround. The groundwater samples collected from the on-site monitor wells were analyzed for BTEX using EPA SW-846 Method 8021B in each of the four quarters and PAHs using EPA SW-846 Method 8270C in select locations in October 2014.

3.0 DATA EVALUATION

3.1 Water Level Data

Water level measurement data collected during the respective quarterly sampling events were used to construct groundwater gradient maps that are included as Figures 3 through 6 (Appendix A). Groundwater elevation contours generated from the quarterly sampling events of 2014 indicated the general groundwater gradient was consistent with previous sampling events:

- The gradient/direction during the February 2014 sampling event was 0.002 foot over foot (ft/ft) toward the southeast;
- The gradient/direction during the April 2014 sampling event was 0.0021 ft/ft toward the southeast;
- The gradient/direction during the July 2014 sampling event was 0.0019 ft/ft toward the southeast; and
- The gradient/direction during the October 2014 sampling event was 0.0086 ft/ft toward the northeast.

Groundwater flow direction was relatively consistent during 2014 with exception of the October 2014 gauging event. During this gauging event, the groundwater flow direction turned toward the northeast from the previously observed southeast direction. Water level measurement data is summarized in Table 1 in Appendix B.

Groundwater elevations in 2014 increased an average of approximately 2.89 feet in the on-site monitor wells. Monitor well MW-3, which had been dry (containing no fluids) since September 2011, had recharged again by the 4th quarter of 2014.

3.2 Groundwater Analysis Data

Laboratory results from the analysis of groundwater samples collected from the monitor wells are summarized in Tables 2 and 3 in Appendix B and presented as Figures 7 through 10 in Appendix A. The executed chain-of-custody forms and laboratory data sheets are provided in Appendix C.

1st Quarter 2014

Groundwater samples were collected and analyzed for BTEX constituents during the first quarter on February 20, 2014. The first quarter results are summarized below:

- Groundwater was not collected from monitor well MW-3, as the well was dry;
- Groundwater was not collected from monitor well TMW-1 due to either the presence of PSH;
- Benzene was not detected in the groundwater samples collected from monitor wells MW-2, MW-4, or MW-6 through MW-15 at concentrations exceeding applicable NMWQCC groundwater standards;
- Groundwater samples collected from MW-1 and MW-5 exhibited benzene concentrations of 0.0217 milligrams per liter (mg/L) and 0.0308 mg/L, respectively, which exceed the applicable NMWQCC groundwater standard of 0.01 mg/L for benzene; and
- Toluene, ethylbenzene and total xylene concentrations were not detected at concentrations above applicable NMWQCC groundwater standards in the groundwater samples collected at the site during the 1st Quarter 2014 Sampling Event.

2nd Quarter 2014

Groundwater samples were collected during the second quarter on April 16, 2014. The second quarter results are summarized below.

- Groundwater was not collected from monitor wells MW-3, as the well was dry;
- Groundwater was not collected from monitor well TMW-1 due to either the presence of PSH;

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- Benzene was not detected in the groundwater samples collected from monitor wells MW-2, MW-4, and MW-6 through MW-15 at concentrations exceeding the applicable NMWQCC groundwater standard;
- Groundwater samples collected from MW-1 and MW-5 exhibited benzene concentrations of 0.0375 mg/L and 0.0259 mg/L, respectively, which exceed the applicable NMWQCC groundwater standard of 0.01 mg/L for benzene; and
- Toluene, ethylbenzene and total xylene concentrations were not detected at concentrations above applicable NMWQCC groundwater standards in the groundwater samples collected at the site during the 2nd Quarter 2014 Sampling Event.

3rd Quarter 2014

Groundwater samples were collected during the third quarter on July 08, 2014. The third quarter results are summarized below:

- Groundwater was not collected from monitor well MW-3, as the well was dry;
- Groundwater was not collected from monitor wells TMW-1 due to the presence of PSH;
- Benzene was not detected in the groundwater samples collected from monitor wells MW-1, MW-2, and MW-5 through MW-15 at concentrations exceeding the applicable NMWQCC groundwater standard;
- Groundwater samples collected from MW-4 and MW-12 exhibited benzene concentrations of 0.0146 mg/L and 0.0200 mg/L, respectively, which exceed the applicable NMWQCC groundwater standard of 0.01 mg/L; and
- Toluene, ethylbenzene and total xylene concentrations were not detected at concentrations above applicable NMWQCC groundwater standards in the groundwater samples collected at the site during the 3rd Quarter 2014 Sampling Event.

4th Quarter 2014

Groundwater samples were collected and analyzed for BTEX and PAH constituents on October 04, 2014 during the fourth quarter. The fourth quarter results are summarized below.

- Groundwater was not collected from monitor well TMW-1 due to the presence of PSH;

- Benzene was not detected in the groundwater samples collected from monitor wells MW-1 through MW-4 and MW-6 through MW-15 at concentrations exceeding the applicable NMWQCC groundwater standard;
- The groundwater sample collected from MW-5 exhibited benzene concentrations of 0.0811 mg/L, which exceeds the NMWQCC groundwater standard of 0.01 mg/L; and
- Toluene, ethylbenzene and total xylene concentrations were not detected at concentrations above applicable NMWQCC groundwater standards in the groundwater samples collected at the site during the 4th Quarter 2014 Sampling Event;
- Groundwater from monitor wells MW-1, MW-4, and MW-5 was collected and analyzed for PAH constituents; and
- PAH constituents were not detected in the groundwater samples collected from monitor wells MW-1, MW-4 or MW-5 at concentrations exceeding their applicable NMWQCC groundwater standards (where established).

3.3 Historical Data Comparisons

With a few exceptions, measurable PSH has not been present in the groundwater monitor wells MW-2, MW-3, or MW-5 through MW-15 since they were installed at the site. Monitor wells MW-1 and MW-4 have historically exhibited measurable thicknesses of PSH ranging up to 0.30 feet and 1.04 feet in 2011, respectively. With a few exceptions, the temporary monitor well (TMW-1), installed in the center of the excavation, in August 2002, has exhibited measurable PSH thicknesses ranging from a sheen to 5.45 feet. With a few exceptions, historically, benzene has not been present in groundwater samples collected from monitor wells MW-2, MW-3 or MW-6 through MW-15. Benzene has been present in the groundwater samples collected from monitor wells MW-1, MW-4, MW-5 and TMW-1 at concentrations exceeding the applicable NMWQCC groundwater standard of 0.01 mg/L. Toluene, ethylbenzene and total xylenes were not detected in the groundwater at concentrations exceeding their respective NMWQCC groundwater standards in any of the groundwater samples in 2014. With the exception of periodic concentrations of naphthalene detected in monitor wells MW-1 and MW-5, PAHs have not been detected at concentrations exceeding the laboratory reporting limits and/or NMWQCC groundwater standards since the monitor wells were installed. Terracon purged large volumes of groundwater exhibiting dissolved-phase concentrations of petroleum constituents from monitor wells MW-1, MW-4, MW-5, and TMW-1 during 2014 in an attempt to enhance remediation of the plume at the site.

4.0 FINDINGS AND RECOMMENDATION

4.1 Findings

The annual groundwater report presents the results of four groundwater monitoring and sampling events for the 2014 calendar year.

- Groundwater was not collected from monitor well MW-3 during the first through third quarters in 2014, as the well was dry during those periods;
- Measurable thicknesses of PSH were observed in temporary monitor well TMW-1 ranging in thicknesses from 0.17 to 2.60 feet;
- Groundwater samples collected from monitor wells MW-1, MW-5, and MW-12 contained benzene at concentrations exceeding the NMWQCC groundwater standard during at least one of the four quarters in 2014;
- Groundwater samples collected from monitor wells MW-2, MW-3, MW-6 through MW-11, and MW-13 through MW-15 have not contained benzene concentrations exceeding the NMWQCC groundwater standard in 2014;
- Toluene, ethylbenzene and total xylene concentrations were not detected at concentrations above applicable NMWQCC groundwater standards in the groundwater samples collected at the site during the four quarters in 2014;
- PAH constituents were not detected in any of the groundwater samples collected from the monitor wells at concentrations exceeding their respective NMWQCC groundwater standards (where established); and
- The extent of the PSH plume and the dissolved phase plume exceeding the NMWQCC groundwater standards has been defined. Detected concentrations of BTEX and PAHs have demonstrated a decreasing trend since groundwater sampling activities were initiated.

4.2 Recommendations

Based upon the results of this report and approval from the NMOCD, Terracon recommends the following:

- Continue PSH recovery and purging groundwater from select wells at the site on a bi-monthly schedule to enhance recovery at the site;

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Livingston Ridge to Hugh P. Sims ■ **Lea County, New Mexico**

March 20, 2015 ■ Terracon Project Number A4157008

- Continue quarterly groundwater sampling for BTEX for all monitor wells and PAHs for monitor well MW-5 during the 2015 calendar year, in accordance with the NMOCD approved NMOCD groundwater management plan; and
- Submit an annual report to the NMOCD detailing the 2015 site activities.

DISTRIBUTION

- Copy 1: Mr. Tomas Oberding, Hydrologist
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
- Copy 2: New Mexico Oil Conservation Division
District 1
1625 N. French Drive
Hobbs, New Mexico 88240
- Copy 3: Mrs. Camille Bryant
Plains Marketing, L.P.
2530 State Highway 214
Denver City, Texas 79323
cjbryant@paalp.com
- Copy 4: Mr. Jeff Dann
Plains Marketing, L.P.
333 Clay Street, Suite 1600
Houston, Texas 77002
jpdann@paalp.com
- Copy 5: Mr. Dale Moxley
Terracon Consultants, Inc.
10400 Highway 191
Midland, Texas 79707
jdmoxley@terracon

APPENDIX A

Appendix A: Figure 1– Topographic Map

Figure 2 – Site Plan

Figure 3 – Groundwater Gradient Map (02/20/14)

Figure 4 – Groundwater Gradient Map (04/16/14)

Figure 5 – Groundwater Gradient Map (07/08/14)

Figure 6 – Groundwater Gradient Map (10/04/14)

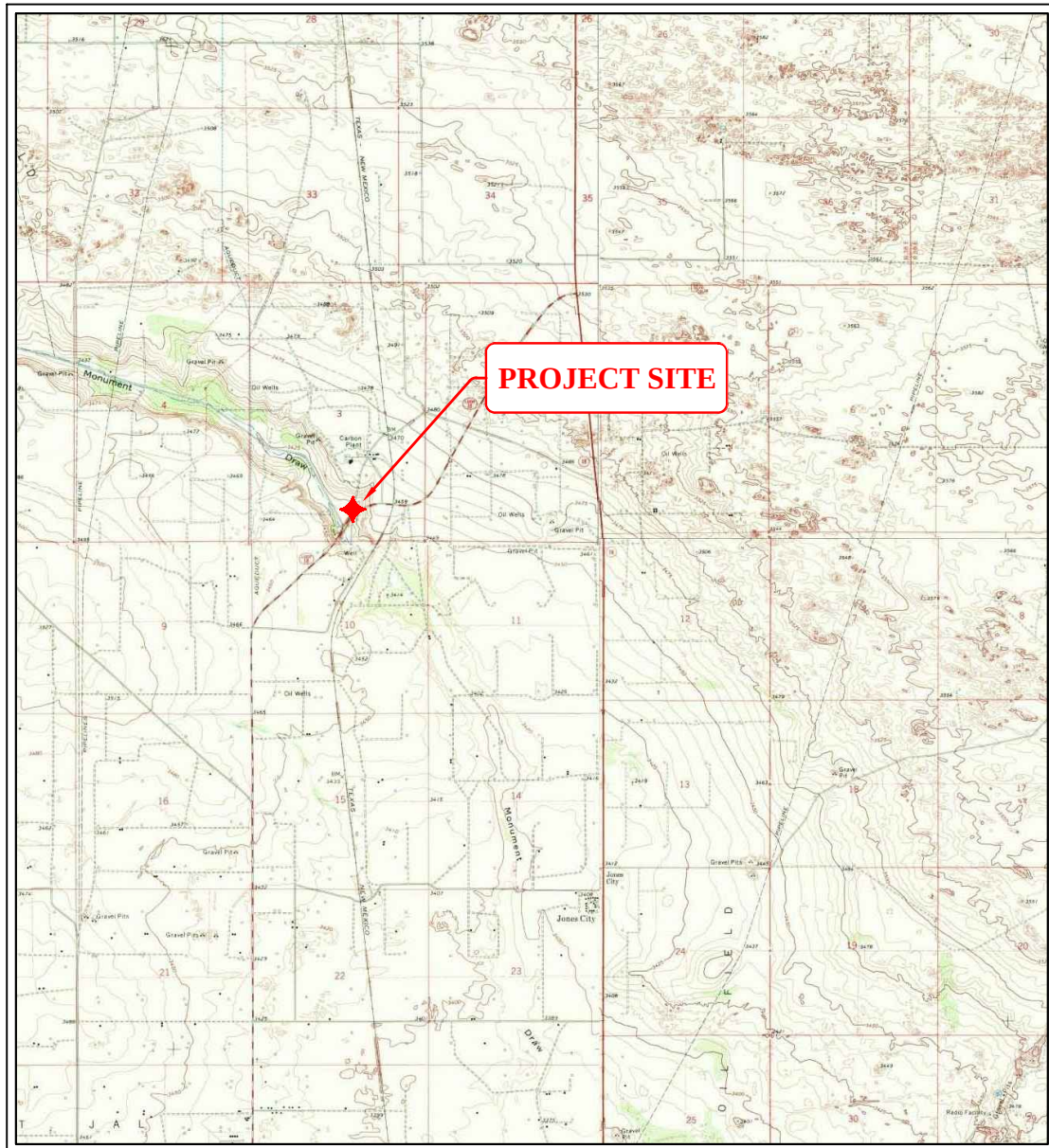
Figure 7 – Groundwater Contaminant Concentration Map (02/20/14)

Figure 8 – Groundwater Contaminant Concentration Map (04/16/14)

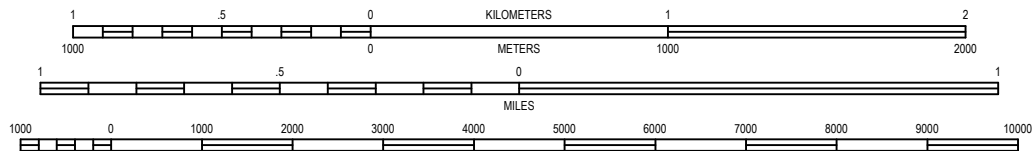
Figure 9 – Groundwater Contaminant Concentration Map (07/08/14)

Figure 10 – Groundwater Contaminant Concentration Map (10/04/14)

UNITED STATES – DEPARTMENT OF THE INTERIOR – GEOLOGICAL SURVEY



SCALE 1:24 000



CONTOUR INTERVAL FIVE FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

HOBBS SW, NM
PHOTOREVISED 1969
7.5 MINUTE SERIES (TOPOGRAPHIC)

Project Mgr:	DM
Drawn By:	RF
Checked By:	DM
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Project No:	A4157008
Scale:	AS SHOWN
File No:	A4157008
Date:	03/06/2015

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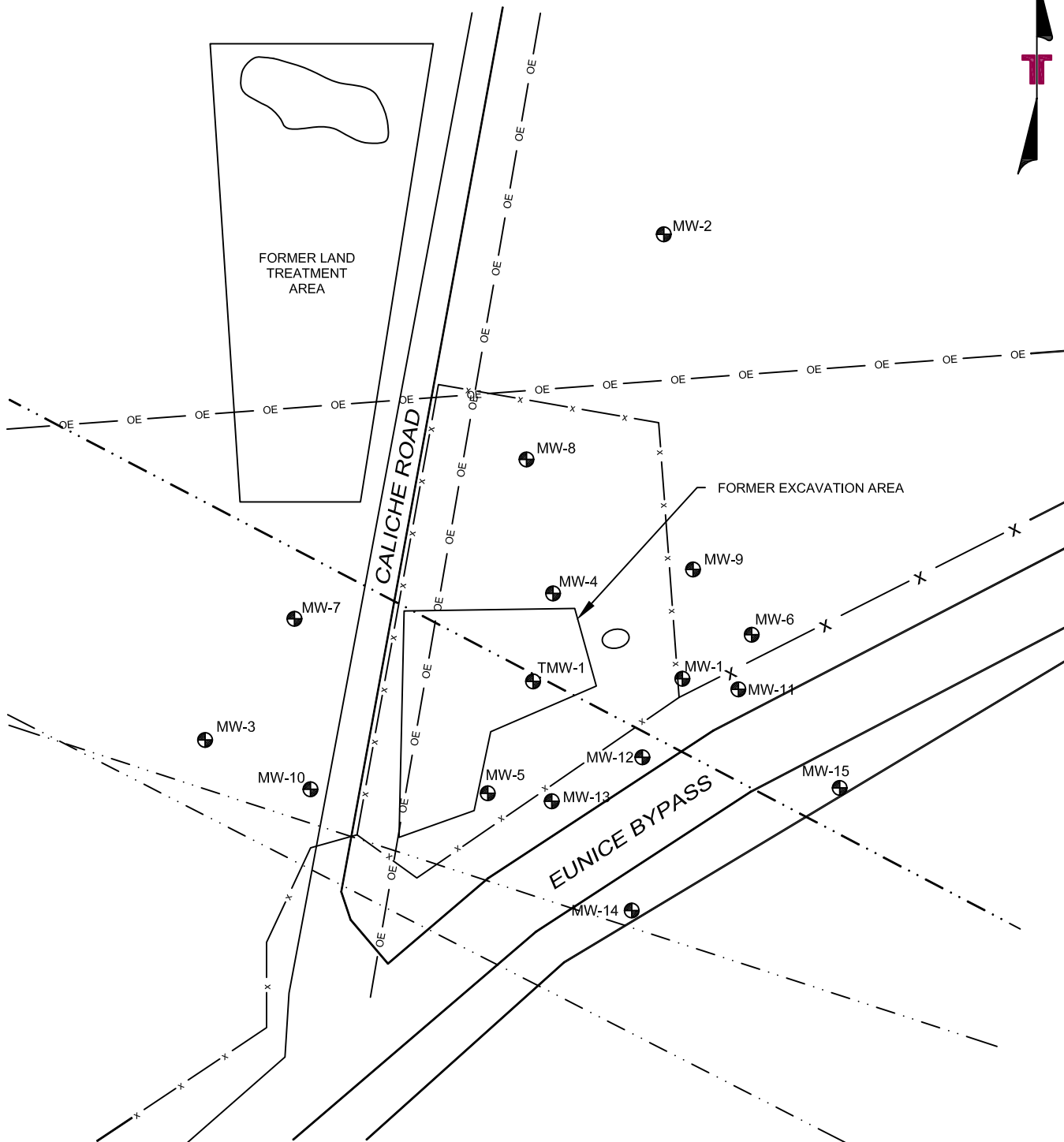
1211 WEST FLORIDA MIDLAND, TEXAS
PH. (432) 684-9600 FAX. (432) 684-9608

TOPOGRAPHIC QUADRANGLE MAP

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD FILE# 1R-0398

FIG. No.

1



LEGEND	
	MONITORING WELL LOCATIONS

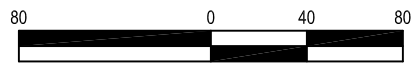


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

SCALE IN FEET

DWG. No. A4137008 base map

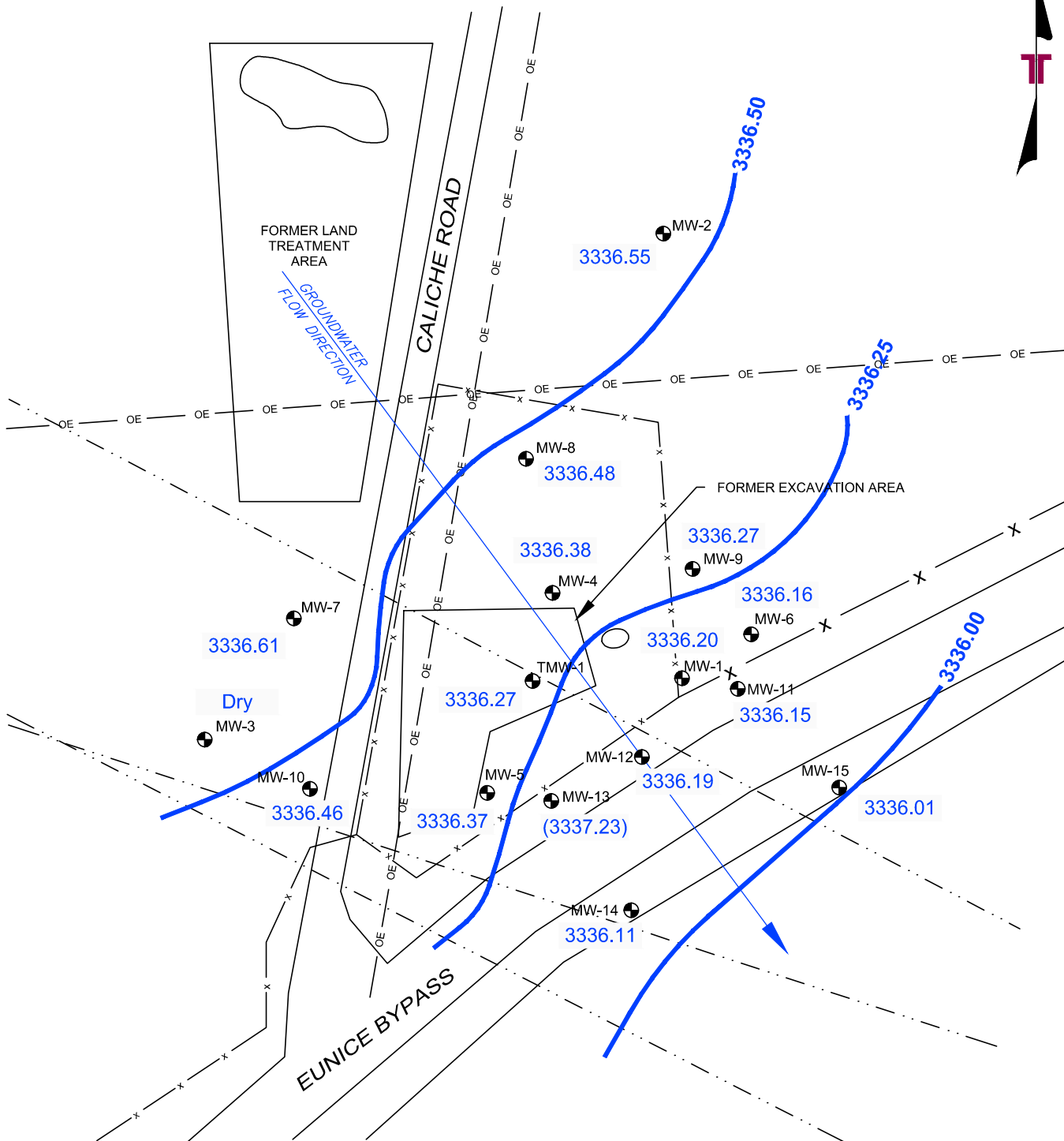
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Approved by:	DM	Date:	03/06/2015

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BASE MAP
PLAINS PIPELINE, L.P. LIVINGSTON RIDGE TO HUGH P. SIMS LEA COUNTY, NEW MEXICO SRS# 2001-11005, NMOCD FILE# 1R-0398

Figure
2



LEGEND	
	MONITORING WELL LOCATIONS



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DWG. No. A4147008 base map

Project Manager:	DM	Project No.	A4147008
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Approved by:	DM	Date:	4/8/2014

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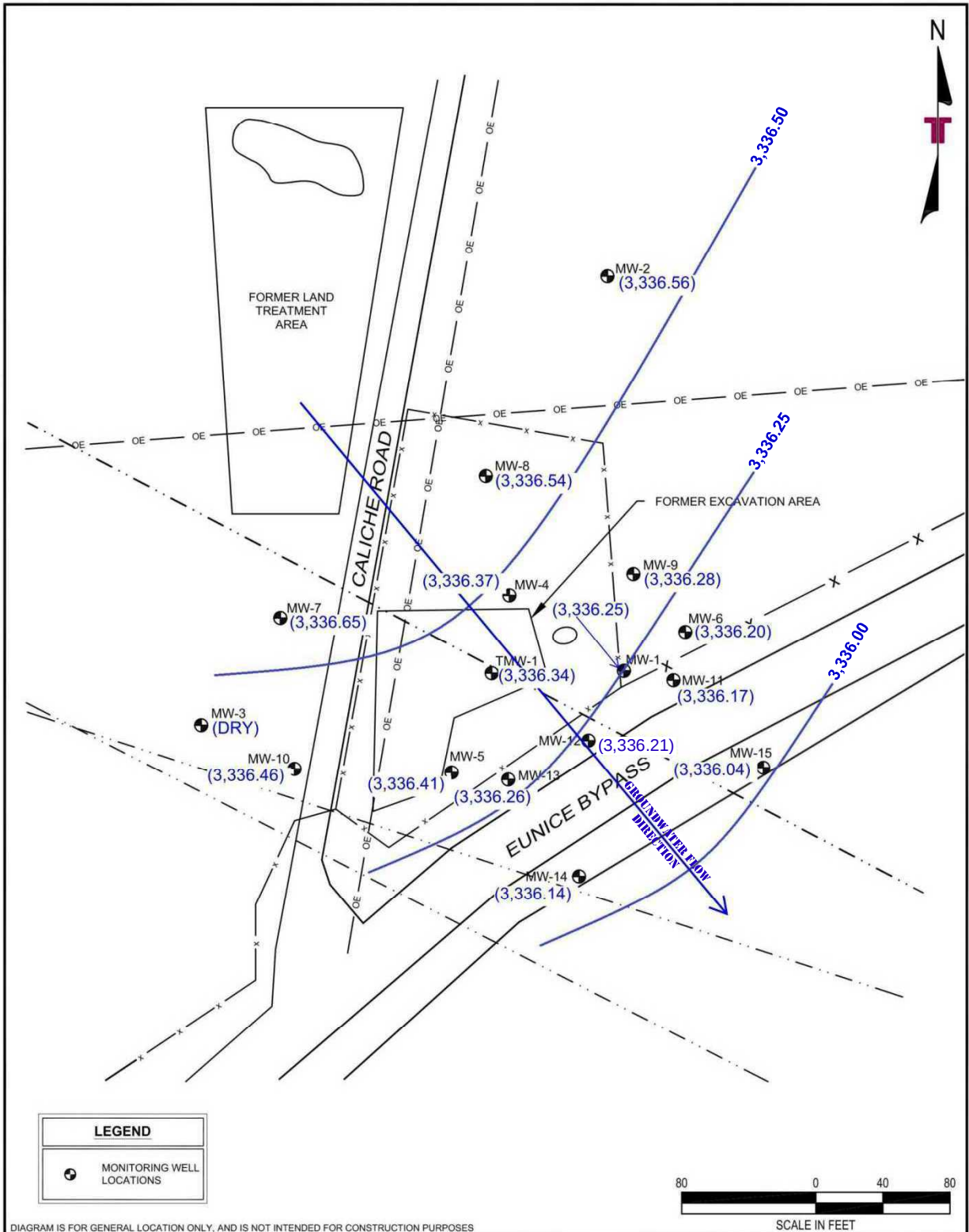
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GROUNDWATER GRADIENT MAP (2/20/14)

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD FILE# 1R-0398

Figure

3



DWG. No. A4137008 base map

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Approved by:	DM	Date:	06/11/2014

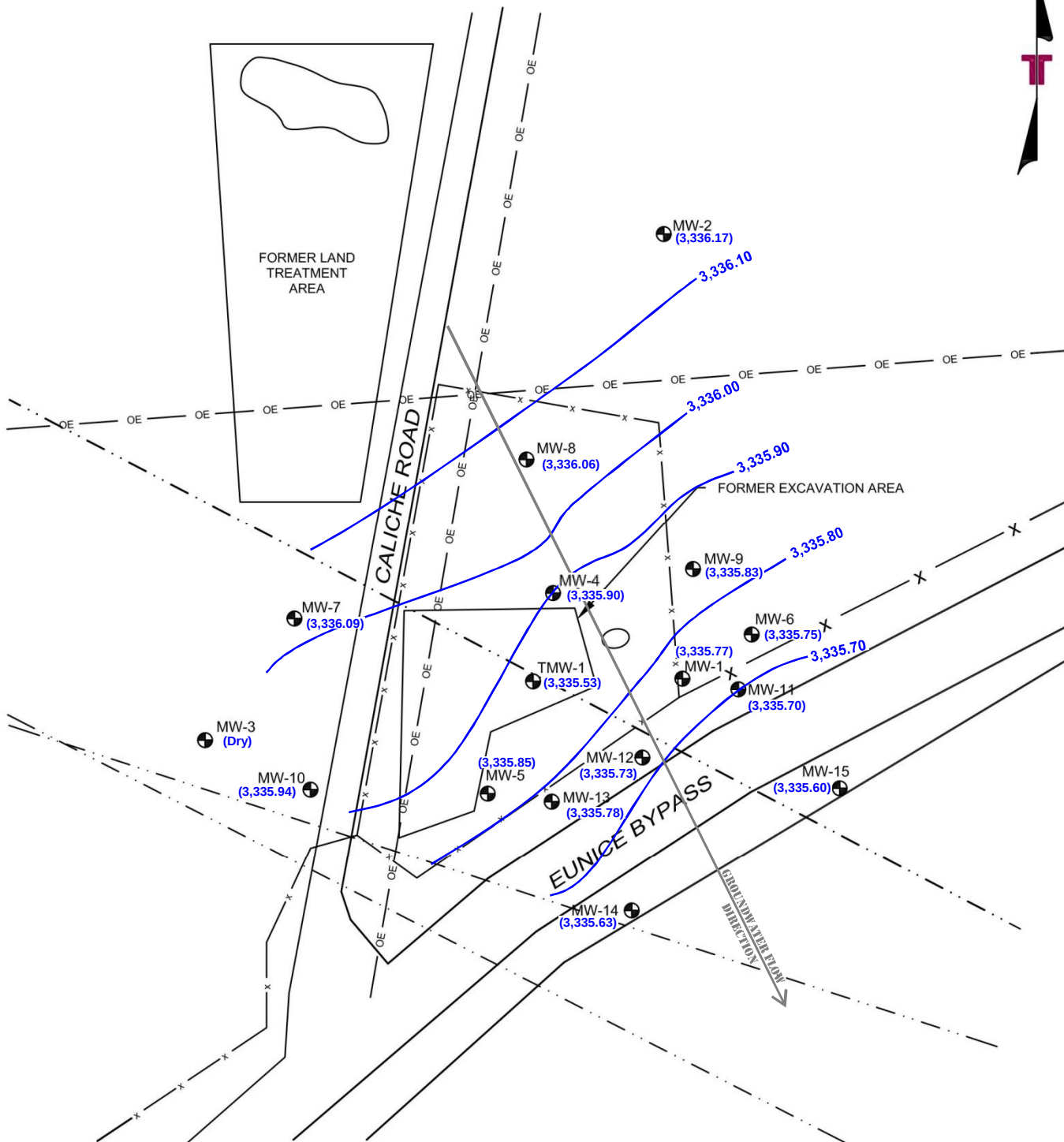


Groundwater Gradient Map (4/16/2014)

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD FILE# 1R-0398

Figure

4



LEGEND		
	MONITORING WELL LOCATIONS	2733.00
	GROUNDWATER CONTOUR LINES	GROUNDWATER ELEVATION (FT)



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Project Manager:	DM	Project No.	A4147008
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Approved by:	DM	Date:	(10/18/2014)

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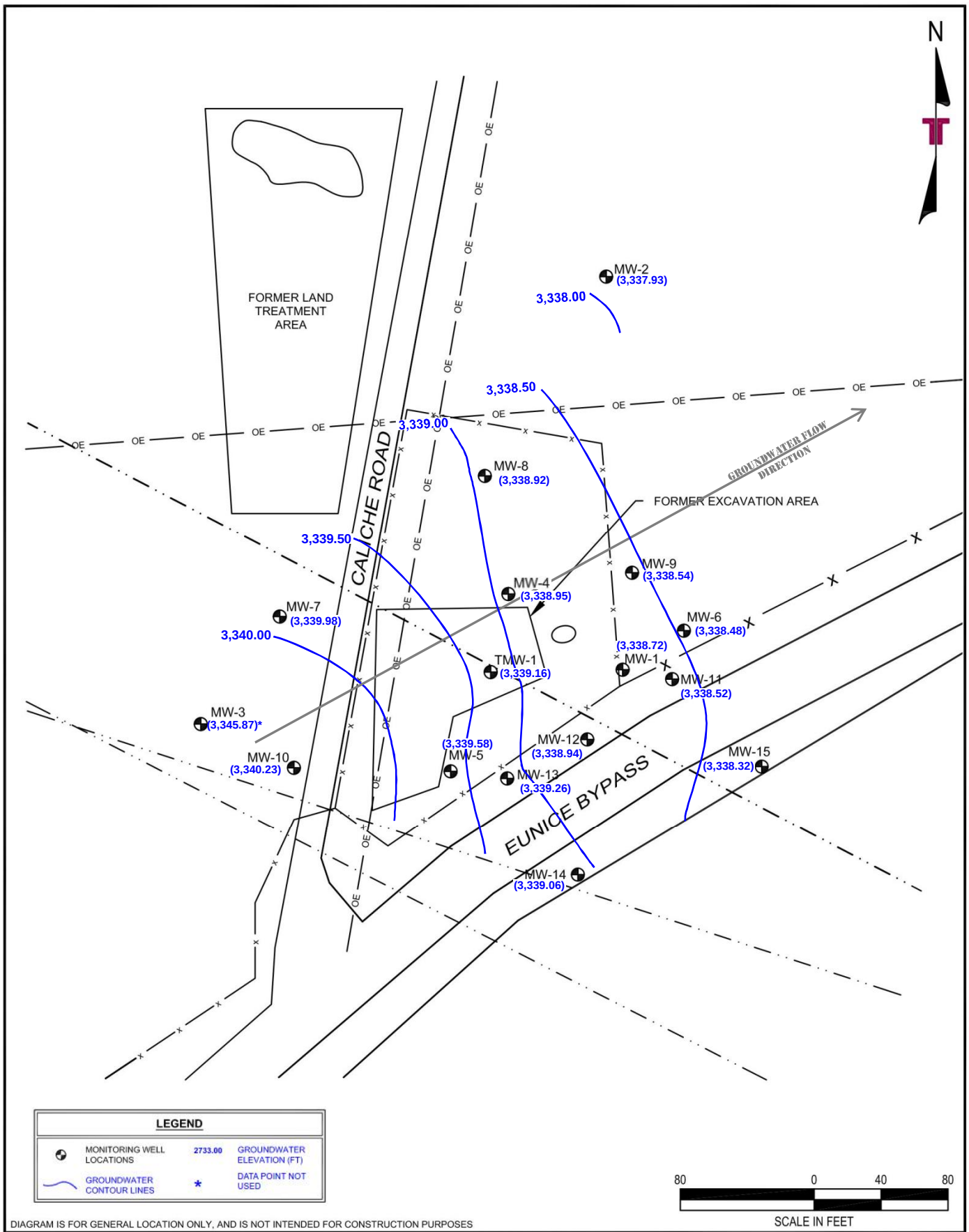
1211 West Florida Avenue Midland, Texas 79701
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Groundwater Gradient Map (07/08/2014)

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD FILE# 1R-0398

Figure
5

DWG. No. A4137008 base map



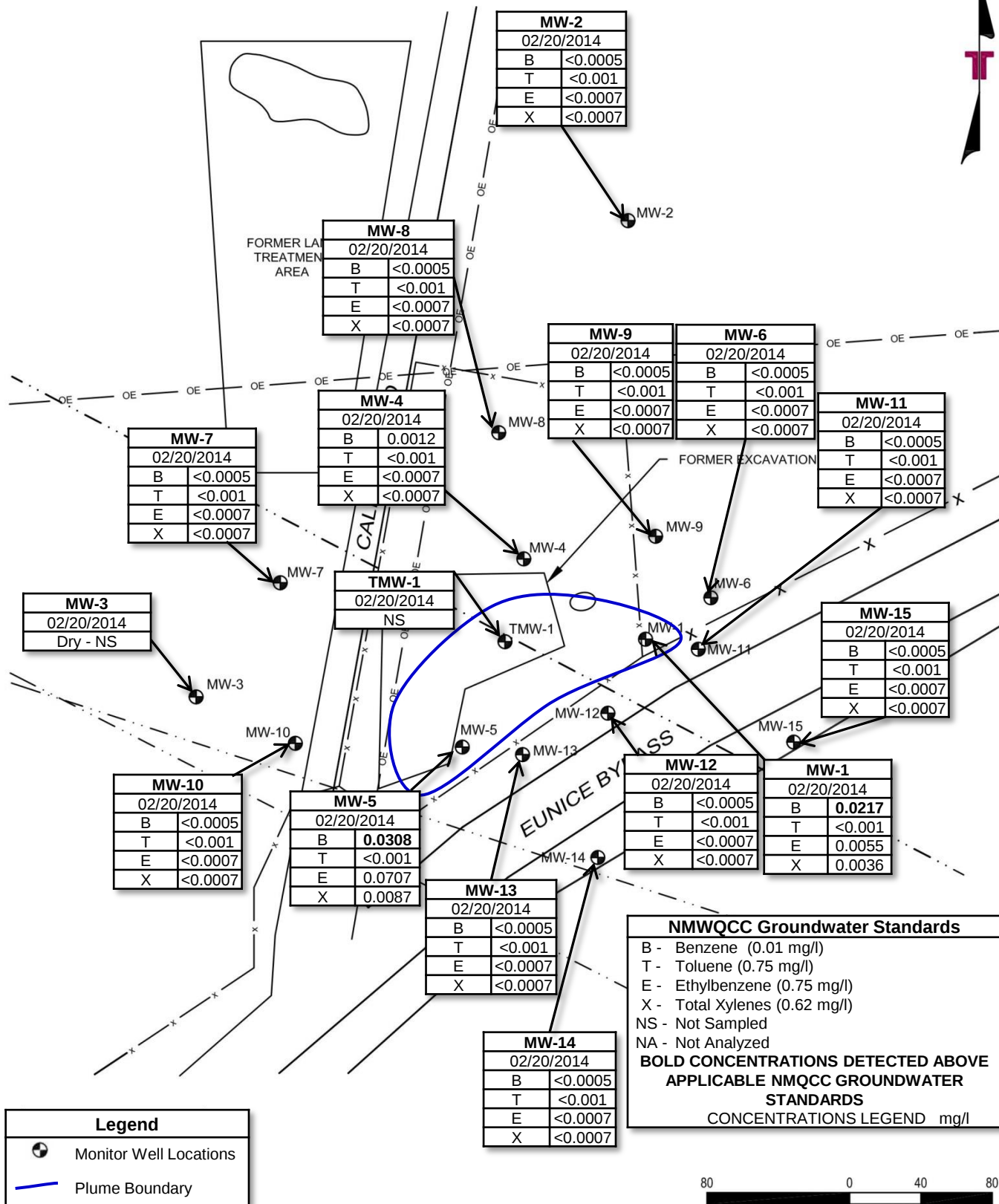


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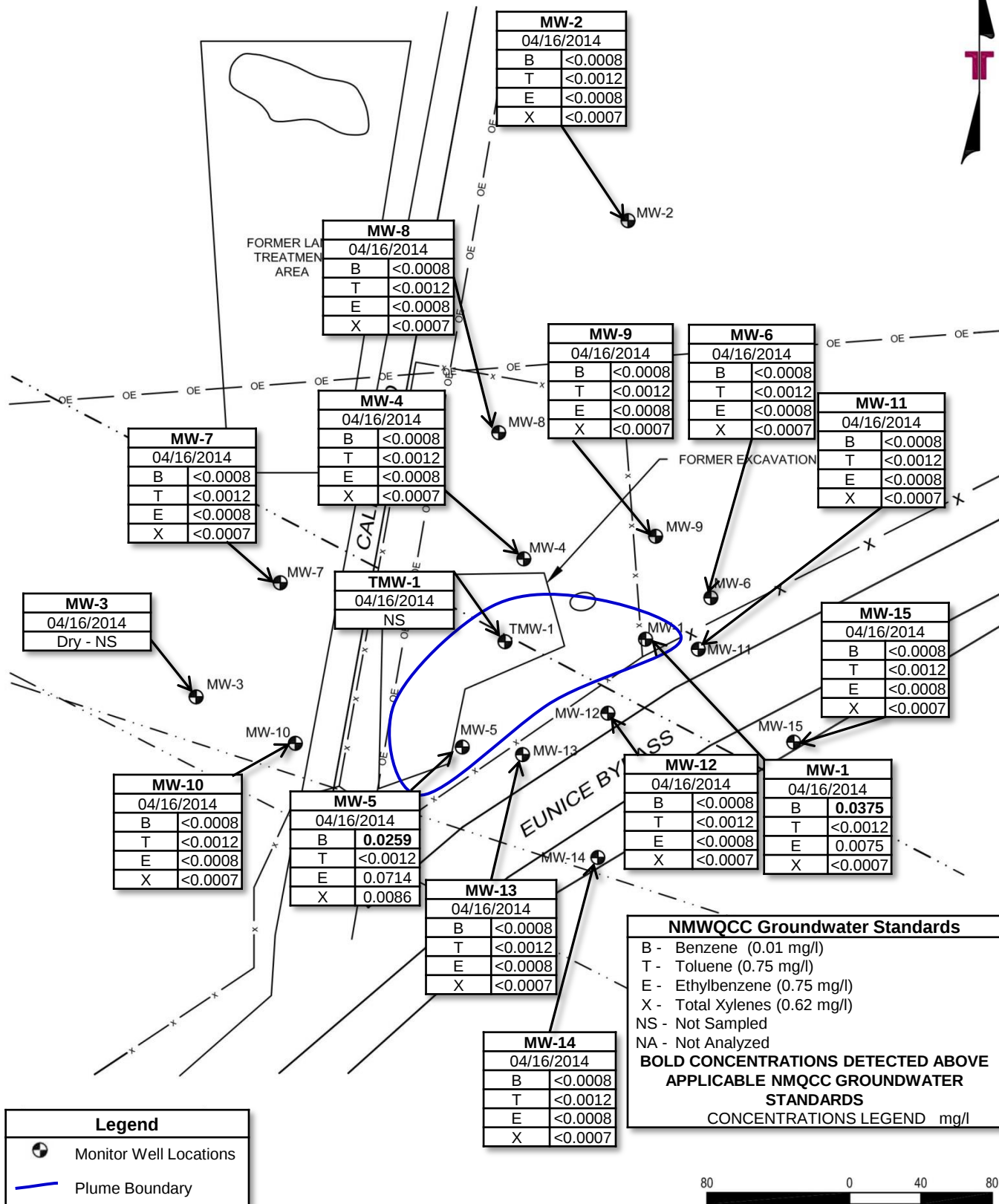
10400 Hwy 191 Midland, Texas 79707
PH: (432) 684-9600 FAX: (432) 684-9608

Groundwater Contaminant Concentration Map (02/20/2014)

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCDFILE# 1R-0398

Figure

7



DWG. No. A4137008 base map

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Groundwater Contaminant Concentration Map (04/16/2014)

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCDFILE# 1R-0398

Figure

8

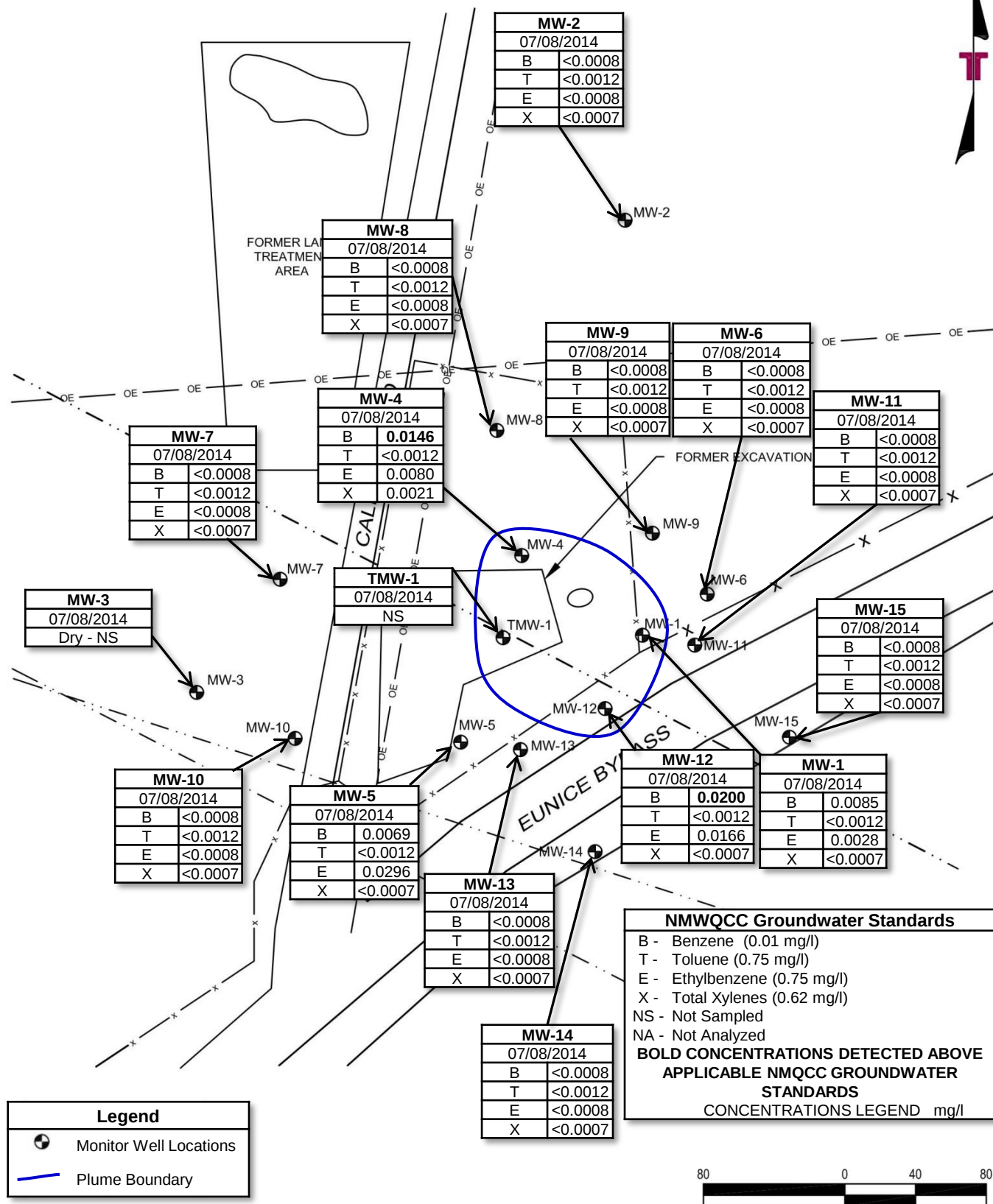


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Consulting Engineers & Scientists

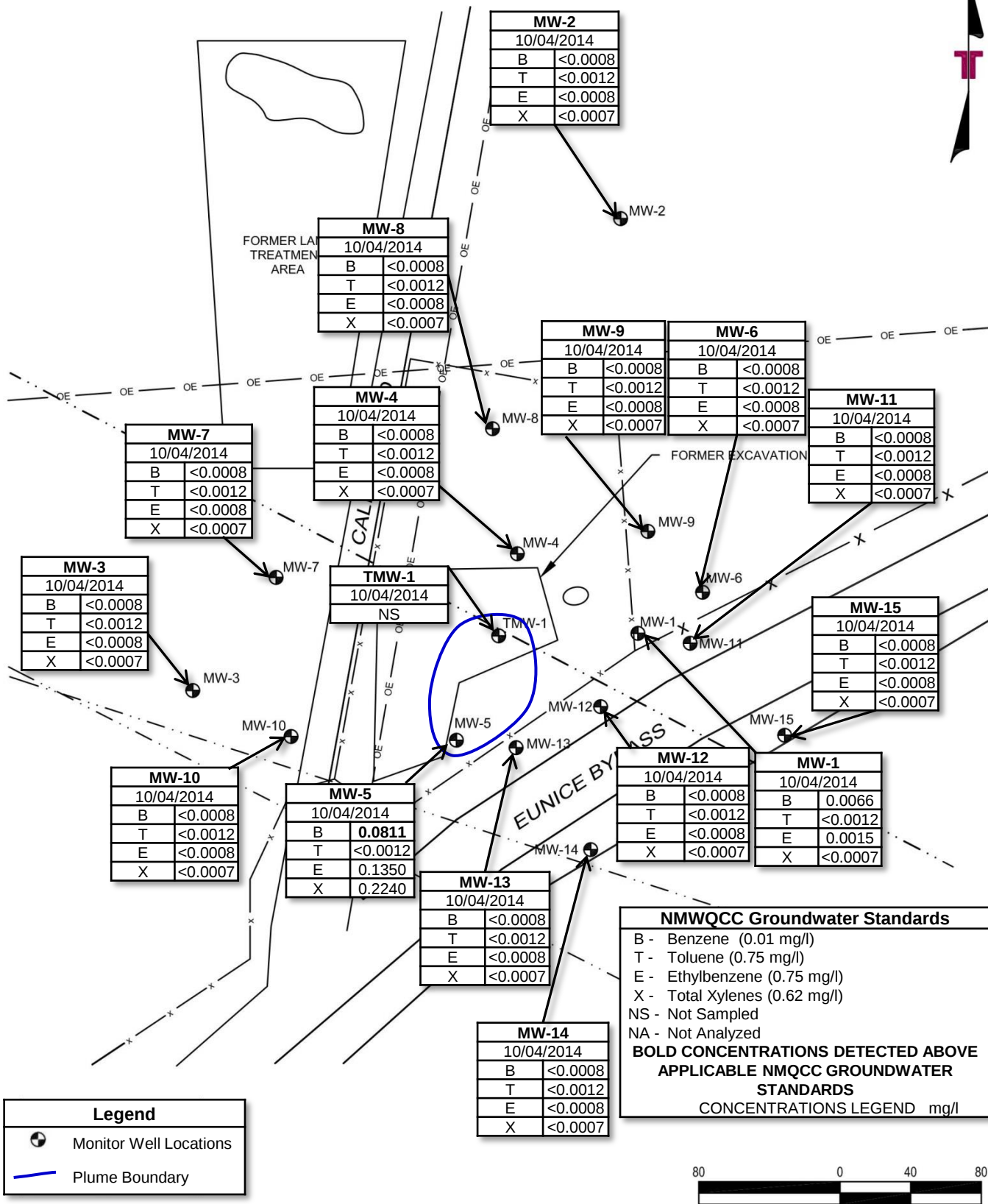
10400 Hwy 191 Midland, Texas 79707
PH: (432) 684-9600 FAX: (432) 684-9608

Groundwater Contaminant Concentration Map (07/08/2014)

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCDFILE# 1R-0398

Figure

9



DWG. No. A4137008 base map

Project Manager:	DM	Project No.	A4157008
Drawn by:	RF	Scale:	AS SHOWN
Checked by:	DM	File Name:	A4157008
Approved by:	DM	Date:	03/06/2015

Terracon
Consulting Engineers & Scientists

10400 Hwy 191 Midland, Texas 79707
PH: (432) 684-9600 FAX: (432) 684-9608

Groundwater Contaminant Concentration Map (10/04/2014)

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCDFILE# 1R-0398

Figure

10

APPENDIX B

Tables

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-1	12/27/07	3,374.23	-	32.44	-	3,341.79		
	01/18/08		-	32.56	-	3,341.67		
	02/20/08		-	32.58	-	3,341.65		
	02/29/08		-	32.57	-	3,341.66		
	03/11/08		-	32.66	-	3,341.57		
	04/30/08		-	32.65	-	3,341.58		
	05/28/08		-	32.78	-	3,341.45		
	06/25/08		-	32.92	-	3,341.31		
	07/02/08		-	32.97	-	3,341.26	0.10	20.00
	07/07/08		-	33.00	-	3,341.23	0.10	10.00
	07/14/08		-	33.07	-	3,341.16	0.10	25.00
	07/22/08		-	33.09	-	3,341.14	0.10	10.00
	07/30/08		-	29.15	-	3,345.08		
	08/05/08		-	29.24	-	3,344.99		15.00
	08/14/08		-	33.25	-	3,340.98	0.10	5.00
	08/21/08		-	33.12	-	3,341.11		
	08/27/08		-	33.13	-	3,341.10		25.00
	09/20/08		-	33.07	-	3,341.16		30.00
	09/29/08		-	33.11	-	3,341.12		40.00
	11/06/08		-	33.08	-	3,341.15		0.00
	11/15/08		-	33.11	-	3,341.12		25.00
	11/24/08		-	33.04	-	3,341.19		50.00
	11/26/08		-	33.04	-	3,341.19		50.00
	12/20/08		-	33.09	-	3,341.14		50.00
	01/16/09		-	33.13	-	3,341.10		
	02/09/09		-	33.10	-	3,341.13		
	04/08/09		-	33.21	-	3,341.02		50.00
	04/16/09		-	33.25	-	3,340.98		50.00
	04/22/09		-	32.32	-	3,341.91		40.00
	04/29/08		-	33.24	-	3,340.99		50.00
	05/06/09		-	33.85	-	3,340.38		50.00
	05/14/09		-	33.33	-	3,340.90		
	07/08/09		-	33.51	-	3,340.72		30.00
	07/24/09		-	33.53	-	3,340.70		
	08/04/09		-	34.35	-	3,339.88		55.00
	08/13/09		-	33.58	-	3,340.65		
	08/19/09		-	33.24	-	3,340.99		45.00
	09/01/09		33.68	33.72	0.04	3,340.54	5.00	49.50
	09/22/09		33.79	33.81	0.02	3,340.44	0.25	5.00
	10/12/09		-	33.85	-	3,340.39		23.00
	10/30/09		-	33.94	-	3,340.29		
	11/10/09		-	33.97	-	3,340.26	1.00	24.00
	01/08/10		-	33.93	-	3,340.30		15.00
	01/22/10		-	33.94	-	3,340.29		10.00
	01/26/10		-	33.09	-	3,341.14		
	02/03/10		-	34.08	-	3,340.15		
	02/10/10		-	33.97	-	3,340.26		30.00
	02/22/10		-	33.92	-	3,340.31		30.00
	03/09/10		-	33.95	-	3,340.28		50.00
	03/24/10		-	34.00	-	3,340.23		50.00
	04/12/10		-	33.92	-	3,340.31		50.00
	04/27/10		-	34.93	-	3,339.30		50.00

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-1	05/27/10	3,374.23	-	34.09	-	3,340.14		
	06/21/10		-	34.15	-	3,340.08		45.00
	07/07/10		-	34.13	-	3,340.10		50.00
	07/20/10		-	34.00	-	3,340.23		55.00
	08/03/10		-	34.16	-	3,340.07		50.00
	08/16/10		-	34.23	-	3,340.00		45.00
	09/02/10		-	34.28	-	3,339.95		30.00
	09/17/10		-	34.36	-	3,339.87		30.00
	10/05/10		-	34.43	-	3,339.80		20.00
	11/11/10		-	34.55	-	3,339.68		
	12/15/10		34.39	34.42	0.03	3,339.84		
	12/29/10		34.36	34.40	0.04	3,339.86		20.00
	02/18/11		34.44	34.50	0.06	3,339.78		
	03/02/11		34.45	34.65	0.20	3,339.75	0.10	25.00
	03/16/11		34.57	34.64	0.07	3,339.65	0.10	20.00
	03/29/11		34.51	34.54	0.03	3,339.72		30.00
	04/15/11		-	34.57	-	3,339.67		20.00
	04/18/11		-	34.53	-	3,339.70		25.00
	04/29/11		-	34.58	-	3,339.65		20.00
	05/06/11		-	34.58	-	3,339.65		20.00
	05/20/11		-	34.65	-	3,339.58		25.00
	05/25/11		-	34.69	-	3,339.54		
	06/01/11		-	34.75	-	3,339.48		20.00
	06/14/11		-	25.60	-	3,348.63		
	07/30/11		-	35.24	-	3,338.99		
	09/20/11		-	35.60	-	3,338.64		
	10/03/11		35.75	36.05	0.30	3,338.44		
	10/28/11		35.80	35.88	0.08	3,338.42		
	11/10/11		35.80	35.87	0.07	3,338.42		20.00
	12/09/11		-	36.30	-	3,337.93		20.00
	02/24/12		-	36.02	-	3,338.21		20.00
	02/29/12		-	36.11	-	3,338.12		
	03/27/12		-	36.21	-	3,338.02		20.00
	04/12/12		-	36.33	-	3,337.90		20.00
	04/19/12		-	36.28	-	3,337.95		20.00
	05/05/12		-	36.35	-	3,337.88		20.00
	05/17/12		-	36.40	-	3,337.83		
	06/21/12		-	36.40	-	3,337.83		20.00
	07/09/12		-	36.53	-	3,337.70		25.00
	08/02/12		-	36.60	-	3,337.63		
	08/15/12		-	36.72	-	3,337.51		
	08/28/12		-	36.80	-	3,337.43		
	09/12/12		-	37.12	-	3,337.11		25.00
	09/26/12		-	37.10	-	3,337.13		
	10/10/12		-	37.07	-	3,337.16		25.00
	10/26/12		-	37.08	-	3,337.15		
	11/06/12		-	37.12	-	3,337.11		
	11/07/12		-	37.11	-	3,337.12		5.00
	11/20/12		-	37.16	-	3,337.07		25.00
	01/11/13		-	37.18	-	3,337.05		25.00
	01/25/13		-	37.20	-	3,337.03		25.00
	02/22/13		-	37.36	-	3,336.87		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-1	02/07/13	3,374.23	37.17	37.20	0.03	3,337.06		25.00
	03/08/13		-	37.20	-	3,337.03		25.00
	03/21/13		-	37.25	-	3,336.98		25.00
	04/04/13		37.35	37.38	0.03	3,336.88		25.00
	04/17/13		-	37.24	-	3,337.01		25.00
	05/01/13		-	37.35	-	3,336.89		25.00
	05/23/13		-	37.29	-	3,336.95		25.00
	06/13/13		-	37.42	-	3,336.81		25.00
	06/28/13		-	37.52	-	3,336.72		25.00
	07/10/13		-	37.60	-	3,336.63		25.00
	07/24/13		-	37.67	-	3,336.56		
	08/08/13		-	37.76	-	3,336.47		
	08/22/13		-	37.90	-	3,336.33		
	09/05/13		-	38.01	-	3,336.23		
	09/19/13		-	38.11	-	3,336.13		5.00
	10/07/13		-	38.19	-	3,336.05		25.00
	10/17/13		-	38.19	-	3,336.05		35.00
	10/31/13		-	38.07	-	3,336.17		25.00
	11/13/13		-	38.06	-	3,336.17		
	11/27/13		-	38.04	-	3,336.20		25.00
	12/11/13		-	38.05	-	3,336.19		25.00
	12/22/13		-	38.06	-	3,336.18		25.00
	01/09/14		-	38.02	-	3,336.22	0.10	25.00
	01/23/14		-	38.07	-	3,336.17	0.10	25.00
	02/05/14		-	38.06	-	3,336.18	0.10	25.00
	02/20/14		-	38.03	-	3,336.20	0.10	
	03/05/14		-	38.02	-	3,336.22	0.10	
	03/19/14		-	38.04	-	3,336.20	0.10	25.00
	04/02/14		-	38.00	-	3,336.24	0.10	25.00
	04/16/14		-	37.99	-	3,336.25		
	05/01/14		-	38.03	-	3,336.21	0.25	25.00
	05/13/14		-	38.06	-	3,336.18	0.10	25.00
	05/28/14		-	38.13	-	3,336.11	0.05	30.00
	06/10/14		-	38.26	-	3,335.98	0.10	30.00
	06/24/14		-	38.37	-	3,335.87	0.15	30.00
	07/08/14		-	38.46	-	3,335.77		
	07/23/14		-	38.59	-	3,335.65		30.00
	08/05/14		-	38.74	-	3,335.50		30.00
	08/12/14		-	38.78	-	3,335.46		30.00
	09/03/14		-	38.94	-	3,335.30		30.00
	09/16/14		-	38.72	-	3,335.52		30.00
	09/30/14		-	35.87	-	3,338.37	0.13	30.00
	10/04/14		-	35.52	-	3,338.72	0.13	
	10/21/14		-	35.11	-	3,339.13		30.00
	10/28/14		-	35.11	-	3,339.13	0.15	30.00
	11/13/14		-	35.12	-	3,339.11		30.00
	11/25/14		-	35.21	-	3,339.02	0.23	30.00
	12/10/14		-	35.28	-	3,338.96		30.00
	12/21/14		-	35.33	-	3,338.90		30.00

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-2	08/15/02	3,378.27	-	41.67	-	3,336.60		
	09/30/02		-	42.46	-	3,335.81		
	11/06/02		-	41.88	-	3,336.39		
	02/27/03		-	41.31	-	3,336.96		
	03/18/03		-	41.37	-	3,336.90		
	05/12/03		-	41.60	-	3,336.67		
	08/20/03		-	42.53	-	3,335.74		
	11/10/03		-	42.02	-	3,336.25		
	02/17/04		-	43.19	-	3,335.08		
	05/06/04		-	39.43	-	3,338.84		
	08/18/04		-	37.87	-	3,340.40		
	09/10/04		-	37.63	-	3,340.64		
	09/21/04		-	37.67	-	3,340.60		
	10/05/04		-	36.00	-	3,342.27		
	10/19/04		-	33.67	-	3,344.60		
	11/02/04		-	33.95	-	3,344.32		
	11/15/04		-	33.10	-	3,345.17		
	12/06/04		-	33.13	-	3,345.14		
	12/21/04		-	33.04	-	3,345.23		
	01/03/05		-	33.27	-	3,345.00		
	01/18/05		-	33.50	-	3,344.77		
	02/01/05		-	33.63	-	3,344.64		
	02/22/05		-	34.05	-	3,344.22		
	04/21/05		-	34.34	-	3,343.93		
	05/05/05		-	34.38	-	3,343.89		
	05/17/05		-	34.41	-	3,343.86		
	06/08/05		-	34.62	-	3,343.65		
	06/22/05		-	34.78	-	3,343.49		
	07/20/05		-	35.01	-	3,343.26		
	08/15/05		-	34.73	-	3,343.54		
	08/31/05		-	34.64	-	3,343.63		
	09/14/05		-	34.60	-	3,343.67		
	09/28/05		-	34.71	-	3,343.56		
	11/09/05		-	35.18	-	3,343.09		
	11/18/05		-	34.92	-	3,343.35		
	11/30/05		-	35.29	-	3,342.98		
	12/14/05		-	35.46	-	3,342.81		
	12/28/05		-	35.51	-	3,342.76		
	01/11/06		-	35.59	-	3,342.68		
	01/25/06		-	35.77	-	3,342.50		
	02/08/06		-	35.80	-	3,342.47		
	02/16/06		-	35.24	-	3,343.03		
	02/22/06		-	35.83	-	3,342.44		
	03/08/06		-	35.84	-	3,342.43		
	04/10/06		-	35.42	-	3,342.85		
	05/22/06		-	35.51	-	3,342.76		
	07/12/06		-	35.74	-	3,342.53		
	08/07/06		-	36.10	-	3,342.17		
	10/17/06		-	35.57	-	3,342.70		
	11/21/06		-	35.72	-	3,342.55		
	12/13/06		-	35.79	-	3,342.48		
	01/09/07		-	35.96	-	3,342.31		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

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Lea County, New Mexico

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Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-2	02/14/07	3,378.27	-	35.93	-	3,342.34		
	02/28/07		-	35.88	-	3,342.39		
	03/13/07		-	35.94	-	3,342.33		
	05/11/07		-	35.73	-	3,342.54		
	08/20/07		-	35.51	-	3,342.76		
	11/16/07		-	35.88	-	3,342.39		
	02/29/08		-	36.04	-	3,342.23		
	05/28/08		-	36.15	-	3,342.12		
	08/21/08		-	36.65	-	3,341.62		
	11/06/08		-	36.49	-	3,341.78		
	02/09/09		-	36.55	-	3,341.72		
	05/14/09		-	36.70	-	3,341.57		
	08/12/09		-	37.05	-	3,341.22		
	11/10/09		-	37.34	-	3,340.93		
	02/03/10		-	37.35	-	3,340.92		
	05/27/10		-	37.43	-	3,340.84		
	08/16/10		-	37.64	-	3,340.63		
	11/11/10		-	37.81	-	3,340.46		
	02/18/11		-	37.86	-	3,340.41		
	05/25/11		-	38.11	-	3,340.16		
	10/03/11		-	39.14	-	3,339.13		
	10/28/11		-	39.22	-	3,339.05		
	11/10/11		-	39.25	-	3,339.02		
	12/09/11		-	39.38	-	3,338.89		
	02/24/12		-	39.40	-	3,338.87		
	02/29/12		-	39.41	-	3,338.86		
	03/27/12		-	39.49	-	3,338.78		
	04/12/12		-	39.65	-	3,338.62		
	04/19/12		-	39.64	-	3,338.63		
	05/05/12		-	39.64	-	3,338.63		
	05/17/12		-	39.63	-	3,338.64		
	06/21/12		-	39.83	-	3,338.44		
	07/09/12		-	39.90	-	3,338.37		
	08/02/12		-	40.11	-	3,338.16		
	08/15/12		-	40.23	-	3,338.04		
	08/28/12		-	40.35	-	3,337.92		
	09/12/12		-	40.56	-	3,337.71		
	09/26/12		-	40.62	-	3,337.65		
	10/10/12		-	40.60	-	3,337.67		
	10/26/12		-	40.65	-	3,337.62		
	11/06/12		-	40.66	-	3,337.61		5.00
	11/07/12		-	40.67	-	3,337.60		5.00
	11/20/12		-	40.73	-	3,337.54		
	01/11/13		-	40.61	-	3,337.66		
	01/25/13		-	40.78	-	3,337.49		
	02/07/13		-	40.79	-	3,337.48		
	02/22/13		-	40.90	-	3,337.37		
	03/08/13		-	41.78	-	3,336.49		
	03/21/13		-	40.80	-	3,337.47		
	04/04/13		-	40.95	-	3,337.32		
	04/17/13		-	40.89	-	3,337.38		
	05/01/13		-	40.98	-	3,337.29		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-2	05/23/13	3,378.27	-	40.94	-	3,337.33		
	06/13/13		-	41.02	-	3,337.25		
	06/28/13		-	41.10	-	3,337.18		
	07/10/13		41.20	41.22	0.02	3,337.07		
	07/24/13		-	41.27	-	3,337.00		
	08/08/13		-	41.39	-	3,336.88		
	08/22/13		-	41.50	-	3,336.77		
	09/05/13		-	41.62	-	3,336.66		
	09/19/13		-	41.73	-	3,336.55		5.00
	10/07/13		-	41.81	-	3,336.47		
	10/17/13		-	41.83	-	3,336.45		
	10/31/13		-	41.77	-	3,336.51		
	11/13/13		-	41.75	-	3,336.53		
	11/27/13		-	41.74	-	3,336.54		
	12/11/13		-	41.74	-	3,336.54		
	12/22/13		-	41.74	-	3,336.54		
	01/09/14		-	41.72	-	3,336.56		
	01/23/14		-	41.74	-	3,336.54		
	02/05/14		-	41.74	-	3,336.54		
	02/20/14		-	41.73	-	3,336.55		
	03/05/14		-	41.71	-	3,336.57		
	03/19/14		-	41.72	-	3,336.56		
	04/02/14		-	41.71	-	3,336.57		
	04/16/14		-	41.72	-	3,336.56		
	05/01/14		-	41.74	-	3,336.54		
	05/13/14		-	41.75	-	3,336.53		
	05/28/14		-	41.81	-	3,336.46		
	06/10/14		-	41.91	-	3,336.36		
	06/24/14		-	42.01	-	3,336.26		
	07/08/14		-	42.11	-	3,336.17		
	07/23/14		-	42.24	-	3,336.03		
	08/05/14		-	42.37	-	3,335.91		
	08/12/14		-	42.42	-	3,335.86		
	09/03/14		-	42.57	-	3,335.70		
	09/16/14		-	42.51	-	3,335.76		
	09/30/14		-	40.78	-	3,337.49		
	10/04/14		-	40.34	-	3,337.93		
	10/21/14		-	39.50	-	3,338.77		
	10/28/14		-	39.37	-	3,338.90		
	11/13/14		-	39.20	-	3,339.07		
	11/25/14		-	39.11	-	3,339.16		
	12/10/14		-	39.13	-	3,339.14		
	12/21/14		-	39.16	-	3,339.11		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-3	08/15/02	3,367.36	-	36.22	-	3,336.51	0.00	0.00
	09/30/02		-	37.13	-	3,335.60	0.00	0.00
	11/06/02		-	35.72	-	3,337.01	0.00	0.00
	02/27/03		36.11	36.34	0.23	3,336.59	0.00	0.00
	03/06/03		35.97	37.06	1.09	3,336.60	0.00	0.00
	03/18/03		-	36.00	-	3,336.73	0.00	0.00
	03/20/03		-	36.05	-	3,336.68	0.00	0.00
	03/27/03		-	36.02	-	3,336.71	0.00	0.00
	04/16/03		-	36.18	-	3,336.55	0.00	0.00
	05/12/03		-	36.24	-	3,336.49	0.00	0.00
	05/21/03		-	36.34	-	3,336.39	0.00	0.00
	06/03/03		-	36.36	-	3,336.37	0.00	0.00
	07/31/03		-	35.47	-	3,337.26	0.00	0.00
	08/06/03		-	37.39	-	3,335.34	0.00	0.00
	08/20/03		-	37.66	-	3,335.07	0.00	0.00
	10/02/03		-	37.71	-	3,335.02	0.00	0.00
	10/07/03		-	38.69	-	3,334.05	0.00	0.00
	10/16/03		-	38.00	-	3,334.73	0.00	0.00
	10/22/03		-	38.09	-	3,334.64	0.00	0.00
	10/28/03		-	38.09	-	3,334.64	0.00	0.00
	11/06/03		-	38.19	-	3,334.54	0.00	0.00
	11/10/03		-	38.21	-	3,334.52	0.00	0.00
	11/18/03		-	37.93	-	3,334.80	0.00	0.00
	11/25/03		-	32.35	-	3,335.01	0.00	0.00
	12/04/03		-	37.93	-	3,334.80	0.00	0.00
	12/17/03		-	37.95	-	3,334.78	0.00	0.00
	12/22/03		-	38.63	-	3,334.11	0.00	0.00
	01/02/04		-	37.85	-	3,334.88	0.00	0.00
	01/19/04		-	38.31	-	3,334.42	0.00	0.00
	01/27/04		-	38.24	-	3,334.49	0.00	0.00
	02/02/04		-	38.34	-	3,334.39	0.00	0.00
	02/17/04		-	37.87	-	3,334.86	0.00	0.00
	02/25/04		-	37.86	-	3,334.87	0.00	0.00
	03/01/04		-	37.84	-	3,334.89	0.00	0.00
	03/10/04		-	37.87	-	3,334.86	0.00	0.00
	03/15/04		-	37.99	-	3,334.74	0.00	0.00
	03/17/04		-	38.27	-	3,334.46	0.00	0.00
	03/22/04		-	38.20	-	3,334.53	0.00	0.00
	03/24/04		-	37.81	-	3,334.92	0.00	0.00
	03/29/04		-	38.29	-	3,334.44	0.00	0.00
	03/31/04		-	38.30	-	3,334.43	0.00	0.00
	04/12/04		36.30	37.94	1.64	3,336.18	0.00	0.00
	04/15/04		-	33.87	-	3,338.86	0.00	0.00
	04/19/04		-	33.29	-	3,339.44	0.00	0.00
	05/06/04		-	33.66	-	3,339.07	0.00	0.00
	06/23/04		33.52	33.57	0.05	3,339.20	0.00	0.00
	06/25/04		33.49	33.56	0.07	3,339.23	0.00	0.00
	06/30/04		33.47	33.52	0.05	3,339.25	0.00	0.00
	08/18/04		-	32.41	-	3,340.32	0.00	0.00
	09/10/04		-	31.95	-	3,340.78	0.00	0.00
	09/21/04		-	32.19	-	3,340.54	0.00	0.00
	10/05/04		-	29.12	-	3,343.61	0.00	0.00

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-3	10/19/04	3,367.36	-	27.05	-	3,345.68	0.00	0.00
	11/02/04		-	27.14	-	3,345.59	0.00	0.00
	11/15/04		-	27.37	-	3,345.36	0.00	0.00
	12/06/04		-	27.62	-	3,345.11	0.00	0.00
	12/21/04		-	27.63	-	3,345.10	0.00	0.00
	01/03/05		-	28.02	-	3,344.71	0.00	0.00
	01/18/05		-	28.25	-	3,344.48	0.00	0.00
	02/01/05		-	28.46	-	3,344.27	0.00	0.00
	02/22/05		-	29.00	-	3,343.73	0.00	0.00
	04/21/05		-	29.24	-	3,343.49	0.00	0.00
	05/05/05		-	29.24	-	3,343.49	0.00	0.00
	05/17/05		-	31.34	-	3,341.39	0.00	0.00
	06/08/05		-	29.56	-	3,343.17	0.00	0.00
	06/15/05		-	29.61	-	3,343.12	0.00	0.00
	06/22/05		-	29.69	-	3,343.04	0.00	0.00
	07/20/05		-	29.96	-	3,342.77	0.00	0.00
	08/15/05		-	29.54	-	3,343.19	0.00	0.00
	08/31/05		-	29.40	-	3,343.33	0.00	0.00
	09/14/05		-	29.44	-	3,343.29	0.00	0.00
	09/28/05		-	29.66	-	3,343.07	0.00	0.00
	11/09/05		-	30.14	-	3,342.59	0.00	0.00
	11/18/05		-	29.86	-	3,342.87	0.00	0.00
	11/30/05*		-	30.23	-	3,342.50	0.00	0.00
	12/14/05		-	30.39	-	3,342.34	0.00	0.00
	12/28/05*		-	30.44	-	3,342.29	0.00	0.00
	01/11/06		-	30.48	-	3,342.25	0.00	0.00
	01/25/06		-	30.65	-	3,342.08	0.00	0.00
	02/08/06		-	30.71	-	3,342.02	0.00	0.00
	02/16/06		-	30.17	-	3,342.56	0.00	0.00
	02/22/06		-	30.74	-	3,341.99	0.00	0.00
	03/08/06		-	30.76	-	3,341.97	0.00	0.00
	04/10/06		-	30.33	-	3,342.40	0.00	0.00
	05/22/06		-	30.53	-	3,342.20	0.00	0.00
	07/12/06		-	30.62	-	3,342.11	0.00	0.00
	08/07/06		-	31.00	-	3,341.73	0.00	0.00
	10/17/06		-	30.36	-	3,342.37	0.00	0.00
	11/21/06		-	30.50	-	3,342.23	0.00	0.00
	12/13/06		-	30.61	-	3,342.12	0.00	0.00
	01/09/07		-	30.91	-	3,341.82	0.00	0.00
	02/14/07		-	30.68	-	3,342.05	0.00	0.00
	02/28/07		-	30.65	-	3,342.08	0.00	0.00
	03/13/07		-	30.69	-	3,342.04	0.00	0.00
	05/11/07		-	30.09	-	3,342.64	0.00	0.00
	05/29/07		-	29.58	-	3,343.15	0.00	0.00
	06/06/07		-	29.59	-	3,343.14	0.00	0.00
	06/21/07		-	29.75	-	3,342.98	0.00	0.00
	07/12/07		-	29.93	-	3,342.80	0.00	0.00
	07/25/07		-	30.18	-	3,342.55	0.00	0.00
	08/08/07		-	32.00	-	3,340.73	0.00	0.00
	08/20/07		-	30.33	-	3,342.40	0.00	0.00
	09/07/07		-	30.48	-	3,342.25	0.00	0.00
	09/19/07		-	32.55	-	3,340.18	0.00	0.00

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-3	10/01/07	3,367.36	-	30.59	-	3,342.14	0.00	0.00
	10/15/07		-	30.61	-	3,342.12	0.00	0.00
	11/02/07		-	30.69	-	3,342.04	0.00	0.00
	11/16/07		-	30.68	-	3,342.05	0.00	0.00
	11/29/07		-	30.28	-	3,342.45	0.00	0.00
	07/10/13		Dry					
	07/24/13		Dry					
	08/08/13		Dry					
	08/22/13		Dry					
	09/05/13		Dry					
	09/19/13		Dry					
	10/07/13		Dry					
	10/17/13		Dry					
	10/31/13		Dry					
	11/13/13		Dry					
	11/27/13		Dry					
	12/11/13		Dry					
	12/22/13		Dry					
	02/29/08		-	25.44	-	3,341.92	0.00	0.00
	05/28/08		-	25.55	-	3,341.81	0.00	0.00
	08/21/08		-	26.11	-	3,341.25	0.00	0.00
	11/06/08		-	25.89	-	3,341.47	0.00	0.00
	02/09/09		-	25.98	-	3,341.38	0.00	0.00
	05/14/09		-	26.18	-	3,341.18	0.00	0.00
	08/13/09		-	26.48	-	3,340.88	0.00	0.00
	11/10/09		-	26.83	-	3,340.53	0.00	0.00
	02/03/10		-	26.80	-	3,340.56	0.00	0.00
	05/25/11		-	30.79	-	3,336.57	0.00	0.00
	05/27/10		-	26.88	-	3,340.48	0.00	0.00
	08/16/10		-	27.13	-	3,340.23	0.00	0.00
	11/11/10		-	27.15	-	3,340.21	0.00	0.00
	09/20/11		Dry					
	10/03/11		Dry					
	10/28/11		Dry					
	11/10/11		Dry					
	12/09/11		Dry					
	02/24/12		Dry					
	02/29/12		Dry					
	03/27/12		Dry					
	04/12/12		Dry					
	04/19/12		Dry					
	05/05/12		Dry					
	05/17/12		Dry					
	06/21/12		Dry					
	07/09/12		Dry					
	08/02/12		Dry					
	08/15/12		Dry					
	08/28/12		Dry					
	09/12/12		Dry					
	09/26/12		Dry					
	10/10/12		Dry					
	10/26/12		Dry					

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

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Lea County, New Mexico

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NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-3	11/07/12	3,367.36	Dry					
	11/20/12		Dry					
	01/11/13		Dry					
	01/25/13		Dry					
	02/07/13		Dry					
	02/22/13		Dry					
	03/08/13		Dry					
	03/21/13		Dry					
	04/04/13		Dry					
	04/17/13		Dry					
	05/01/13		Dry					
	05/23/13		Dry					
	06/13/13		Dry					
	06/28/13		Dry					
	01/09/14		Dry					
	01/23/14		Dry					
	02/05/14		Dry					
	02/20/14		Dry					
	03/05/14		Dry					
	03/19/14		Dry					
	04/02/14		Dry					
	04/16/14		Dry					
	05/01/14		Dry					
	05/13/14		Dry					
	05/28/14		Dry					
	06/10/14		Dry					
	06/24/14		Dry					
	07/08/14		Dry					
	07/23/14		Dry					
	08/05/14		Dry					
	08/12/14		Dry					
	09/03/14		Dry					
	09/16/14		Dry					
	09/30/14		-	26.74	-	3,346.00		
	10/04/14		-	26.87	-	3,345.87		
	10/21/14		Dry					
	10/28/14		Dry					
	11/13/14		Dry					
	11/25/14		Dry					
	12/10/14		Dry					
	12/21/14		Dry					

1. PSH = Phase Separated Hydrocarbons

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2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

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NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-4	08/15/02	3,370.92	34.52	34.85	0.33	3,338.16		
	08/23/02		34.77	35.20	0.43	3,337.90		
	08/27/02		34.84	35.19	0.35	3,337.84		
	08/29/02		34.90	35.20	0.30	3,337.79		
	09/04/02		35.03	35.05	0.02	3,337.70		
	09/30/02		35.48	35.88	0.40	3,337.19		
	10/02/02		35.39	35.85	0.46	3,337.27		
	10/03/02		34.51	34.86	0.35	3,338.17		
	10/08/02		35.57	36.02	0.45	3,337.09		
	10/15/02		35.65	35.97	0.32	3,337.03		
	11/06/02		33.72	33.80	0.08	3,339.00		
	12/27/02		33.79	33.92	0.13	3,338.92		
	01/07/03		-	34.19	-	3,338.54		
	01/27/03		-	34.21	-	3,338.52		
	02/27/03		34.53	34.66	0.13	3,338.18		
	03/06/03		-	34.56	-	3,338.17		
	03/18/03		-	34.63	-	3,338.10		
	03/20/03		-	34.64	-	3,338.09		
	03/27/03		-	34.48	-	3,338.25		
	04/16/03		-	34.81	-	3,337.92		
	05/12/03		-	34.66	-	3,338.07		
	05/21/03		-	34.94	-	3,337.79		
	06/03/03		-	34.92	-	3,337.81		
	07/31/03		-	35.47	-	3,337.26		
	08/06/03		-	35.82	-	3,336.91		
	08/20/03		-	36.03	-	3,336.70		
	10/02/03		-	36.16	-	3,336.57		
	10/07/03		-	36.29	-	3,336.44		
	10/16/03		-	36.54	-	3,336.19		
	10/22/03		-	36.59	-	3,336.14		
	10/28/03		-	36.63	-	3,336.10		
	11/06/03		-	36.75	-	3,335.98		
	11/10/03		-	36.79	-	3,335.94		
	11/18/03		-	36.48	-	3,336.25		
	12/04/03		-	36.76	-	3,335.97		
	12/17/03		-	36.49	-	3,336.24		
	12/22/03		-	36.26	-	3,336.48		
	01/02/04		36.82	36.84	0.02	3,335.91		
	01/19/04		37.22	37.27	0.05	3,335.50		
	01/27/04		37.25	37.28	0.03	3,335.48		
	02/02/04		37.21	37.23	0.02	3,335.52		
	02/17/04		-	36.35	-	3,336.38		
	02/25/04		-	36.36	-	3,336.37		
	03/01/04		-	36.38	-	3,336.35		
	03/10/04		-	36.39	-	3,336.34		
	03/15/04		-	36.60	-	3,336.14		
	03/17/04		-	36.83	-	3,335.90		
	03/22/04		-	37.50	-	3,335.23		
	03/24/04		-	36.43	-	3,336.31		
	03/29/04		-	36.97	-	3,335.76		
	03/31/04		-	37.00	-	3,335.73		
	04/12/04		-	31.34	-	3,341.39		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-4	04/15/04	3,370.92	-	31.42	-	3,341.31		
	04/19/04		-	31.09	-	3,341.64		
	05/06/04		-	31.74	-	3,340.99		
	08/18/04		-	29.70	-	3,343.03		
	09/10/04		-	30.15	-	3,342.58		
	09/21/04		-	30.46	-	3,342.27		
	10/05/04		-	26.47	-	3,346.26		
	10/19/04		-	24.59	-	3,348.14		
	11/02/04		-	24.95	-	3,347.78		
	11/15/04		-	25.48	-	3,347.25		
	12/06/04		-	25.81	-	3,346.92		
	12/21/04		-	25.87	-	3,346.86		
	01/03/05		-	26.28	-	3,346.45		
	01/18/05		-	26.59	-	3,346.14		
	02/01/05		-	26.75	-	3,345.98		
	02/22/05		-	27.38	-	3,345.35		
	04/21/05		-	27.71	-	3,345.02		
	05/05/05		-	27.10	-	3,345.63		
	05/17/05		-	27.81	-	3,344.92		
	06/08/05		-	28.05	-	3,344.68		
	06/15/05		-	28.13	-	3,344.60		
	06/22/05		-	28.17	-	3,344.56		
	07/20/05		-	28.45	-	3,344.28		
	08/15/05		-	28.01	-	3,344.72		
	08/31/05		-	27.80	-	3,344.93		
	09/14/05		-	27.88	-	3,344.85		
	09/28/05		-	28.11	-	3,344.62		
	11/09/05		-	28.63	-	3,344.10		
	11/18/05		-	28.35	-	3,344.38		
	11/30/05		-	28.73	-	3,344.00		
	12/14/05		-	28.81	-	3,343.92		
	12/28/05		-	28.87	-	3,343.86		
	01/11/06		-	28.94	-	3,343.79		
	01/25/06		-	29.09	-	3,343.64		
	02/08/06		-	29.14	-	3,343.59		
	02/16/06		-	28.62	-	3,344.11		
	02/22/06		-	29.20	-	3,343.53		
	03/08/06		-	29.20	-	3,343.53		
	04/10/06		-	28.82	-	3,343.91		
	05/22/06		-	28.97	-	3,343.76		
	07/12/06		-	29.04	-	3,343.69		
	08/07/06		-	29.81	-	3,342.92		
	10/17/06		-	28.79	-	3,343.94		
	11/21/06		-	28.94	-	3,343.79		
	12/13/06		-	29.07	-	3,343.66		
	01/09/07		-	29.41	-	3,343.32		
	02/14/07		-	29.07	-	3,343.66		
	02/28/07		-	29.01	-	3,343.72		
	03/13/07		-	29.06	-	3,343.67		
	04/09/07		-	29.10	-	3,343.63		
	05/11/07		-	28.52	-	3,344.21		
	05/16/07		-	28.12	-	3,344.61		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-4	05/29/07	3,370.92	-	28.02	-	3,344.71		
	06/06/07		-	28.04	-	3,344.69		
	06/21/07		-	28.24	-	3,344.49		
	07/12/07		-	28.42	-	3,344.31		
	07/25/07		-	28.56	-	3,344.17		
	08/08/07		-	28.67	-	3,344.06		
	08/20/07		-	28.80	-	3,343.93		
	09/07/07		-	28.98	-	3,343.75		
	09/19/07		-	29.08	-	3,343.65		
	10/01/07		-	29.09	-	3,343.64		
	10/15/07		-	29.22	-	3,343.51		
	11/02/07		-	29.28	-	3,343.45		
	11/16/07		-	29.32	-	3,343.41		
	11/29/07		-	29.36	-	3,343.37		
	12/27/07		-	30.69	-	3,342.04		
	01/18/08		-	30.78	-	3,341.95		
	02/20/08		-	31.83	-	3,340.90		
	02/29/08		-	30.86	-	3,341.87		
	04/30/08		-	30.82	-	3,341.91		
	05/28/08		-	31.09	-	3,341.64		
	06/25/08		-	37.66	-	3,335.07		
	07/02/08		-	31.28	-	3,341.45		20.00
	07/07/08		-	31.34	-	3,341.39		10.00
	07/14/08		-	34.51	-	3,338.22		25.00
	07/22/08		-	31.39	-	3,341.34		10.00
	07/30/08		-	31.40	-	3,341.33		10.00
	08/05/08		-	31.50	-	3,341.23		10.00
	08/14/08		-	31.55	-	3,341.18		5.00
	08/21/08		-	31.43	-	3,341.30		
	08/27/08		-	31.42	-	3,341.31		25.00
	09/20/08		-	31.34	-	3,341.39		30.00
	09/29/08		-	31.34	-	3,341.39		40.00
	11/06/08		-	31.38	-	3,341.35		
	11/15/08		-	31.40	-	3,341.33		50.00
	11/24/08		-	31.35	-	3,341.38		25.00
	11/26/08		-	31.34	-	3,341.39		25.00
	12/20/08		-	31.39	-	3,341.34		50.00
	01/16/09		-	31.42	-	3,341.31		
	02/09/09		-	31.39	-	3,341.34		
	04/08/09		-	31.10	-	3,341.63		50.00
	04/16/09		-	31.50	-	3,341.23		35.00
	04/22/09		-	31.57	-	3,341.16		50.00
	05/14/09		-	31.58	-	3,341.15		
	07/08/09		-	31.79	-	3,340.94		35.00
	07/24/09		-	31.85	-	3,340.88		
	08/04/09		-	31.85	-	3,340.88		55.00
	08/12/09		-	31.96	-	3,340.77		
	08/19/09		-	31.90	-	3,340.83		32.00
	09/01/09		-	32.00	-	3,340.73		53.50
	09/22/09		-	32.08	-	3,340.65		10.00
	10/12/09		-	32.13	-	3,340.60		17.00
	10/30/09		-	32.27	-	3,340.46		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-4	11/10/09	3,370.92	-	32.22	-	3,340.51		25.00
	01/08/10		-	32.23	-	3,340.50		5.00
	01/22/10		-	32.17	-	3,340.56		10.00
	01/26/10		-	32.26	-	3,340.47		
	02/03/10		-	32.25	-	3,340.48		
	02/10/10		-	32.28	-	3,340.45		50.00
	03/09/10		-	32.20	-	3,340.53		30.00
	03/24/10		-	32.24	-	3,340.49		30.00
	04/12/10		-	32.24	-	3,340.49		30.00
	04/27/10		-	32.25	-	3,340.48		30.00
	05/27/10		-	32.28	-	3,340.45		
	06/21/10		-	32.50	-	3,340.23		40.00
	07/07/10		-	32.40	-	3,340.33		50.00
	07/20/10		-	32.43	-	3,340.30		50.00
	08/03/10		-	32.44	-	3,340.29		50.00
	08/16/10		-	32.53	-	3,340.20		45.00
	09/02/10		-	32.67	-	3,340.06		50.00
	09/17/10		-	32.65	-	3,340.08		50.00
	10/05/10		-	32.70	-	3,340.03		20.00
	11/10/10		-	32.73	-	3,340.00		20.00
	12/15/10		-	32.71	-	3,340.02		20.00
	12/29/10		-	32.68	-	3,340.05		30.00
	02/18/11		-	32.76	-	3,339.97		
	03/02/11		-	32.74	-	3,339.99		25.00
	03/16/11		-	32.73	-	3,340.00		20.00
	03/29/11		-	32.70	-	3,340.03		25.00
	04/15/11		-	32.88	-	3,339.85		30.00
	04/18/11		-	32.85	-	3,339.88		30.00
	04/29/11		-	32.85	-	3,339.88		30.00
	05/06/11		-	32.91	-	3,339.82		25.00
	05/20/11		-	32.98	-	3,339.75		25.00
	05/25/11		-	33.00	-	3,339.73		
	06/01/11		-	32.95	-	3,339.78		20.00
	07/30/11		-	33.53	-	3,339.20		20.00
	09/20/11		-	33.95	-	3,338.79		
	10/03/11		34.06	35.10	1.04	3,338.51		
	10/28/11		34.12	34.23	0.11	3,338.59		
	11/10/11		34.12	34.30	0.18	3,338.58	1.00	20.00
	12/09/11		34.21	34.38	0.17	3,338.49	1.00	20.00
	02/24/12		34.20	34.40	0.20	3,338.50	1.00	20.00
	03/27/12		34.30	34.50	0.20	3,338.40	1.00	20.00
	04/12/12		34.45	34.60	0.15	3,338.26	1.00	20.00
	04/19/12		34.47	34.60	0.13	3,338.24	1.00	20.00
	05/05/12		34.50	34.80	0.30	3,338.19	1.00	20.00
	05/17/12		34.55	34.70	0.15	3,338.16		
	06/21/12		34.75	35.06	0.31	3,337.93	2.00	23.00
	07/09/12		34.92	35.11	0.19	3,337.78		25.00
	08/02/12		29.50	30.00	0.50	3,343.16		
	08/15/12		35.04	35.17	0.13	3,337.67		
	08/28/12		35.14	35.35	0.21	3,337.56		
	09/12/12		35.47	35.70	0.23	3,337.23		25.00
	09/26/12		35.60	35.66	0.06	3,337.12		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-4	10/10/12	3,372.72	35.39	35.53	0.14	3,337.32		25.00
	10/26/12		35.46	35.50	0.04	3,337.26		
	11/06/12		35.49	35.75	0.26	3,337.20		5.00
	11/20/12		35.56	35.70	0.14	3,337.15	2.00	23.00
	01/11/13		-	35.48	-	3,337.25		25.00
	01/25/13		-	35.50	-	3,337.23		25.00
	02/07/13		-	35.52	-	3,337.21		25.00
	02/22/13		35.70	35.76	0.06	3,337.02		
	03/08/13		-	35.65	-	3,337.08		25.00
	03/21/13		-	35.54	-	3,337.19		25.00
	04/04/13		-	35.58	-	3,337.15		25.00
	04/17/13		-	35.57	-	3,337.16		25.00
	05/01/13		-	35.60	-	3,337.13		25.00
	05/23/13		-	35.60	-	3,337.13		25.00
	06/13/13		-	35.71	-	3,337.02		25.00
	06/28/13		-	35.81	-	3,336.93		25.00
	07/10/13		35.90	35.93	0.03	3,336.83		25.00
	07/24/13		35.99	36.03	0.04	3,336.73		
	08/08/13		36.13	36.20	0.07	3,336.59		
	08/22/13		-	36.24	-	3,336.50		25.00
	09/05/13		-	36.34	-	3,336.39		5.00
	09/19/13		-	36.46	-	3,336.28		
	10/07/13		36.51	36.55	0.04	3,336.21	0.25	25.00
	10/17/13		36.49	36.52	0.03	3,336.24	1.00	25.00
	10/31/13		-	36.41	-	3,336.33		25.00
	11/13/13		-	36.38	-	3,336.36		
	11/27/13		-	36.38	-	3,336.36		25.00
	12/11/13		-	36.39	-	3,336.35		25.00
	12/22/13		-	36.40	-	3,336.34		25.00
	01/09/14		-	36.36	-	3,336.38	0.15	25.00
	01/23/14		-	36.40	-	3,336.34	0.10	25.00
	02/05/14		-	36.39	-	3,336.35	0.15	25.00
	02/20/14		-	36.35	-	3,336.38	0.10	
	03/05/14		-	36.36	-	3,336.38	0.10	
	03/19/14		-	36.38	-	3,336.36	0.10	25.00
	04/02/14		-	36.34	-	3,336.40	0.10	25.00
	04/16/14		-	36.37	-	3,336.37		
	05/01/14		-	36.37	-	3,336.37	0.15	25.00
	05/13/14		-	36.40	-	3,336.34	0.10	25.00
	05/28/14		-	36.48	-	3,336.26	0.20	25.00
	06/10/14		-	36.61	-	3,336.13	0.10	30.00
	06/24/14		-	36.76	-	3,335.98	0.10	30.00
	07/08/14		-	36.84	-	3,335.90		
	07/23/14		-	37.00	-	3,335.74	0.50	30.00
	08/05/14		-	37.11	-	3,335.63		30.00
	08/12/14		-	37.13	-	3,335.61	0.15	30.00
	09/03/14		-	37.30	-	3,335.44		30.00
	09/16/14		-	37.07	-	3,335.67		30.00
	09/30/14		-	34.06	-	3,338.68	0.25	30.00
	10/04/14		-	33.79	-	3,338.95	0.40	
	10/21/14		-	33.43	-	3,339.31		30.00
	10/28/14		-	33.44	-	3,339.30	0.40	30.00

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-4	11/13/14	3,370.92	-	33.47	-	3,339.26		30.00
	11/25/14		-	33.54	-	3,339.19	0.53	30.00
	12/10/14		-	33.63	-	3,339.10		30.00
	12/21/14		-	33.67	-	3,339.06		30.00

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2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

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Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-5	08/15/02	3,377.02	-	40.82	-	3,330.10		
	09/30/02		-	41.69	-	3,329.23		
	11/06/02		-	40.45	-	3,330.47		
	02/27/03		-	40.48	-	3,330.44		
	03/18/03		-	40.48	-	3,330.44		
	05/12/03		-	40.75	-	3,330.17		
	08/20/03		-	41.78	-	3,329.14		
	11/10/03		-	42.29	-	3,328.63		
	02/17/04		-	42.35	-	3,328.57		
	05/06/04		-	38.00	-	3,332.92		
	08/18/04		-	37.12	-	3,333.80		
	09/10/04		-	36.59	-	3,334.33		
	09/21/04		-	36.77	-	3,334.15		
	10/05/04		-	34.50	-	3,336.42		
	10/19/04		-	32.34	-	3,338.58		
	11/02/04		-	32.09	-	3,338.83		
	11/15/04		-	32.16	-	3,338.76		
	12/06/04		-	32.32	-	3,338.60		
	12/21/04		-	32.29	-	3,338.63		
	01/03/05		-	32.62	-	3,338.30		
	01/18/05		-	32.83	-	3,338.09		
	02/01/05		-	33.00	-	3,337.92		
	02/22/05		-	33.49	-	3,337.43		
	04/21/05		-	33.72	-	3,337.20		
	05/05/05		-	33.73	-	3,337.19		
	05/17/05		-	33.82	-	3,337.10		
	06/08/05		-	34.05	-	3,336.87		
	06/22/05		-	34.16	-	3,336.76		
	07/20/05		-	34.40	-	3,336.52		
	08/15/05		-	34.03	-	3,336.89		
	08/31/05		-	33.97	-	3,336.95		
	09/14/05		-	33.97	-	3,336.95		
	09/28/05		-	34.14	-	3,336.78		
	11/09/05		-	34.60	-	3,336.32		
	11/18/05		-	34.35	-	3,336.57		
	11/30/05		-	34.68	-	3,336.24		
	12/14/05		-	34.84	-	3,336.08		
	12/28/05		-	34.88	-	3,336.04		
	01/11/06		-	34.97	-	3,335.95		
	01/25/06		-	35.13	-	3,335.79		
	02/08/06		-	35.17	-	3,335.75		
	02/16/06		-	34.61	-	3,336.31		
	02/22/06		-	35.29	-	3,335.63		
	03/08/06		-	35.21	-	3,335.71		
	04/10/06		-	34.77	-	3,336.15		
	05/22/06		-	34.98	-	3,335.94		
	07/12/06		-	35.08	-	3,335.84		
	08/07/06		-	35.62	-	3,335.30		
	10/17/06		-	34.85	-	3,336.07		
	11/21/06		-	34.89	-	3,336.03		
	12/13/06		-	35.09	-	3,335.83		
	01/09/07		-	35.57	-	3,335.35		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-5	02/14/07	3,370.92	-	35.18	-	3,335.74		
	02/28/07		-	35.16	-	3,335.76		
	03/13/07		-	35.21	-	3,335.71		
	05/11/07		-	34.89	-	3,336.03		
	08/10/07		-	34.77	-	3,336.15		
	08/20/07		-	34.85	-	3,336.07		
	12/27/07		-	29.29	-	3,341.63		
	01/18/08		-	29.40	-	3,341.52		
	02/20/08		-	29.43	-	3,341.49		
	02/29/08		-	29.43	-	3,341.49		
	03/11/08		-	29.87	-	3,341.05		
	04/30/08		-	29.45	-	3,341.47		
	05/28/08		-	29.55	-	3,341.37		
	06/25/08		-	29.70	-	3,341.22		
	07/02/08		-	29.75	-	3,341.17		20.00
	07/07/08		-	28.83	-	3,342.09		10.00
	07/14/08		-	29.82	-	3,341.10		25.00
	07/22/08		-	29.87	-	3,341.05		10.00
	07/30/08		-	29.93	-	3,340.99		15.00
	08/05/08		-	29.94	-	3,340.98		15.00
	08/14/08		-	30.06	-	3,340.86		5.00
	08/21/08		-	29.83	-	3,341.09		
	08/27/08		-	29.69	-	3,341.23		25.00
	09/03/08		-		-			25.00
	09/20/08		-	29.75	-	3,341.17		30.00
	09/29/08		-	29.74	-	3,341.18		40.00
	11/06/08		-	29.75	-	3,341.17		
	11/15/08		-	29.89	-	3,341.03		50.00
	11/24/08		-	29.76	-	3,341.16		25.00
	11/26/08		-	29.74	-	3,341.18		25.00
	12/20/08		-	29.79	-	3,341.13		50.00
	01/16/09		-	29.84	-	3,341.08		
	02/09/09		-	29.78	-	3,341.14		
	02/25/09		-		-			50.00
	03/05/09		-		-			50.00
	03/11/09		-		-			50.00
	03/19/09		-		-			50.00
	04/08/09		-	29.91	-	3,341.01		50.00
	04/16/09		-	29.90	-	3,341.02		45.00
	04/22/09		-	30.02	-	3,340.90		30.00
	04/29/09		-	29.92	-	3,341.00		50.00
	05/06/09		-		-			50.00
	05/14/09		-	30.06	-	3,340.86		
	07/08/09		-	30.19	-	3,340.73		30.00
	07/24/09		-	30.23	-	3,340.69		
	08/04/09		-	30.28	-	3,340.64		55.00
	08/12/09		-	29.30	-	3,341.62		
	08/19/09		-	30.31	-	3,340.61		42.00
	09/01/09		-	30.39	-	3,340.53		52.30
	09/22/09		-	30.49	-	3,340.44		10.00
	10/12/09		-	30.54	-	3,340.38		23.00
	10/30/09		-	29.63	-	3,341.29		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-5	11/10/09	3,370.92	-	30.61	-	3,340.31		30.00
	01/08/10		-	30.62	-	3,340.30		5.00
	01/22/10		-	30.56	-	3,340.37		10.00
	01/26/10		-	30.68	-	3,340.24		
	02/03/10		-	30.75	-	3,340.17		
	02/10/10		-	30.66	-	3,340.26		30.00
	02/22/10		-	30.60	-	3,340.32		30.00
	03/09/10		-	30.56	-	3,340.36		30.00
	03/24/10		-	30.60	-	3,340.32		30.00
	04/12/10		-	30.60	-	3,340.32		30.00
	04/27/10		-	30.61	-	3,340.31		30.00
	05/27/10		-	30.90	-	3,340.02		
	06/21/10		-	30.85	-	3,340.07		18.00
	07/07/10		-	30.75	-	3,340.17		20.00
	07/20/10		-	30.67	-	3,340.25		50.00
	08/03/10		-	30.85	-	3,340.07		20.00
	08/16/10		-	30.94	-	3,339.98		20.00
	09/02/10		-	30.97	-	3,339.95		30.00
	09/17/10		-	31.03	-	3,339.89		30.00
	10/05/10		-	31.13	-	3,339.79		25.00
	11/11/10		-	31.12	-	3,339.80		20.00
	12/15/10		-	31.00	-	3,339.92		30.00
	12/29/10		-	31.08	-	3,339.84		20.00
	02/18/11		-	31.16	-	3,339.76		
	03/02/11		-	31.12	-	3,339.80		30.00
	03/16/11		-	31.31	-	3,339.61		20.00
	03/29/11		-	31.15	-	3,339.77		30.00
	04/15/11		-	31.23	-	3,339.69		20.00
	04/18/11		-	31.11	-	3,339.81		20.00
	04/29/11		-	31.16	-	3,339.76		20.00
	05/06/11		-	31.17	-	3,339.75		25.00
	05/20/11		-	31.26	-	3,339.66		25.00
	05/25/11		-	31.30	-	3,339.62		
	06/01/11		-	31.34	-	3,339.58		25.00
	08/18/11		-	32.05	-	3,338.87		
	09/20/11		-	32.23	-	3,338.69		
	10/03/11		-	32.35	-	3,338.57		
	10/28/11		-	32.45	-	3,338.47		
	11/10/11		-	32.42	-	3,338.50		20.00
	12/09/11		-	32.50	-	3,338.42		20.00
	02/24/12		-	32.45	-	3,338.47		20.00
	02/29/12		-	32.48	-	3,338.44		
	03/27/12		-	32.59	-	3,338.33		20.00
	04/12/12		-	32.73	-	3,338.19		20.00
	04/19/12		-	32.85	-	3,338.07		20.00
	05/05/12		-	32.81	-	3,338.11		20.00
	05/17/12		-	32.87	-	3,338.05		
	06/21/12		-	33.01	-	3,337.91		20.00
	07/09/12		-	32.24	-	3,338.68		25.00
	08/02/12		-	33.17	-	3,337.75		
	08/15/12		-	33.27	-	3,337.65		
	08/28/12		-	33.37	-	3,337.55		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-5	09/12/12	3,370.92	-	33.77	-	3,337.15		25.00
	09/26/12		-	33.86	-	3,337.06		
	10/10/12		-	33.60	-	3,337.32		25.00
	10/26/12		-	33.67	-	3,337.25		
	11/06/12		-	33.65	-	3,337.27		
	11/07/12		-	33.65	-	3,337.27		5.00
	11/20/12		-	33.82	-	3,337.10		25.00
	01/11/13		-	33.82	-	3,337.10		25.00
	01/25/13		-	35.87	-	3,335.05		25.00
	02/07/13		-	33.86	-	3,337.06		25.00
	02/22/13		-	33.94	-	3,336.98		
	03/08/13		-	33.82	-	3,337.10		25.00
	03/21/13		-	33.90	-	3,337.02		25.00
	04/04/13		-	33.97	-	3,336.95		25.00
	04/17/13		-	33.90	-	3,337.02		25.00
	05/01/13		-	34.03	-	3,336.89		25.00
	05/23/13		-	33.92	-	3,337.00		25.00
	06/13/13		-	33.94	-	3,336.99		25.00
	06/28/13		-	34.06	-	3,336.87		25.00
	07/10/13		-	34.13	-	3,336.79		25.00
	07/24/13		-	34.20	-	3,336.72		5.00
	08/08/13		-	34.28	-	3,336.64		
	08/22/13		-	34.12	-	3,336.80		25.00
	09/05/13		-	34.54	-	3,336.39		
	09/19/13		-	34.63	-	3,336.29		5.00
	10/07/13		-	34.72	-	3,336.21		15.00
	10/17/13		-	34.69	-	3,336.24		8.00
	10/31/13		-	34.55	-	3,336.38		7.00
	11/13/13		-	34.55	-	3,336.38		
	11/27/13		-	34.52	-	3,336.41		7.00
	12/11/13		-	34.52	-	3,336.41		7.00
	12/22/13		-	34.53	-	3,336.40		7.00
	01/09/14		-	34.49	-	3,336.44	0.15	7.00
	01/23/14		-	34.53	-	3,336.40	0.10	7.00
	02/05/14		-	34.52	-	3,336.41	0.15	7.00
	02/20/14		-	34.55	-	3,336.37	0.10	
	03/05/14		-	34.49	-	3,336.44	0.10	
	03/19/14		-	34.51	-	3,336.42	0.10	7.00
	04/02/14		-	34.47	-	3,336.46	0.10	7.00
	04/16/14		-	34.52	-	3,336.41		
	05/01/14		-	34.48	-	3,336.45	0.25	6.00
	05/13/14		-	34.54	-	3,336.39	0.15	4.00
	05/28/14		-	34.62	-	3,336.31	0.10	3.50
	06/10/14		-	34.78	-	3,336.15	0.10	3.50
	06/24/14		-	34.88	-	3,336.05	0.15	3.50
	07/08/14		-	35.08	-	3,335.85		
	07/23/14		-	35.12	-	3,335.80		3.50
	08/05/14		-	35.25	-	3,335.68	0.15	4.00
	08/12/14		-	35.31	-	3,335.62		4.00
	09/03/14		-	35.48	-	3,335.45		4.00
	09/16/14		-	35.12	-	3,335.81		4.50
	09/30/14		-	31.47	-	3,339.46	0.35	30.00

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-5	10/04/14	3,377.02	-	31.35	-	3,339.58		
	10/21/14		-	31.21	-	3,339.72		30.00
	10/28/14		-	31.29	-	3,339.64	0.30	30.00
	11/13/14		-	31.41	-	3,339.51		30.00
	11/25/14		-	31.54	-	3,339.38	0.31	15.00
	12/10/14		-	31.65	-	3,339.27		30.00
	12/21/14		-	31.74	-	3,339.18		30.00

1. PSH = Phase Separated Hydrocarbons

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2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

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All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-6	11/16/07	3,377.02	-	35.22	-	3,341.80		
	02/29/08		-	35.36	-	3,341.66		
	03/11/08		-	35.37	-	3,341.65		
	05/28/08		-	35.46	-	3,341.56		
	08/21/08		-	35.99	-	3,341.03		
	11/06/08		-	35.94	-	3,341.08		
	02/09/09		-	35.91	-	3,341.11		
	05/14/09		-	35.96	-	3,341.06		
	08/12/09		-	36.53	-	3,340.49		
	11/10/09		-	36.77	-	3,340.25		
	02/03/10		-	36.77	-	3,340.25		
	05/27/10		-	36.83	-	3,340.19		
	08/16/10		-	37.12	-	3,339.90		
	11/11/10		-	37.29	-	3,339.73		
	02/18/11		-	37.61	-	3,339.41		
	05/25/11		-	37.51	-	3,339.51		
	08/18/11		-	38.25	-	3,338.77		
	09/20/11		-	38.40	-	3,338.62		
	10/03/11		-	38.54	-	3,338.48		
	10/28/11		-	38.60	-	3,338.42		
	11/10/11		-	38.60	-	3,338.42		
	12/09/11		-	38.70	-	3,338.32		
	02/24/12		-	38.68	-	3,338.34		
	02/29/12		-	38.73	-	3,338.29		
	03/27/12		-	38.79	-	3,338.23		
	04/12/12		-	38.88	-	3,338.14		
	04/19/12		-	38.90	-	3,338.12		
	05/05/12		-	38.90	-	3,338.12		
	05/17/12		-	38.95	-	3,338.07		
	06/21/12		-	39.14	-	3,337.88		
	07/09/12		-	39.26	-	3,337.76		
	08/02/12		-	39.40	-	3,337.62		
	08/15/12		-	39.53	-	3,337.49		5.00
	08/28/12		-	39.61	-	3,337.41		
	09/12/12		-	39.84	-	3,337.18		
	09/26/12		-	39.92	-	3,337.10		
	10/10/12		-	39.90	-	3,337.12		
	10/26/12		-	39.92	-	3,337.10		
	11/07/12		-	39.92	-	3,337.10		5.00
	11/20/12		-	39.95	-	3,337.07		
	01/11/13		-	39.96	-	3,337.06		
	01/25/13		-	39.98	-	3,337.04		
	02/07/13		-	40.00	-	3,337.02		
	02/22/13		-	40.10	-	3,336.92		
	03/08/13		-	38.86	-	3,338.16		
	03/21/13		-	39.96	-	3,337.06		
	04/04/13		-	40.14	-	3,336.88		
	04/17/13		-	40.07	-	3,336.95		
	05/01/13		-	40.17	-	3,336.85		
	05/23/13		-	40.10	-	3,336.92		
	06/13/13		-	40.19	-	3,336.83		
	06/28/13		-	40.30	-	3,336.73		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-6	07/10/13	3,377.02	-	40.40	-	3,336.62		
	07/24/13		-	40.45	-	3,336.57		
	08/08/13		-	40.56	-	3,336.46		
	08/22/13		-	40.69	-	3,336.33		
	09/05/13		-	40.82	-	3,336.21		
	09/19/13		-	40.92	-	3,336.10		5.00
	10/07/13		-	41.00	-	3,336.03		
	10/17/13		-	41.00	-	3,336.03		
	10/31/13		-	41.00	-	3,336.03		
	11/13/13		-	40.89	-	3,336.14		
	11/27/13		-	40.86	-	3,336.17		
	12/11/13		-	40.86	-	3,336.16		
	12/22/13		-	40.88	-	3,336.15		
	01/09/14		-	40.85	-	3,336.18		
	01/23/14		-	40.89	-	3,336.14		
	02/05/14		-	40.89	-	3,336.14		
	02/20/14		-	40.86	-	3,336.16		
	03/05/14		-	40.84	-	3,336.19		
	03/19/14		-	40.86	-	3,336.17		
	04/02/14		-	40.83	-	3,336.20		
	04/16/14		-	40.83	-	3,336.20		
	05/01/14		-	40.86	-	3,336.16		
	05/13/14		-	40.89	-	3,336.14		
	05/28/14		-	40.96	-	3,336.07		
	06/10/14		-	41.07	-	3,335.95		
	06/24/14		-	41.20	-	3,335.83		
	07/08/14		-	41.28	-	3,335.75		
	07/23/14		-	41.42	-	3,335.60		
	08/05/14		-	41.54	-	3,335.48		
	08/12/14		-	41.58	-	3,335.45		
	09/03/14		-	41.75	-	3,335.28		
	09/16/14		-	41.55	-	3,335.47		
	09/30/14		-	38.95	-	3,338.08		
	10/04/14		-	38.54	-	3,338.48		
	10/21/14		-	38.03	-	3,338.99		
	10/28/14		-	38.01	-	3,339.01		
	11/13/14		-	38.00	-	3,339.02		
	11/25/14		-	38.07	-	3,338.95		
	12/10/14		-	38.13	-	3,338.89		
	12/21/14		-	38.17	-	3,338.85		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-7	08/15/02	3,369.47	-	32.73	-	3,336.74		
	09/30/02		-	33.65	-	3,335.82		
	11/06/02		-	31.70	-	3,337.77		
	02/27/03		-	32.45	-	3,337.02		
	03/18/03		-	32.48	-	3,336.99		
	05/12/03		-	32.71	-	3,336.76		
	08/20/03		-	33.82	-	3,335.65		
	11/10/03		-	34.35	-	3,335.12		
	02/17/04		-	34.33	-	3,335.14		
	05/06/04		-	29.40	-	3,340.07		
	08/18/04		-	28.47	-	3,341.00		
	09/10/04		-	28.27	-	3,341.20		
	09/21/04		-	28.59	-	3,340.88		
	10/05/04		-	23.93	-	3,345.54		
	10/19/04		-	22.28	-	3,347.19		
	11/02/04		-	22.32	-	3,347.15		
	11/15/04		-	23.54	-	3,345.93		
	12/06/04		-	23.91	-	3,345.56		
	12/21/04		-	24.03	-	3,345.44		
	01/03/05		-	24.47	-	3,345.00		
	01/18/05		-	24.75	-	3,344.72		
	02/01/05		-	24.94	-	3,344.53		
	02/22/05		-	25.57	-	3,343.90		
	04/21/05		-	25.80	-	3,343.67		
	05/05/05		-	25.79	-	3,343.68		
	05/17/05		-	25.93	-	3,343.54		
	06/08/05		-	26.16	-	3,343.31		
	06/22/05		-	26.26	-	3,343.21		
	07/20/05		-	26.54	-	3,342.93		
	08/15/05		-	26.09	-	3,343.38		
	08/31/05		-	25.87	-	3,343.60		
	09/14/05		-	25.90	-	3,343.57		
	09/28/05		-	26.22	-	3,343.25		
	11/09/05		-	26.75	-	3,342.72		
	11/18/05		-	26.45	-	3,343.02		
	11/30/05		-	26.87	-	3,342.60		
	12/14/05		-	26.99	-	3,342.48		
	12/28/05		-	27.04	-	3,342.43		
	01/11/06		-	27.08	-	3,342.39		
	01/25/06		-	27.23	-	3,342.24		
	02/08/06		-	27.28	-	3,342.19		
	02/16/06		-	26.80	-	3,342.67		
	02/22/06		-	27.32	-	3,342.15		
	03/08/06		-	27.34	-	3,342.13		
	04/10/06		-	27.01	-	3,342.46		
	05/22/06		-	27.17	-	3,342.30		
	07/12/06		-	27.20	-	3,342.27		
	08/07/06		-	27.61	-	3,341.86		
	10/17/06		-	26.97	-	3,342.50		
	11/21/06		-	27.14	-	3,342.33		
	12/13/06		-	27.20	-	3,342.27		
	01/09/07		-	27.49	-	3,341.98		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-7	02/14/07	3,369.47	-	27.31	-	3,342.16		
	02/28/07		-	27.22	-	3,342.25		
	03/13/07		-	27.27	-	3,342.20		
	05/11/07		-	26.35	-	3,343.12		
	08/20/07		-	27.92	-	3,341.55		
	11/16/07		-	27.26	-	3,342.21		
	02/29/08		-	27.43	-	3,342.04		
	05/28/08		-	27.54	-	3,341.93		
	08/21/08		-	28.09	-	3,341.38		
	11/06/08		-	27.89	-	3,341.58		
	02/09/09		-	27.97	-	3,341.50		
	05/14/09		-	28.29	-	3,341.18		
	08/13/09		-	28.46	-	3,341.01		
	11/10/09		-	28.80	-	3,340.67		
	02/03/10		-	28.80	-	3,340.67		
	05/27/10		-	28.87	-	3,340.60		
	08/16/10		-	29.12	-	3,340.35		
	11/11/10		-	29.31	-	3,340.16		
	02/18/11		-	29.33	-	3,340.14		
	05/25/11		-	29.58	-	3,339.89		
	09/20/11		-	30.56	-	3,338.91		
	10/03/11		-	30.66	-	3,338.81		
	10/28/11		-	30.73	-	3,338.74		
	11/10/11		-	30.74	-	3,338.73		
	12/09/11		-	30.77	-	3,338.70		
	02/24/12		-	30.75	-	3,338.72		
	02/29/12		-	30.79	-	3,338.68		
	03/27/12		-	30.90	-	3,338.57		
	04/12/12		-	31.02	-	3,338.45		
	04/19/12		-	31.06	-	3,338.41		
	05/05/12		-	31.13	-	3,338.34		
	05/17/12		-	31.18	-	3,338.29		
	06/21/12		-	31.15	-	3,338.32		
	07/09/12		-	31.59	-	3,337.88		
	08/02/12		-	31.53	-	3,337.94		
	08/15/12		-	31.65	-	3,337.82		5.00
	08/28/12		-	31.76	-	3,337.71		
	09/12/12		-	32.16	-	3,337.31		
	09/26/12		-	32.23	-	3,337.24		
	10/10/12		-	31.98	-	3,337.49		
	10/26/12		-	31.99	-	3,337.48		
	11/06/12		-	32.03	-	3,337.44		5.00
	11/20/12		-	32.02	-	3,337.45		
	01/11/13		-	32.02	-	3,337.45		
	01/25/13		-	32.04	-	3,337.43		
	02/07/13		-	32.04	-	3,337.43		
	02/22/13		-	33.33	-	3,336.14		
	03/08/13		-	32.04	-	3,337.43		
	03/21/13		-	32.11	-	3,337.36		
	04/04/13		-	32.17	-	3,337.30		
	04/17/13		-	32.10	-	3,337.37		
	05/01/13		-	32.19	-	3,337.28		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-7	05/23/13	3,369.47	-	32.15	-	3,337.32		
	06/13/13		-	32.27	-	3,337.21		
	06/28/13		-	32.38	-	3,337.10		
	07/10/13		-	32.46	-	3,337.02		
	07/24/13		-	32.54	-	3,336.93		
	08/08/13		-	32.66	-	3,336.81		
	08/22/13		-	32.81	-	3,336.66		
	09/05/13		-	32.93	-	3,336.55		
	09/19/13		-	33.01	-	3,336.46		5.00
	10/07/13		-	33.08	-	3,336.39		
	10/17/13		-	33.07	-	3,336.40		
	10/31/13		-	32.94	-	3,336.53		
	11/13/13		-	32.91	-	3,336.56		
	11/27/13		-	32.90	-	3,336.58		
	12/11/13		-	32.90	-	3,336.58		
	12/22/13		-	32.89	-	3,336.59		
	01/09/14		-	32.88	-	3,336.60		
	01/23/14		-	32.90	-	3,336.58		
	02/05/14		-	32.90	-	3,336.58		
	02/20/14		-	32.87	-	3,336.61		
	03/05/14		-	32.88	-	3,336.60		
	03/19/14		-	32.88	-	3,336.60		
	04/02/14		-	32.85	-	3,336.63		
	04/16/14		-	32.83	-	3,336.65		
	05/01/14		-	32.87	-	3,336.60		
	05/13/14		-	32.89	-	3,336.58		
	05/28/14		-	33.00	-	3,336.48		
	06/10/14		-	33.16	-	3,336.32		
	06/24/14		-	33.26	-	3,336.21		
	07/08/14		-	33.39	-	3,336.09		
	07/23/14		-	33.53	-	3,335.94		
	08/05/14		-	33.63	-	3,335.84		
	08/12/14		-	33.69	-	3,335.78		
	09/03/14		-	33.87	-	3,335.61		
	09/16/14		-	33.51	-	3,335.96		
	09/30/14		-	29.61	-	3,339.87		
	10/04/14		-	29.49	-	3,339.98		
	10/21/14		-	29.64	-	3,339.83		
	10/28/14		-	29.73	-	3,339.74		
	11/13/14		-	29.86	-	3,339.61		
	11/25/14		-	29.97	-	3,339.50		
	12/10/14		-	30.08	-	3,339.39		
	12/21/14		-	30.14	-	3,339.33		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-8	08/15/02	3,373.77	-	37.15	-	3,336.62		
	09/30/02		-	37.95	-	3,335.82		
	11/06/02		-	36.70	-	3,337.07		
	02/27/03		-	36.83	-	3,336.94		
	03/18/03		-	36.85	-	3,336.92		
	05/12/03		-	37.09	-	3,336.68		
	08/20/03		-	38.11	-	3,335.66		
	11/10/03		-	38.67	-	3,335.10		
	02/17/04		-	38.71	-	3,335.06		
	05/06/04		-	34.26	-	3,339.51		
	08/18/04		-	33.38	-	3,340.39		
	09/10/04		-	32.86	-	3,340.91		
	09/21/04		-	33.10	-	3,340.67		
	10/05/04		-	30.25	-	3,343.52		
	10/19/04		-	28.05	-	3,345.72		
	11/02/04		-	28.15	-	3,345.62		
	11/15/04		-	28.32	-	3,345.45		
	12/06/04		-	28.51	-	3,345.26		
	12/21/04		-	28.54	-	3,345.23		
	01/03/05		-	28.89	-	3,344.88		
	01/18/05		-	29.14	-	3,344.63		
	02/01/05		-	29.32	-	3,344.45		
	02/22/05		-	29.78	-	3,343.99		
	04/21/05		-	30.10	-	3,343.67		
	05/05/05		-	30.07	-	3,343.70		
	05/17/05		-	30.19	-	3,343.58		
	06/08/05		-	30.39	-	3,343.38		
	06/22/05		-	30.52	-	3,343.25		
	07/20/05		-	30.78	-	3,342.99		
	08/15/05		-	30.40	-	3,343.37		
	08/31/05		-	30.24	-	3,343.53		
	09/14/05		-	30.27	-	3,343.50		
	09/28/05		-	30.45	-	3,343.32		
	11/09/05		-	30.98	-	3,342.79		
	11/18/05		-	30.70	-	3,343.07		
	11/30/05		-	31.06	-	3,342.71		
	12/14/05		-	31.21	-	3,342.56		
	12/28/05		-	31.26	-	3,342.51		
	01/11/06		-	31.31	-	3,342.46		
	01/25/06		-	31.48	-	3,342.29		
	02/08/06		-	31.54	-	3,342.23		
	02/16/06		-	31.00	-	3,342.77		
	02/22/06		-	31.57	-	3,342.20		
	03/08/06		-	31.58	-	3,342.19		
	04/10/06		-	31.18	-	3,342.59		
	05/22/06		-	31.36	-	3,342.41		
	07/12/06		-	31.42	-	3,342.35		
	08/07/06		-	31.83	-	3,341.94		
	10/17/06		-	31.22	-	3,342.55		
	11/21/06		-	31.37	-	3,342.40		
	12/13/06		-	31.45	-	3,342.32		
	01/09/07		-	31.73	-	3,342.04		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-8	02/14/07	3,373.77	-	31.55	-	3,342.22		
	02/28/07		-	31.53	-	3,342.24		
	03/13/07		-	31.58	-	3,342.19		
	05/11/07		-	31.10	-	3,342.67		
	08/20/07		-	31.21	-	3,342.56		
	11/16/07		-	31.58	-	3,342.19		
	02/29/08		-	31.72	-	3,342.05		
	05/28/08		-	31.96	-	3,341.81		
	08/21/08		-	32.33	-	3,341.44		
	11/06/08		-	32.19	-	3,341.58		
	02/09/09		-	32.27	-	3,341.50		
	05/14/09		-	32.52	-	3,341.25		
	08/12/09		-	32.78	-	3,340.99		
	11/10/09		-	33.09	-	3,340.68		
	02/03/10		-	33.09	-	3,340.68		
	05/27/10		-	33.16	-	3,340.61		
	08/16/10		-	33.39	-	3,340.38		
	11/11/10		-	33.59	-	3,340.18		
	02/18/11		-	33.63	-	3,340.14		
	05/25/11		-	33.85	-	3,339.92		
	09/20/11		-	34.80	-	3,338.97		
	10/03/11		-	34.92	-	3,338.85		
	10/28/11		-	35.00	-	3,338.77		
	11/10/11		-	35.30	-	3,338.47		
	12/09/11		-	35.10	-	3,338.67		
	02/24/12		-	35.06	-	3,338.71		
	02/29/12		-	35.02	-	3,338.75		
	03/27/12		-	35.21	-	3,338.56		
	04/12/12		-	35.33	-	3,338.44		
	04/19/12		-	35.35	-	3,338.42		
	05/05/12		-	35.40	-	3,338.37		
	05/17/12		-	35.45	-	3,338.32		
	06/21/12		-	35.63	-	3,338.14		
	07/09/12		-	35.79	-	3,337.98		
	08/02/12		-	35.82	-	3,337.95		
	08/15/12		-	35.93	-	3,337.84		5.00
	08/28/12		-	36.06	-	3,337.71		
	09/12/12		-	36.37	-	3,337.40		
	09/26/12		-	36.44	-	3,337.33		
	10/10/12		-	36.28	-	3,337.49		
	10/26/12		-	36.33	-	3,337.44		
	11/06/12		-	36.36	-	3,337.41		5.00
	11/20/12		-	36.39	-	3,337.38		
	01/11/13		-	36.40	-	3,337.37		
	01/25/13		-	38.75	-	3,335.02		
	02/07/13		-	36.40	-	3,337.37		
	02/22/13		-	36.58	-	3,337.19		
	03/08/13		-	36.44	-	3,337.33		
	03/21/13		-	36.40	-	3,337.37		
	04/04/13		-	36.54	-	3,337.23		
	04/17/13		-	36.47	-	3,337.30		
	05/01/13		-	36.61	-	3,337.16		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-8	05/23/13	3,373.77	-	36.53	-	3,337.24		
	06/13/13		-	36.64	-	3,337.14		
	06/28/13		-	36.74	-	3,337.04		
	07/10/13		-	36.83	-	3,336.94		
	07/24/13		-	36.89	-	3,336.88		
	08/08/13		-	36.97	-	3,336.80		
	08/22/13		-	37.14	-	3,336.63		
	09/05/13		-	37.25	-	3,336.53		
	09/19/13		-	37.36	-	3,336.42		5.00
	10/07/13		-	37.43	-	3,336.34		
	10/17/13		-	37.45	-	3,336.33		
	10/31/13		-	37.34	-	3,336.44		
	11/13/13		-	37.30	-	3,336.47		
	11/27/13		-	37.31	-	3,336.47		
	12/11/13		-	37.29	-	3,336.48		
	12/22/13		-	37.32	-	3,336.46		
	01/09/14		-	37.28	-	3,336.50		
	01/23/14		-	37.31	-	3,336.47		
	02/05/14		-	37.32	-	3,336.46		
	02/20/14		-	37.30	-	3,336.48		
	03/05/14		-	37.28	-	3,336.50		
	03/19/14		-	37.30	-	3,336.48		
	04/02/14		-	37.28	-	3,336.50		
	04/16/14		-	37.24	-	3,336.54		
	05/01/14		-	37.25	-	3,336.52		
	05/13/14		-	37.33	-	3,336.45		
	05/28/14		-	37.40	-	3,336.38		
	06/10/14		-	37.53	-	3,336.25		
	06/24/14		-	37.59	-	3,336.18		
	07/08/14		-	37.72	-	3,336.06		
	07/23/14		-	37.86	-	3,335.91		
	08/05/14		-	37.97	-	3,335.80		
	08/12/14		-	38.04	-	3,335.74		
	09/03/14		-	38.19	-	3,335.58		
	09/16/14		-	38.01	-	3,335.76		
	09/30/14		-	35.22	-	3,338.55		
	10/04/14		-	34.85	-	3,338.92		
	10/21/14		-	34.48	-	3,339.29		
	10/28/14		-	34.48	-	3,339.29		
	11/13/14		-	34.46	-	3,339.31		
	11/25/14		-	34.53	-	3,339.24		
	12/10/14		-	34.57	-	3,339.20		
	12/21/14		-	34.63	-	3,339.14		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-9	08/15/02	3,375.92	-	39.60	-	3,336.32		
	09/30/02		-	40.46	-	3,335.46		
	11/06/02		-	39.30	-	3,336.62		
	02/27/03		-	39.18	-	3,336.74		
	03/18/03		-	39.30	-	3,336.62		
	05/12/03		-	39.53	-	3,336.39		
	10/02/03		-	40.50	-	3,335.42		
	11/10/03		-	41.00	-	3,334.92		
	02/17/04		-	41.12	-	3,334.80		
	05/06/04		-	36.71	-	3,339.21		
	08/18/04		-	35.89	-	3,340.03		
	09/10/04		-	35.33	-	3,340.59		
	09/21/04		-	35.55	-	3,340.37		
	10/05/04		-	33.03	-	3,342.89		
	10/19/04		-	30.96	-	3,344.96		
	11/02/04		-	31.78	-	3,344.14		
	11/15/04		-	30.98	-	3,344.94		
	12/06/04		-	31.12	-	3,344.80		
	12/21/04		-	31.08	-	3,344.84		
	01/03/05		-	31.37	-	3,344.55		
	01/18/05		-	31.62	-	3,344.30		
	02/01/05		-	31.78	-	3,344.14		
	02/22/05		-	32.24	-	3,343.68		
	04/21/05		-	32.57	-	3,343.35		
	05/05/05		-	32.57	-	3,343.35		
	05/17/05		-	32.65	-	3,343.27		
	06/08/05		-	32.85	-	3,343.07		
	06/22/05		-	32.98	-	3,342.94		
	07/20/05		-	33.20	-	3,342.72		
	08/15/05		-	32.85	-	3,343.07		
	08/31/05		-	32.71	-	3,343.21		
	09/14/05		-	32.73	-	3,343.19		
	09/28/05		-	32.91	-	3,343.01		
	11/09/05		-	33.38	-	3,342.54		
	11/18/05		-	33.14	-	3,342.78		
	11/30/05		-	33.48	-	3,342.44		
	12/14/05		-	33.46	-	3,342.46		
	12/28/05		-	33.69	-	3,342.23		
	01/11/06		-	33.76	-	3,342.16		
	01/25/06		-	33.93	-	3,341.99		
	02/08/06		-	33.96	-	3,341.96		
	02/16/06		-	33.45	-	3,342.47		
	02/22/06		-	34.01	-	3,341.91		
	03/08/06		-	34.01	-	3,341.91		
	04/10/06		-	33.61	-	3,342.31		
	05/22/06		-	33.78	-	3,342.14		
	07/12/06		-	33.85	-	3,342.07		
	08/07/06		-	34.23	-	3,341.69		
	10/17/06		-	33.68	-	3,342.24		
	11/21/06		-	33.83	-	3,342.09		
	12/13/06		-	33.93	-	3,341.99		
	01/09/07		-	34.18	-	3,341.74		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-9	02/14/07	3,375.92	-	33.99	-	3,341.93		
	02/28/07		-	33.96	-	3,341.96		
	03/13/07		-	34.01	-	3,341.91		
	05/11/07		-	33.64	-	3,342.28		
	08/10/07		-	33.54	-	3,342.38		
	08/20/07		-	33.65	-	3,342.27		
	11/16/07		-	34.02	-	3,341.90		
	02/29/08		-	34.18	-	3,341.74		
	05/28/08		-	34.45	-	3,341.47		
	08/21/08		-	34.79	-	3,341.13		
	11/06/08		-	34.84	-	3,341.08		
	02/09/09		-	34.71	-	3,341.21		
	05/14/09		-	34.23	-	3,341.69		
	08/12/09		-	35.16	-	3,340.76		
	11/10/09		-	35.51	-	3,340.41		
	02/03/10		-	35.51	-	3,340.41		
	05/27/10		-	35.58	-	3,340.34		
	08/16/10		-	35.03	-	3,340.89		
	11/11/10		-	35.98	-	3,339.94		
	05/25/11		-	36.35	-	3,339.57		
	08/18/11		-	36.95	-	3,338.97		
	09/20/11		-	37.20	-	3,338.72		
	10/03/11		-	37.33	-	3,338.59		
	10/28/11		-	37.38	-	3,338.54		
	11/10/11		-	37.40	-	3,338.52		
	12/09/11		-	37.48	-	3,338.44		
	02/24/12		-	37.52	-	3,338.40		
	02/29/12		-	37.59	-	3,338.33		
	03/27/12		-	37.59	-	3,338.33		
	04/12/12		-	37.68	-	3,338.24		
	04/19/12		-	37.71	-	3,338.21		
	05/05/12		-	37.73	-	3,338.19		
	05/17/12		-	37.76	-	3,338.16		
	06/21/12		-	37.94	-	3,337.98		
	07/09/12		-	38.09	-	3,337.83		
	08/02/12		-	38.17	-	3,337.75		
	08/15/12		-	38.28	-	3,337.64		5.00
	08/28/12		-	38.40	-	3,337.52		
	09/12/12		-	38.52	-	3,337.40		
	09/26/12		-	38.75	-	3,337.17		
	10/10/12		-	38.68	-	3,337.24		
	10/26/12		-	38.72	-	3,337.20		
	11/06/12		-	38.71	-	3,337.21		5.00
	11/20/12		-	38.76	-	3,337.16		
	01/11/13		-	38.73	-	3,337.19		
	01/25/13		-	36.40	-	3,339.52		
	02/07/13		-	38.78	-	3,337.14		
	02/22/13		-	39.95	-	3,335.97		
	03/08/13		-	38.78	-	3,337.14		
	03/21/13		-	38.81	-	3,337.11		
	04/04/13		-	38.99	-	3,336.93		
	04/17/13		-	38.82	-	3,337.10		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-9	05/01/13	3,375.92	-	38.96	-	3,336.96		
	05/23/13		-	38.90	-	3,337.02		
	06/13/13		-	39.01	-	3,336.92		
	06/28/13		-	39.10	-	3,336.83		
	07/10/13		-	39.19	-	3,336.73		
	07/24/13		-	39.25	-	3,336.67		
	08/08/13		-	39.35	-	3,336.57		
	08/22/13		-	39.50	-	3,336.42		
	09/05/13		-	39.61	-	3,336.32		
	09/19/13		-	39.72	-	3,336.21		5.00
	10/07/13		-	39.80	-	3,336.13		
	10/17/13		-	39.81	-	3,336.12		
	10/31/13		-	39.70	-	3,336.23		
	11/13/13		-	39.70	-	3,336.23		
	11/27/13		-	39.68	-	3,336.25		
	12/11/13		-	39.68	-	3,336.25		
	12/22/13		-	39.69	-	3,336.24		
	01/09/14		-	39.66	-	3,336.27		
	01/23/14		-	39.69	-	3,336.24		
	02/05/14		-	39.70	-	3,336.23		
	02/20/14		-	39.65	-	3,336.27		
	03/05/14		-	39.70	-	3,336.23		
	03/19/14		-	39.68	-	3,336.25		
	04/02/14		-	39.63	-	3,336.29		
	04/16/14		-	39.64	-	3,336.28		
	05/01/14		-	39.64	-	3,336.29		
	05/13/14		-	39.70	-	3,336.23		
	05/28/14		-	39.77	-	3,336.16		
	06/10/14		-	39.88	-	3,336.04		
	06/24/14		-	39.96	-	3,335.96		
	07/08/14		-	40.10	-	3,335.83		
	07/23/14		-	40.22	-	3,335.70		
	08/05/14		-	40.33	-	3,335.59		
	08/12/14		-	40.40	-	3,335.53		
	09/03/14		-	40.56	-	3,335.36		
	09/16/14		-	40.37	-	3,335.55		
	09/30/14		-	37.78	-	3,338.15		
	10/04/14		-	37.38	-	3,338.54		
	10/21/14		-	36.88	-	3,339.04		
	10/28/14		-	36.85	-	3,339.07		
	11/13/14		-	36.83	-	3,339.09		
	11/25/14		-	36.90	-	3,339.02		
	12/10/14		-	36.94	-	3,338.98		
	12/21/14		-	37.00	-	3,338.92		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-10	08/15/02	3,370.17	-	33.66	-	3,336.51		
	09/30/02		-	34.59	-	3,335.58		
	11/06/02		-	32.40	-	3,337.77		
	02/27/03		-	33.35	-	3,336.82		
	03/18/03		-	33.37	-	3,336.80		
	05/12/03		-	33.65	-	3,336.52		
	08/20/03		-	34.70	-	3,335.47		
	11/10/03		-	35.27	-	3,334.90		
	02/17/04		-	35.27	-	3,334.90		
	05/06/04		-	30.04	-	3,340.13		
	08/18/04		-	29.13	-	3,341.04		
	09/10/04		-	29.08	-	3,341.09		
	09/21/04		-	29.48	-	3,340.69		
	10/05/04		-	24.20	-	3,345.97		
	10/19/04		-	22.80	-	3,347.37		
	11/02/04		-	22.98	-	3,347.19		
	11/15/04		-	24.31	-	3,345.86		
	12/06/04		-	24.74	-	3,345.43		
	12/21/04		-	24.85	-	3,345.32		
	01/03/05		-	25.31	-	3,344.86		
	01/18/05		-	25.63	-	3,344.54		
	02/01/05		-	25.84	-	3,344.33		
	02/22/05		-	26.45	-	3,343.72		
	04/21/05		-	26.74	-	3,343.43		
	05/05/05		-	26.75	-	3,343.42		
	05/17/05		-	26.85	-	3,343.32		
	06/08/05		-	27.07	-	3,343.10		
	06/22/05		-	27.21	-	3,342.96		
	07/20/05		-	27.46	-	3,342.71		
	08/15/05		-	26.96	-	3,343.21		
	08/31/05		-	26.76	-	3,343.41		
	09/14/05		-	26.90	-	3,343.27		
	09/28/05		-	27.16	-	3,343.01		
	11/09/05		-	27.68	-	3,342.49		
	11/18/05		-	27.43	-	3,342.74		
	11/30/05		-	27.75	-	3,342.42		
	12/14/05		-	27.93	-	3,342.24		
	12/28/05		-	27.98	-	3,342.19		
	01/11/06		-	28.01	-	3,342.16		
	01/25/06		-	28.17	-	3,342.00		
	02/08/06		-	28.23	-	3,341.94		
	02/16/06		-	27.80	-	3,342.37		
	02/22/06		-	28.27	-	3,341.90		
	03/08/06		-	28.26	-	3,341.91		
	04/10/06		-	27.93	-	3,342.24		
	05/22/06		-	28.05	-	3,342.12		
	07/12/06		-	28.13	-	3,342.04		
	08/07/06		-	28.51	-	3,341.66		
	10/17/06		-	27.87	-	3,342.30		
	11/21/06		-	28.06	-	3,342.11		
	12/13/06		-	28.15	-	3,342.02		
	01/09/07		-	28.41	-	3,341.76		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-10	02/14/07	3,370.17	-	28.22	-	3,341.95		
	02/28/07		-	28.14	-	3,342.03		
	03/13/07		-	28.20	-	3,341.97		
	05/11/07		-	27.31	-	3,342.86		
	08/10/07		-	27.76	-	3,342.41		
	08/20/07		-	27.88	-	3,342.29		
	11/16/07		-	28.20	-	3,341.97		
	02/29/08		-	28.42	-	3,341.75		
	05/28/08		-	28.48	-	3,341.69		
	08/21/08		-	29.04	-	3,341.13		
	11/06/08		-	28.82	-	3,341.35		
	02/09/09		-	28.91	-	3,341.26		
	05/14/09		-	29.07	-	3,341.10		
	08/12/09		-	29.34	-	3,340.83		
	11/10/09		-	29.77	-	3,340.40		
	02/03/10		-	29.75	-	3,340.42		
	05/27/10		-	29.82	-	3,340.35		
	08/16/10		-	30.06	-	3,340.11		
	11/11/10		-	30.32	-	3,339.85		
	02/18/11		-	30.30	-	3,339.87		
	05/25/11		-	30.51	-	3,339.66		
	08/18/11		-	32.05	-	3,338.12		
	09/20/11		-	31.50	-	3,338.67		
	10/03/11		-	31.61	-	3,338.56		
	10/28/11		-	31.66	-	3,338.51		
	11/10/11		-	31.66	-	3,338.51		
	12/09/11		-	31.69	-	3,338.48		
	02/24/12		-	31.68	-	3,338.49		
	02/29/12		-	31.70	-	3,338.47		
	03/27/12		-	31.70	-	3,338.47		
	04/12/12		-	31.91	-	3,338.26		
	04/19/12		-	31.97	-	3,338.20		
	05/05/12		-	32.04	-	3,338.13		
	05/17/12		-	32.07	-	3,338.10		
	06/21/12		-	32.03	-	3,338.14		
	07/09/12		-	32.46	-	3,337.71		
	08/02/12		-	32.43	-	3,337.74		
	08/15/12		-	32.55	-	3,337.62		5.00
	08/28/12		-	32.67	-	3,337.50		
	09/12/12		-	32.80	-	3,337.37		
	09/26/12		-	33.13	-	3,337.04		
	10/10/12		-	32.87	-	3,337.30		
	10/26/12		-	32.92	-	3,337.25		
	11/06/12		-	32.89	-	3,337.28		5.00
	11/20/12		-	32.91	-	3,337.26		
	01/11/13		-	32.38	-	3,337.79		
	01/25/13		-	32.09	-	3,338.08		
	02/07/13		-	32.92	-	3,337.25		
	02/22/13		-	33.18	-	3,336.99		
	03/08/13		-	32.90	-	3,337.27		
	03/21/13		-	33.00	-	3,337.17		
	04/04/13		-	33.05	-	3,337.12		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-10	04/17/13	3,370.17	-	32.90	-	3,337.27		
	05/01/13		-	33.08	-	3,337.09		
	05/23/13		-	33.07	-	3,337.10		
	06/13/13		-	33.12	-	3,337.05		
	06/28/13		-	33.25	-	3,336.93		
	07/10/13		-	33.36	-	3,336.82		
	07/24/13		-	33.45	-	3,336.73		
	08/08/13		-	33.55	-	3,336.62		
	08/22/13		-	33.69	-	3,336.48		
	09/05/13		-	33.81	-	3,336.37		
	09/19/13		-	33.90	-	3,336.27		5.00
	10/07/13		-	33.99	-	3,336.19		
	10/17/13		-	33.95	-	3,336.23		
	10/31/13		-	33.79	-	3,336.39		
	11/13/13		-	33.77	-	3,336.41		
	11/27/13		-	33.75	-	3,336.43		
	12/11/13		-	33.76	-	3,336.42		
	12/22/13		-	33.75	-	3,336.43		
	01/09/14		-	33.73	-	3,336.45		
	01/23/14		-	33.75	-	3,336.43		
	02/05/14		-	33.76	-	3,336.42		
	02/20/14		-	33.71	-	3,336.46		
	03/05/14		-	33.73	-	3,336.45		
	03/19/14		-	33.74	-	3,336.44		
	04/02/14		-	33.71	-	3,336.47		
	04/16/14		-	33.72	-	3,336.46		
	05/01/14		-	33.72	-	3,336.46		
	05/13/14		-	33.75	-	3,336.43		
	05/28/14		-	33.87	-	3,336.31		
	06/10/14		-	34.03	-	3,336.15		
	06/24/14		-	34.16	-	3,336.02		
	07/08/14		-	34.24	-	3,335.94		
	07/23/14		-	34.38	-	3,335.79		
	08/05/14		-	34.53	-	3,335.64		
	08/12/14		-	34.57	-	3,335.60		
	09/03/14		-	34.75	-	3,335.43		
	09/16/14		-	34.29	-	3,335.88		
	09/30/14		-	29.94	-	3,340.23		
	10/04/14		-	29.94	-	3,340.23		
	10/21/14		-	30.26	-	3,339.91		
	10/28/14		-	30.39	-	3,339.78		
	11/13/14		-	30.59	-	3,339.58		
	11/25/14		-	30.73	-	3,339.44		
	12/10/14		-	30.87	-	3,339.30		
	12/21/14		-	30.95	-	3,339.22		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-11	05/12/03	3,373.96	-	37.72	-	3,336.24		
	08/20/03		-	38.70	-	3,335.26		
	11/10/03		-	39.21	-	3,334.75		
	02/17/04		-	39.31	-	3,334.65		
	05/06/04		-	34.82	-	3,339.14		
	08/18/04		-	34.05	-	3,339.91		
	09/10/04		-	33.56	-	3,340.40		
	09/21/04		-	33.72	-	3,340.24		
	10/05/04		-	31.25	-	3,342.71		
	10/19/04		-	29.25	-	3,344.71		
	11/02/04		-	29.02	-	3,344.94		
	11/15/04		-	29.21	-	3,344.75		
	12/06/04		-	29.31	-	3,344.65		
	12/21/04		-	29.25	-	3,344.71		
	01/03/05		-	29.59	-	3,344.37		
	01/18/05		-	29.83	-	3,344.13		
	02/01/05		-	29.98	-	3,343.98		
	02/22/05		-	30.50	-	3,343.46		
	04/21/05		-	30.75	-	3,343.21		
	05/05/05		-	29.75	-	3,344.21		
	05/17/05		-	30.81	-	3,343.15		
	06/08/05		-	31.03	-	3,342.93		
	06/22/05		-	31.15	-	3,342.81		
	07/20/05		-	31.43	-	3,342.53		
	08/15/05		-	31.04	-	3,342.92		
	08/31/05		-	30.87	-	3,343.09		
	09/14/05		-	30.16	-	3,343.80		
	09/28/05		-	31.13	-	3,342.83		
	11/09/05		-	31.61	-	3,342.35		
	11/18/05		-	31.35	-	3,342.61		
	11/30/05		-	31.71	-	3,342.25		
	12/14/05		-	31.83	-	3,342.13		
	12/28/05		-	31.89	-	3,342.07		
	01/11/06		-	31.95	-	3,342.01		
	01/25/06		-	32.10	-	3,341.86		
	02/08/06		-	32.15	-	3,341.81		
	02/16/06		-	31.63	-	3,342.33		
	02/22/06		-	32.20	-	3,341.76		
	03/08/06		-	32.21	-	3,341.75		
	04/10/06		-	31.77	-	3,342.19		
	05/22/06		-	31.95	-	3,342.01		
	07/12/06		-	32.03	-	3,341.93		
	08/07/06		-	32.27	-	3,341.69		
	10/17/06		-	31.85	-	3,342.11		
	11/21/06		-	31.91	-	3,342.05		
	12/13/06		-	31.96	-	3,342.00		
	01/09/07		-	32.23	-	3,341.73		
	02/14/07		-	32.15	-	3,341.81		
	02/16/07		-	32.12	-	3,341.84		
	02/28/07		-	32.12	-	3,341.84		
	03/13/07		-	32.17	-	3,341.79		
	05/11/07		-	31.82	-	3,342.14		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-11	08/10/07	3,373.96	-	31.74	-	3,342.22		
	08/20/07		-	31.80	-	3,342.16		
	11/16/07		-	29.69	-	3,344.27		
	02/29/08		-	29.30	-	3,344.66		
	05/28/08		-	32.41	-	3,341.55		
	08/21/08		-	32.98	-	3,340.98		
	11/06/08		-	32.85	-	3,341.11		
	02/09/09		-	32.91	-	3,341.05		
	05/14/09		-	33.01	-	3,340.95		
	08/12/09		-	33.35	-	3,340.61		
	11/10/09		-	33.71	-	3,340.25		
	02/03/10		-	33.74	-	3,340.22		
	05/27/10		-	33.78	-	3,340.18		
	08/16/10		-	34.11	-	3,339.85		
	11/11/10		-	34.19	-	3,339.77		
	02/18/11		-	34.26	-	3,339.70		
	05/25/11		-	34.51	-	3,339.45		
	08/18/11		-	35.25	-	3,338.71		
	10/03/11		-	35.55	-	3,338.41		
	10/28/11		-	35.58	-	3,338.38		
	11/10/11		-	35.65	-	3,338.31		
	12/09/11		-	35.70	-	3,338.26		
	02/24/12		-	35.78	-	3,338.18		
	02/29/12		-	35.68	-	3,338.28		
	03/27/12		-	35.70	-	3,338.26		
	04/12/12		-	35.69	-	3,338.27		
	04/19/12		-	35.90	-	3,338.06		
	05/05/12		-	36.00	-	3,337.96		
	05/17/12		-	35.99	-	3,337.97		
	06/21/12		-	36.00	-	3,337.96		
	07/09/12		-	36.32	-	3,337.64		
	08/02/12		-	36.36	-	3,337.60		
	08/15/12		-	36.50	-	3,337.46		5.00
	08/28/12		-	36.60	-	3,337.36		
	09/12/12		-	36.87	-	3,337.09		
	09/26/12		-	36.95	-	3,337.01		
	10/10/12		-	36.85	-	3,337.11		
	10/26/12		-	36.90	-	3,337.06		
	11/06/12		-	36.90	-	3,337.06		5.00
	11/20/12		-	36.94	-	3,337.02		
	01/11/13		-	36.95	-	3,337.01		
	01/25/13		-	37.00	-	3,336.96		
	02/07/13		-	36.98	-	3,336.98		
	02/22/13		-	37.10	-	3,336.86		
	03/08/13		-	36.80	-	3,337.16		
	03/21/13		-	36.92	-	3,337.04		
	04/04/13		-	37.10	-	3,336.86		
	04/17/13		-	36.80	-	3,337.16		
	05/01/13		-	37.00	-	3,336.96		
	05/23/13		-	37.10	-	3,336.86		
	06/13/13		-	37.15	-	3,336.81		
	06/28/13		-	37.27	-	3,336.70		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-11	07/10/13	3,373.96	-	37.36	-	3,336.60		
	07/24/13		-	37.43	-	3,336.53		
	08/08/13		-	37.54	-	3,336.42		
	08/22/13		-	37.67	-	3,336.29		
	09/05/13		-	37.78	-	3,336.18		5.00
	09/19/13		-	37.88	-	3,336.08		
	10/07/13		-	37.97	-	3,336.00		
	10/17/13		-	37.98	-	3,335.99		
	10/31/13		-	37.85	-	3,336.12		
	11/13/13		-	37.81	-	3,336.16		
	11/27/13		-	37.83	-	3,336.13		
	12/11/13		-	37.85	-	3,336.11		
	12/22/13		-	37.85	-	3,336.12		
	01/09/14		-	37.82	-	3,336.15		
	01/23/14		-	37.86	-	3,336.11		
	02/05/14		-	37.86	-	3,336.11		
	02/20/14		-	37.82	-	3,336.15		
	03/05/14		-	37.83	-	3,336.14		
	03/19/14		-	37.82	-	3,336.15		
	04/02/14		-	37.77	-	3,336.20		
	04/16/14		-	37.80	-	3,336.17		
	05/01/14		-	37.82	-	3,336.14		
	05/13/14		-	37.86	-	3,336.11		
	05/28/14		-	37.94	-	3,336.03		
	06/10/14		-	38.06	-	3,335.91		
	06/24/14		-	38.15	-	3,335.82		
	07/08/14		-	38.27	-	3,335.70		
	07/23/14		-	38.38	-	3,335.58		
	08/05/14		-	38.50	-	3,335.46		
	08/12/14		-	38.56	-	3,335.41		
	09/03/14		-	38.72	-	3,335.24		
	09/16/14		-	38.50	-	3,335.46		
	09/30/14		-	35.79	-	3,338.18		
	10/04/14		-	35.44	-	3,338.52		
	10/21/14		-	34.94	-	3,339.02		
	10/28/14		-	34.93	-	3,339.03		
	11/13/14		-	34.94	-	3,339.02		
	11/25/14		-	35.02	-	3,338.94		
	12/10/14		-	35.06	-	3,338.90		
	12/21/14		-	35.13	-	3,338.83		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-12	10/22/02	3,372.41	-	33.77	-	3,338.64		
	11/06/02		-	31.84	-	3,340.57		
	03/18/03		-	35.89	-	3,336.52		
	05/12/03		-	36.09	-	3,336.32		
	08/20/03		-	37.17	-	3,335.24		
	11/10/03		-	37.72	-	3,334.69		
	02/17/04		-	37.73	-	3,334.68		
	05/06/04		-	33.08	-	3,339.33		
	08/18/04		-	32.32	-	3,340.09		
	09/10/04		-	32.09	-	3,340.32		
	09/21/04		-	32.24	-	3,340.17		
	10/05/04		-	29.21	-	3,343.20		
	10/19/04		-	27.05	-	3,345.36		
	11/02/04		-	27.09	-	3,345.32		
	11/15/04		-	27.23	-	3,345.18		
	12/06/04		-	27.67	-	3,344.74		
	12/21/04		-	27.64	-	3,344.77		
	01/03/05		-	28.03	-	3,344.38		
	01/18/05		-	28.26	-	3,344.15		
	02/01/05		-	28.46	-	3,343.95		
	02/22/05		-	29.00	-	3,343.41		
	04/21/05		-	29.25	-	3,343.16		
	05/05/05		-	29.29	-	3,343.12		
	05/17/05		-	29.31	-	3,343.10		
	06/08/05		-	29.55	-	3,342.86		
	06/22/05		-	30.74	-	3,341.67		
	07/20/05		-	29.94	-	3,342.47		
	08/15/05		-	29.54	-	3,342.87		
	08/31/05		-	29.41	-	3,343.00		
	09/14/05		-	29.45	-	3,342.96		
	09/28/05		-	29.66	-	3,342.75		
	11/09/05		-	30.14	-	3,342.27		
	11/18/05		-	29.88	-	3,342.53		
	11/30/05		-	30.22	-	3,342.19		
	12/14/05		-	30.37	-	3,342.04		
	12/28/05		-	30.41	-	3,342.00		
	01/11/06		-	30.45	-	3,341.96		
	01/25/06		-	30.62	-	3,341.79		
	02/08/06		-	30.67	-	3,341.74		
	02/16/06		-	30.13	-	3,342.28		
	02/22/06		-	30.71	-	3,341.70		
	03/08/06		-	30.74	-	3,341.67		
	04/10/06		-	29.30	-	3,343.11		
	05/22/06		-	30.47	-	3,341.94		
	07/12/06		-	30.55	-	3,341.86		
	08/07/06		-	30.92	-	3,341.49		
	10/17/06		-	30.35	-	3,342.06		
	11/21/06		-	30.52	-	3,341.89		
	12/13/06		-	27.02	-	3,345.39		
	01/09/07		-	30.71	-	3,341.70		
	02/14/07		-	30.63	-	3,341.78		
	02/16/07		-	30.56	-	3,341.85		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-12	03/13/07	3,372.41	-	27.11	-	3,345.30		
	05/11/07		-	30.20	-	3,342.21		
	08/10/07		-	26.67	-	3,345.74		
	08/20/07		-	26.33	-	3,346.08		
	11/16/07		-	33.32	-	3,339.09		
	02/29/08		-	27.29	-	3,345.12		
	05/28/08		-	27.35	-	3,345.06		
	08/21/08		-	27.92	-	3,344.49		
	11/06/08		-	27.74	-	3,344.67		
	02/09/09		-	27.83	-	3,344.58		
	05/14/09		-	27.96	-	3,344.45		
	08/13/09		-	28.26	-	3,344.15		
	11/10/09		-	28.66	-	3,343.75		
	02/03/10		-	28.69	-	3,343.72		
	05/27/10		-	28.71	-	3,343.70		
	08/16/10		-	28.95	-	3,343.46		
	11/11/10		-	32.69	-	3,339.72		
	02/18/11		-	29.16	-	3,343.25		
	05/25/11		-	32.92	-	3,339.49		
	08/18/11		-	33.67	-	3,338.74		
	10/03/11		-	35.45	-	3,336.96		
	10/28/11		-	34.10	-	3,338.31		
	11/10/11		-	34.23	-	3,338.18		
	12/09/11		-	34.32	-	3,338.09		
	02/24/12		-	34.40	-	3,338.01		
	02/29/12		-	34.11	-	3,338.30		
	03/27/12		-	34.24	-	3,338.17		
	04/12/12		-	34.21	-	3,338.20		
	04/19/12		-	34.40	-	3,338.01		
	05/05/12		-	34.43	-	3,337.98		
	05/17/12		-	34.47	-	3,337.94		
	06/21/12		-	34.45	-	3,337.96		
	07/09/12		-	34.81	-	3,337.60		
	08/02/12		-	34.85	-	3,337.56		
	08/15/12		-	34.95	-	3,337.46		
	08/28/12		-	35.06	-	3,337.35		
	09/12/12		-	36.40	-	3,336.01		
	09/26/12		-	35.48	-	3,336.93		
	10/10/12		-	35.28	-	3,337.13		
	10/26/12		-	35.35	-	3,337.06		
	11/06/12		-	35.34	-	3,337.07		
	11/20/12		-	35.39	-	3,337.02		
	01/11/13		-	37.38	-	3,335.03		
	01/25/13		-	35.36	-	3,337.05		
	02/07/13		-	35.40	-	3,337.01		
	02/22/13		-	35.60	-	3,336.81		
	03/08/13		-	35.40	-	3,337.01		
	03/21/13		-	35.35	-	3,337.06		
	04/04/13		-	35.50	-	3,336.91		
	04/17/13		-	35.40	-	3,337.01		
	05/01/13		-	35.47	-	3,336.94		
	05/23/13		-	36.50	-	3,335.91		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-12	06/13/13	3,372.41	-	35.59	-	3,336.82		
	06/28/13		-	35.68	-	3,336.73		
	07/10/13		-	35.80	-	3,336.61		
	07/24/13		-	35.88	-	3,336.53		
	08/08/13		-	35.98	-	3,336.43		
	08/22/13		-	36.10	-	3,336.31		
	09/05/13		-	36.22	-	3,336.19		5.00
	09/19/13		-	36.32	-	3,336.09		
	10/07/13		-	36.40	-	3,336.01		
	10/17/13		-	36.40	-	3,336.01		
	10/31/13		-	36.25	-	3,336.16		
	11/13/13		-	36.21	-	3,336.20		
	11/27/13		-	36.25	-	3,336.16		
	12/11/13		-	36.27	-	3,336.14		
	12/22/13		-	36.26	-	3,336.15		
	01/09/14		-	36.23	-	3,336.18		
	01/23/14		-	36.27	-	3,336.14		
	02/05/14		-	36.28	-	3,336.13		
	02/20/14		-	36.22	-	3,336.19		
	03/05/14		-	36.23	-	3,336.18		
	03/19/14		-	36.23	-	3,336.18		
	04/02/14		-	36.19	-	3,336.22		
	04/16/14		-	36.20	-	3,336.21		
	05/01/14		-	36.23	-	3,336.18		
	05/13/14		-	36.26	-	3,336.15		
	05/28/14		-	36.35	-	3,336.06		
	06/10/14		-	36.48	-	3,335.93		
	06/24/14		-	36.57	-	3,335.84		
	07/08/14		-	36.68	-	3,335.73		
	07/23/14		-	36.79	-	3,335.62		
	08/05/14		-	36.93	-	3,335.48		
	08/12/14		-	37.00	-	3,335.41		
	09/03/14		-	37.17	-	3,335.24		
	09/16/14		-	36.88	-	3,335.53		
	09/30/14		-	33.78	-	3,338.63		
	10/04/14		-	33.47	-	3,338.94		
	10/21/14		-	33.16	-	3,339.25		
	10/28/14		-	33.19	-	3,339.22		
	11/13/14		-	33.25	-	3,339.16		
	11/25/14		-	33.37	-	3,339.04		
	12/10/14		-	33.44	-	3,338.97		
	12/21/14		-	33.51	-	3,338.90		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-13	10/22/02	3,368.91	-	31.30	-	3,337.61		
	11/06/02		-	31.60	-	3,337.31		
	02/27/03		-	32.31	-	3,336.60		
	03/18/03		-	32.35	-	3,336.56		
	05/12/03		-	32.60	-	3,336.31		
	08/20/03		-	33.62	-	3,335.29		
	11/10/03		-	34.20	-	3,334.71		
	02/17/04		-	34.18	-	3,334.73		
	05/06/04		-	29.29	-	3,339.62		
	08/18/04		-	28.51	-	3,340.40		
	09/10/04		-	28.23	-	3,340.68		
	09/21/04		-	28.54	-	3,340.37		
	10/05/04		-	24.88	-	3,344.03		
	10/19/04		-	22.96	-	3,345.95		
	11/02/04		-	23.26	-	3,345.65		
	11/15/04		-	23.61	-	3,345.30		
	12/06/04		-	24.05	-	3,344.86		
	12/21/04		-	24.03	-	3,344.88		
	01/03/05		-	24.41	-	3,344.50		
	01/18/05		-	24.71	-	3,344.20		
	02/01/05		-	24.90	-	3,344.01		
	02/22/05		-	25.42	-	3,343.49		
	04/21/05		-	25.73	-	3,343.18		
	05/05/05		-	25.82	-	3,343.09		
	05/17/05		-	25.81	-	3,343.10		
	06/08/05		-	26.03	-	3,342.88		
	06/22/05		-	26.18	-	3,342.73		
	07/20/05		-	26.44	-	3,342.47		
	08/15/05		-	26.00	-	3,342.91		
	08/31/05		-	25.85	-	3,343.06		
	09/14/05		-	25.92	-	3,342.99		
	09/28/05		-	26.14	-	3,342.77		
	11/09/05		-	26.63	-	3,342.28		
	11/18/05		-	26.35	-	3,342.56		
	11/30/05		-	26.73	-	3,342.18		
	12/14/05		-	26.86	-	3,342.05		
	12/28/05		-	26.92	-	3,341.99		
	01/11/06		-	26.95	-	3,341.96		
	01/25/06		-	27.13	-	3,341.78		
	02/08/06		-	27.16	-	3,341.75		
	02/16/06		-	26.63	-	3,342.28		
	02/22/06		-	27.20	-	3,341.71		
	03/08/06		-	27.19	-	3,341.72		
	04/10/06		-	26.81	-	3,342.10		
	05/22/06		-	26.97	-	3,341.94		
	07/12/06		-	27.02	-	3,341.89		
	08/07/06		-	32.35	-	3,336.56		
	10/17/06		-	26.71	-	3,342.20		
	11/21/06		-	32.02	-	3,336.89		
	12/13/06		-	27.02	-	3,341.89		
	01/09/07		-	27.42	-	3,341.49		
	02/14/07		-	27.10	-	3,341.81		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-13	02/16/07	3,368.91	-	27.08	-	3,341.83		
	03/13/07		-	30.63	-	3,338.28		
	05/11/07		-	26.41	-	3,342.50		
	08/10/07		-	30.17	-	3,338.74		
	08/20/07		-	30.28	-	3,338.63		
	11/16/07		-	27.11	-	3,341.80		
	02/29/08		-	30.80	-	3,338.11		
	05/28/08		-	30.28	-	3,338.63		
	08/21/08		-	31.43	-	3,337.48		
	11/06/08		-	31.26	-	3,337.65		
	02/09/09		-	31.36	-	3,337.55		
	05/14/09		-	31.51	-	3,337.40		
	08/12/09		-	31.81	-	3,337.10		
	11/10/09		-	32.17	-	3,336.74		
	02/03/10		-	33.19	-	3,335.72		
	05/27/10		-	33.23	-	3,335.68		
	08/16/10		-	32.47	-	3,336.44		
	11/11/10		-	29.14	-	3,339.77		
	02/18/11		-	32.71	-	3,336.20		
	05/25/11		-	29.40	-	3,339.51		
	08/18/11		-	30.15	-	3,338.76		
	10/03/11		-	34.00	-	3,334.91		
	10/28/11		-	30.57	-	3,338.34		
	11/10/11		-	30.62	-	3,338.29		
	12/09/11		-	30.75	-	3,338.16		
	02/24/12		-	30.67	-	3,338.24		
	02/29/12		-	30.66	-	3,338.25		
	03/27/12		-	30.65	-	3,338.26		
	04/12/12		-	30.64	-	3,338.27		
	04/19/12		-	30.25	-	3,338.66		
	05/05/12		-	29.98	-	3,338.93		
	05/17/12		-	30.04	-	3,338.87		
	06/21/12		-	30.90	-	3,338.01		
	07/09/12		-	31.34	-	3,337.57		
	08/02/12		-	31.27	-	3,337.64		
	08/15/12		-	31.44	-	3,337.47		5.00
	08/28/12		-	31.55	-	3,337.36		
	09/12/12		-	31.98	-	3,336.93		
	09/26/12		-	32.05	-	3,336.86		
	10/10/12		-	31.77	-	3,337.14		
	10/26/12		-	31.84	-	3,337.07		
	11/06/12		-	31.78	-	3,337.13		5.00
	11/20/12		-	31.86	-	3,337.05		
	01/11/13		-	31.83	-	3,337.08		
	01/25/13		-	31.84	-	3,337.07		
	02/07/13		-	31.86	-	3,337.05		
	02/22/13		-	32.15	-	3,336.76		
	03/08/13		-	31.86	-	3,337.05		
	03/21/13		-	31.85	-	3,337.06		
	04/04/13		-	31.96	-	3,336.95		
	04/17/13		-	31.86	-	3,337.05		
	05/01/13		-	31.75	-	3,337.16		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-13	05/23/13	3,368.91	-	32.08	-	3,336.83		
	06/13/13		-	32.06	-	3,336.85		
	06/28/13		-	32.18	-	3,336.74		
	07/10/13		-	32.21	-	3,336.70		
	07/24/13		-	32.32	-	3,336.60		
	08/08/13		-	32.45	-	3,336.46		
	08/22/13		-	32.59	-	3,336.32		
	09/05/13		-	32.71	-	3,336.21		
	09/19/13		-	32.81	-	3,336.11		5.00
	10/07/13		-	32.89	-	3,336.03		
	10/17/13		-	32.87	-	3,336.05		
	10/31/13		-	32.73	-	3,336.19		
	11/13/13		-	32.69	-	3,336.22		
	11/27/13		-	32.70	-	3,336.22		
	12/11/13		-	32.71	-	3,336.21		
	12/22/13		-	32.72	-	3,336.20		
	01/09/14		-	32.68	-	3,336.24		
	01/23/14		-	32.72	-	3,336.20		
	02/05/14		-	32.72	-	3,336.20		
	02/20/14		-	31.68	-	3,337.23		
	03/05/14		-	32.68	-	3,336.24		
	03/19/14		-	32.68	-	3,336.24		
	04/02/14		-	32.66	-	3,336.26		
	04/16/14		-	32.66	-	3,336.26		
	05/01/14		-	32.66	-	3,336.26		
	05/13/14		-	32.71	-	3,336.21		
	05/28/14		-	32.80	-	3,336.12		
	06/10/14		-	32.95	-	3,335.97		
	06/24/14		-	33.03	-	3,335.89		
	07/08/14		-	33.14	-	3,335.78		
	07/23/14		-	33.29	-	3,335.62		
	08/05/14		-	33.40	-	3,335.51		
	08/12/14		-	33.47	-	3,335.45		
	09/03/14		-	33.64	-	3,335.28		
	09/16/14		-	33.30	-	3,335.61		
	09/30/14		-	29.90	-	3,339.02		
	10/04/14		-	29.65	-	3,339.26		
	10/21/14		-	29.47	-	3,339.44		
	10/28/14		-	29.52	-	3,339.39		
	11/13/14		-	29.64	-	3,339.27		
	11/25/14		-	29.76	-	3,339.15		
	12/10/14		-	29.85	-	3,339.06		
	12/21/14		-	29.94	-	3,338.97		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-14	10/22/02	3,371.54	-	36.56	-	3,334.98		
	11/06/02		-	34.68	-	3,336.86		
	02/27/03		-	35.09	-	3,336.45		
	03/18/03		-	35.14	-	3,336.40		
	05/12/03		-	35.32	-	3,336.22		
	08/20/03		-	36.42	-	3,335.12		
	11/10/03		-	36.97	-	3,334.57		
	02/17/04		-	37.00	-	3,334.54		
	05/06/04		-	32.17	-	3,339.37		
	08/18/04		-	31.42	-	3,340.12		
	09/10/04		-	31.05	-	3,340.49		
	09/21/04		-	31.31	-	3,340.23		
	10/05/04		-	28.16	-	3,343.38		
	10/19/04		-	26.10	-	3,345.44		
	11/02/04		-	26.20	-	3,345.34		
	11/15/04		-	26.46	-	3,345.08		
	12/06/04		-	26.82	-	3,344.72		
	12/21/04		-	26.79	-	3,344.75		
	01/03/05		-	27.17	-	3,344.37		
	01/18/05		-	27.49	-	3,344.05		
	02/01/05		-	27.65	-	3,343.89		
	02/22/05		-	28.20	-	3,343.34		
	04/21/05		-	28.50	-	3,343.04		
	05/05/05		-	28.60	-	3,342.94		
	05/17/05		-	28.60	-	3,342.94		
	06/08/05		-	28.83	-	3,342.71		
	06/22/05		-	28.91	-	3,342.63		
	07/20/05		-	29.17	-	3,342.37		
	08/15/05		-	28.80	-	3,342.74		
	08/31/05		-	26.80	-	3,344.74		
	09/14/05		-	28.69	-	3,342.85		
	09/28/05		-	28.91	-	3,342.63		
	11/09/05		-	29.39	-	3,342.15		
	11/18/05		-	29.12	-	3,342.42		
	11/30/05		-	29.48	-	3,342.06		
	12/14/05		-	29.60	-	3,341.94		
	12/28/05		-	29.63	-	3,341.91		
	01/11/06		-	29.71	-	3,341.83		
	01/25/06		-	29.85	-	3,341.69		
	02/08/06		-	29.91	-	3,341.63		
	02/16/06		-	29.41	-	3,342.13		
	02/22/06		-	29.96	-	3,341.58		
	03/08/06		-	29.96	-	3,341.58		
	04/10/06		-	29.58	-	3,341.96		
	05/22/06		-	29.76	-	3,341.78		
	07/12/06		-	29.79	-	3,341.75		
	08/07/06		-	30.22	-	3,341.32		
	10/17/06		-	29.53	-	3,342.01		
	11/21/06		-	29.71	-	3,341.83		
	12/13/06		-	29.87	-	3,341.67		
	01/09/07		-	29.97	-	3,341.57		
	02/14/07		-	31.91	-	3,339.63		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-14	02/16/07	3,371.54	-	29.83	-	3,341.71		
	02/28/07		-	29.85	-	3,341.69		
	03/13/07		-	29.90	-	3,341.64		
	05/11/07		-	29.47	-	3,342.07		
	08/10/07		-	29.43	-	3,342.11		
	08/20/07		-	29.57	-	3,341.97		
	11/16/07		-	29.94	-	3,341.60		
	02/29/08		-	30.08	-	3,341.46		
	05/28/08		-	30.27	-	3,341.27		
	08/21/08		-	30.70	-	3,340.84		
	11/06/08		-	30.55	-	3,340.99		
	02/09/09		-	30.65	-	3,340.89		
	05/14/09		-	30.75	-	3,340.79		
	08/12/09		-	31.11	-	3,340.43		
	11/10/09		-	31.46	-	3,340.08		
	02/03/10		-	31.48	-	3,340.06		
	05/27/10		-	31.52	-	3,340.02		
	08/16/10		-	31.76	-	3,339.78		
	11/11/10		-	31.97	-	3,339.57		
	02/18/11		-	31.99	-	3,339.55		
	05/25/11		-	32.20	-	3,339.34		
	08/18/11		-	32.95	-	3,338.59		
	10/03/11		-	33.30	-	3,338.24		
	10/28/11		-	33.32	-	3,338.22		
	11/10/11		-	33.53	-	3,338.01		
	12/09/11		-	33.82	-	3,337.72		
	02/24/12		-	33.93	-	3,337.61		
	02/29/12		-	33.41	-	3,338.13		
	03/27/12		-	33.44	-	3,338.10		
	04/12/12		-	33.48	-	3,338.06		
	04/19/12		-	33.60	-	3,337.94		
	05/05/12		-	33.68	-	3,337.86		
	05/17/12		-	33.75	-	3,337.79		
	06/21/12		-	33.70	-	3,337.84		
	07/09/12		-	31.10	-	3,340.44		
	08/02/12		-	34.09	-	3,337.45		
	08/15/12		-	34.21	-	3,337.33		
	08/28/12		-	34.32	-	3,337.22		
	09/12/12		-	34.67	-	3,336.87		
	09/26/12		-	34.74	-	3,336.80		
	10/10/12		-	34.54	-	3,337.00		
	10/26/12		-	34.58	-	3,336.96		
	11/06/12		-	34.59	-	3,336.95		
	11/20/12		-	34.65	-	3,336.89		
	01/11/13		-	34.56	-	3,336.98		
	01/25/13		-	34.60	-	3,336.94		
	02/07/13		-	34.60	-	3,336.94		
	02/22/13		-	34.85	-	3,336.69		
	03/08/13		-	34.60	-	3,336.94		
	03/21/13		-	34.60	-	3,336.94		
	04/04/13		-	34.73	-	3,336.81		
	04/17/13		-	34.60	-	3,336.94		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-14	05/01/13	3,371.54	-	34.77	-	3,336.77		
	05/23/13		-	34.78	-	3,336.76		
	06/13/13		-	34.82	-	3,336.73		
	06/28/13		-	34.93	-	3,336.62		
	07/10/13		-	35.02	-	3,336.52		
	07/24/13		-	35.11	-	3,336.43		
	08/08/13		-	35.20	-	3,336.34		
	08/22/13		-	35.34	-	3,336.20		
	09/05/13		-	35.44	-	3,336.10		5.00
	09/19/13		-	35.56	-	3,335.98		
	10/07/13		-	35.64	-	3,335.91		
	10/17/13		-	35.61	-	3,335.94		
	10/31/13		-	35.49	-	3,336.06		
	11/13/13		-	35.47	-	3,336.07		
	11/27/13		-	35.45	-	3,336.10		
	12/11/13		-	35.46	-	3,336.09		
	12/22/13		-	35.46	-	3,336.09		
	01/09/14		-	35.43	-	3,336.12		
	01/23/14		-	35.46	-	3,336.09		
	02/05/14		-	35.47	-	3,336.08		
	02/20/14		-	35.44	-	3,336.11		
	03/05/14		-	35.42	-	3,336.12		
	03/19/14		-	35.44	-	3,336.11		
	04/02/14		-	35.41	-	3,336.14		
	04/16/14		-	35.41	-	3,336.14		
	05/01/14		-	35.44	-	3,336.10		
	05/13/14		-	35.46	-	3,336.09		
	05/28/14		-	35.55	-	3,336.00		
	06/10/14		-	35.70	-	3,335.84		
	06/24/14		-	35.80	-	3,335.74		
	07/08/14		-	35.91	-	3,335.63		
	07/23/14		-	36.03	-	3,335.51		
	08/05/14		-	36.14	-	3,335.40		
	08/12/14		-	36.22	-	3,335.32		
	09/03/14		-	36.39	-	3,335.15		
	09/16/14		-	36.03	-	3,335.51		
	09/30/14		-	32.78	-	3,338.77		
	10/04/14		-	32.49	-	3,339.06		
	10/21/14		-	32.22	-	3,339.32		
	10/28/14		-	32.26	-	3,339.28		
	11/13/14		-	32.26	-	3,339.28		
	11/25/14		-	32.51	-	3,339.03		
	12/10/14		-	32.61	-	3,338.93		
	12/21/14		-	32.69	-	3,338.85		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-15	10/22/02	3,377.64	-	42.74	-	3,334.90		
	11/06/02		-	41.32	-	3,336.32		
	02/27/03		-	41.29	-	3,336.35		
	03/18/03		-	41.26	-	3,336.38		
	05/12/03		-	41.52	-	3,336.12		
	08/20/03		-	42.54	-	3,335.10		
	11/10/03		-	43.12	-	3,334.52		
	03/10/04		-	43.18	-	3,334.46		
	05/06/04		-	38.79	-	3,338.85		
	08/18/04		-	37.93	-	3,339.71		
	09/10/04		-	37.45	-	3,340.19		
	09/21/04		-	37.67	-	3,339.97		
	10/05/04		-	35.37	-	3,342.27		
	10/19/04		-	33.50	-	3,344.14		
	11/02/04		-	33.10	-	3,344.54		
	11/15/04		-	33.12	-	3,344.52		
	12/06/04		-	33.26	-	3,344.38		
	12/21/04		-	33.21	-	3,344.43		
	01/03/05		-	33.49	-	3,344.15		
	01/18/05		-	33.75	-	3,343.89		
	02/01/05		-	33.88	-	3,343.76		
	02/22/05		-	34.35	-	3,343.29		
	04/21/05		-	34.61	-	3,343.03		
	05/05/05		-	34.65	-	3,342.99		
	05/17/05		-	34.65	-	3,342.99		
	06/08/05		-	34.87	-	3,342.77		
	06/22/05		-	35.02	-	3,342.62		
	07/20/05		-	35.25	-	3,342.39		
	08/15/05		-	34.95	-	3,342.69		
	08/31/05		-	34.83	-	3,342.81		
	09/14/05		-	34.83	-	3,342.81		
	09/28/05		-	35.02	-	3,342.62		
	11/09/05		-	35.41	-	3,342.23		
	11/18/05		-	35.19	-	3,342.45		
	11/30/05		-	35.52	-	3,342.12		
	12/14/05		-	35.66	-	3,341.98		
	12/28/05		-	35.73	-	3,341.91		
	01/11/06		-	35.79	-	3,341.85		
	01/25/06		-	35.97	-	3,341.67		
	02/08/06		-	35.98	-	3,341.66		
	02/16/06		-	35.44	-	3,342.20		
	02/22/06		-	36.01	-	3,341.63		
	03/08/06		-	36.13	-	3,341.51		
	04/10/06		-	35.62	-	3,342.02		
	05/22/06		-	35.78	-	3,341.86		
	07/12/06		-	35.88	-	3,341.76		
	08/07/06		-	36.17	-	3,341.47		
	10/17/06		-	35.68	-	3,341.96		
	11/21/06		-	29.71	-	3,347.93		
	12/13/06		-	35.95	-	3,341.69		
	01/09/07		-	36.05	-	3,341.59		
	02/14/07		-	36.02	-	3,341.62		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-15	02/16/07	3,377.64	-	35.97	-	3,341.67		
	02/28/07		-	35.98	-	3,341.66		
	03/13/07		-	36.05	-	3,341.59		
	05/11/07		-	35.77	-	3,341.87		
	08/10/07		-	35.60	-	3,342.04		
	08/20/07		-	35.70	-	3,341.94		
	11/16/07		-	36.09	-	3,341.55		
	02/29/08		-	36.20	-	3,341.44		
	05/28/08		-	36.31	-	3,341.33		
	08/21/08		-	36.80	-	3,340.84		
	11/06/08		-	36.69	-	3,340.95		
	02/09/09		-	36.77	-	3,340.87		
	05/14/09		-	36.91	-	3,340.73		
	08/12/09		-	37.21	-	3,340.43		
	11/10/09		-	37.57	-	3,340.07		
	02/03/10		-	37.60	-	3,340.04		
	05/27/10		-	37.61	-	3,340.03		
	08/16/10		-	37.87	-	3,339.77		
	11/11/10		-	38.09	-	3,339.55		
	02/18/11		-	38.08	-	3,339.56		
	05/25/11		-	38.35	-	3,339.29		
	08/18/11		-	39.06	-	3,338.58		
	10/03/11		-	39.38	-	3,338.26		
	10/28/11		-	39.42	-	3,338.22		
	11/10/11		-	39.47	-	3,338.17		
	12/09/11		-	39.43	-	3,338.21		
	02/24/12		-	39.43	-	3,338.21		
	02/29/12		-	39.53	-	3,338.11		
	03/27/12		-	39.57	-	3,338.07		
	04/12/12		-	39.32	-	3,338.32		
	04/19/12		-	39.67	-	3,337.97		
	05/05/12		-	39.71	-	3,337.93		
	05/17/12		-	39.75	-	3,337.89		
	06/21/12		-	39.80	-	3,337.84		
	07/09/12		-	40.05	-	3,337.59		
	08/02/12		-	40.21	-	3,337.43		
	08/15/12		-	40.33	-	3,337.31		5.00
	08/28/12		-	40.45	-	3,337.19		
	09/12/12		-	40.65	-	3,336.99		
	09/26/12		-	40.69	-	3,336.95		
	10/10/12		-	40.69	-	3,336.95		
	10/26/12		-	40.73	-	3,336.91		
	11/06/12		-	40.73	-	3,336.91		5.00
	11/20/12		-	40.75	-	3,336.89		
	01/11/13		-	40.73	-	3,336.91		
	01/25/13		-	39.76	-	3,337.88		
	02/07/13		-	40.79	-	3,336.85		
	02/22/13		-	40.87	-	3,336.77		
	03/08/13		-	40.79	-	3,336.85		
	03/21/13		-	39.70	-	3,337.94		
	04/04/13		-	40.91	-	3,336.73		
	04/17/13		-	40.79	-	3,336.85		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
MW-15	05/01/13	3,377.64	-	40.98	-	3,336.66		
	05/23/13		-	40.91	-	3,336.73		
	06/13/13		-	40.98	-	3,336.67		
	06/28/13		-	41.10	-	3,336.55		
	07/10/13		-	41.19	-	3,336.45		
	07/24/13		-	41.26	-	3,336.38		
	08/08/13		-	41.36	-	3,336.28		
	08/22/13		-	41.50	-	3,336.14		
	09/05/13		-	41.61	-	3,336.03		5.00
	09/19/13		-	41.71	-	3,335.93		
	10/07/13		-	41.79	-	3,335.86		
	10/17/13		-	41.77	-	3,335.88		
	10/31/13		-	41.68	-	3,335.97		
	11/13/13		-	41.66	-	3,335.99		
	11/27/13		-	41.62	-	3,336.02		
	12/11/13		-	41.64	-	3,336.00		
	12/22/13		-	41.67	-	3,335.98		
	01/09/14		-	41.63	-	3,336.02		
	01/23/14		-	41.68	-	3,335.97		
	02/05/14		-	41.67	-	3,335.98		
	02/20/14		-	41.64	-	3,336.01		
	03/05/14		-	41.59	-	3,336.05		
	03/19/14		-	41.64	-	3,336.01		
	04/02/14		-	41.61	-	3,336.04		
	04/16/14		-	41.61	-	3,336.04		
	05/01/14		-	41.64	-	3,336.00		
	05/13/14		-	41.68	-	3,335.97		
	05/28/14		-	41.75	-	3,335.90		
	06/10/14		-	41.87	-	3,335.77		
	06/24/14		-	41.93	-	3,335.72		
	07/08/14		-	42.04	-	3,335.60		
	07/23/14		-	42.20	-	3,335.44		
	08/05/14		-	42.32	-	3,335.32		
	08/12/14		-	42.37	-	3,335.27		
	09/03/14		-	42.53	-	3,335.11		
	09/16/14		-	42.31	-	3,335.33		
	09/30/14		-	39.71	-	3,337.94		
	10/04/14		-	39.32	-	3,338.32		
	10/21/14		-	38.75	-	3,338.89		
	10/28/14		-	38.74	-	3,338.90		
	11/13/14		-	38.76	-	3,338.88		
	11/25/14		-	38.84	-	3,338.80		
	12/10/14		-	38.89	-	3,338.75		
	12/21/14		-	38.95	-	3,338.69		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
TMW-1	08/15/02	3,372.24	20.18	25.22	5.04	3,336.39		
	08/23/02		20.53	25.04	4.51	3,336.12		
	08/27/02		20.61	24.97	4.36	3,336.07		
	08/29/02		20.68	24.79	4.11	3,336.03		
	09/04/02		20.86	24.87	4.01	3,335.87		
	10/02/02		21.28	24.95	3.67	3,335.50		
	10/03/02		20.18	25.24	5.06	3,336.39		
	10/08/02		21.49	25.02	3.53	3,335.31		
	10/15/02		20.24	25.23	4.99	3,336.34		
	12/27/02		19.57	23.72	4.15	3,337.14		
	01/07/03		19.71	23.79	4.08	3,337.01		
	01/27/03		19.98	23.42	3.44	3,336.83		
	02/27/03		20.07	24.16	4.09	3,336.65		
	03/06/03		20.12	24.17	4.05	3,336.60		
	03/18/03		20.09	24.24	4.15	3,336.62		
	03/20/03		20.21	24.09	3.88	3,336.54		
	03/27/03		20.15	24.18	4.03	3,336.58		
	04/16/03		20.33	24.24	3.91	3,336.41		
	05/12/03		20.59	23.13	2.54	3,336.36		
	05/21/03		20.48	24.27	3.79	3,336.28		
	06/03/03		20.52	24.39	3.87	3,336.23		
	07/31/03		21.22	24.84	3.62	3,335.57		
	08/06/03		21.51	25.10	3.59	3,335.28		
	08/20/03		21.78	25.28	3.50	3,335.03		
	10/02/03		22.00	25.35	3.35	3,334.83		
	10/07/03		21.91	25.23	3.32	3,334.92		
	10/16/03		22.29	25.64	3.35	3,334.54		
	10/22/03		22.31	25.66	3.35	3,334.52		
	10/28/03		22.35	25.72	3.37	3,334.47		
	11/06/03		22.46	25.77	3.31	3,334.37		
	11/10/03		22.46	25.81	3.35	3,334.37		
	11/18/03		22.21	25.51	3.30	3,334.63		
	12/04/03		22.22	25.51	3.29	3,334.62		
	12/17/03		22.22	25.50	3.28	3,334.62		
	12/22/03		21.84	25.19	3.35	3,334.99		
	01/02/04		22.07	25.31	3.24	3,334.77		
	01/19/04		22.55	25.81	3.26	3,334.29		
	01/27/04		22.59	25.96	3.37	3,334.23		
	02/02/04		22.20	26.04	3.84	3,334.55		
	02/17/04		22.10	24.33	2.23	3,334.90		
	02/25/04		22.11	24.30	2.19	3,334.89		
	03/01/04		22.12	24.27	2.15	3,334.89		
	03/10/04		22.11	24.29	2.18	3,334.89		
	03/15/04		22.26	25.23	2.97	3,334.62		
	03/17/04		20.60	25.73	5.13	3,335.96		
	03/22/04		22.67	25.58	2.91	3,334.22		
	03/24/04		22.13	24.96	2.83	3,334.78		
	03/29/04		22.61	25.67	3.06	3,334.26		
	03/31/04		22.60	25.62	3.02	3,334.28		
	05/06/04		17.52	22.97	5.45	3,338.99		
	08/18/04		15.44	20.72	5.28	3,341.10		
	09/21/04		16.31	20.00	3.69	3,340.47		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
TMW-1	10/19/04	3,372.24	10.69	15.95	5.26	3,345.85		
	11/02/04		11.05	14.62	3.57	3,345.74		
	11/15/04		11.43	15.92	4.49	3,345.23		
	12/06/04		11.87	14.65	2.78	3,345.04		
	12/21/04		11.41	15.40	3.99	3,345.32		
	01/03/05		12.68	13.54	0.86	3,344.52		
	01/18/05		12.90	13.31	0.41	3,344.37		
	02/01/05		13.17	13.46	0.29	3,344.12		
	02/22/05		12.97	13.40	0.43	3,344.30		
	05/05/05		13.89	14.96	1.07	3,343.28		
	05/17/05		13.92	14.95	1.03	3,343.26		
	06/08/05		14.30	14.59	0.29	3,342.99		
	06/22/05		14.47	14.57	0.10	3,342.85		
	07/20/05		14.68	14.96	0.28	3,342.61		
	08/15/05		14.22	14.24	0.02	3,343.11		
	08/31/05		14.05	14.15	0.10	3,343.27		
	09/14/05		14.09	14.21	0.12	3,343.22		
	09/28/05		14.28	14.36	0.08	3,343.04		
	11/09/05		14.75	14.88	0.13	3,342.56		
	11/18/05		14.67	14.69	0.02	3,342.66		
	11/30/05		14.91	14.96	0.05	3,342.41		
	12/14/05		-	15.11	-	3,342.22		
	12/28/05		-	15.22	-	3,342.11		
	01/11/06		-	15.15	-	3,342.18		
	01/25/06		-	15.31	-	3,342.02		
	02/08/06		-	15.35	-	3,341.98		
	02/16/06		-	15.06	-	3,342.27		
	02/22/06		-	15.33	-	3,342.00		
	03/08/06		-	15.34	-	3,341.99		
	04/10/06		-	15.24	-	3,342.09		
	05/22/06		-	15.47	-	3,341.86		
	07/12/06		15.54	15.61	0.07	3,341.78		
	02/14/07		15.33	15.85	0.52	3,341.92		
	02/16/07		15.34	15.46	0.12	3,341.97		
	02/28/07		15.32	15.48	0.16	3,341.99	1.00	30.00
	03/13/07		15.38	15.74	0.36	3,341.90	1.00	25.00
	04/09/07		15.53	16.00	0.47	3,341.73		
	05/11/07		14.84	14.88	0.04	3,342.48		
	05/29/07		14.25	14.38	0.13	3,343.06		
	06/06/07		-	14.45	-	3,342.88		
	06/21/07		-	14.53	-	3,342.80		
	08/20/2007 ⁽¹⁾		29.95	30.20	0.25	3,342.25		
	09/07/07		30.09	30.42	0.33	3,342.10	1.00	30.00
	09/19/07		30.18	30.30	0.12	3,342.04		
	10/01/07		-	30.62	-	3,341.62		
	10/15/07		-	30.53	-	3,341.71		
	11/02/07		-	30.55	-	3,341.69		
	11/16/07		-	30.66	-	3,341.58		
	11/29/07		29.47	29.54	0.07	3,342.76		
	12/27/07		30.28	30.60	0.32	3,341.91	2.00	20.00
	01/18/08		30.51	30.59	0.08	3,341.72	0.10	20.00
	02/20/08		30.59	30.78	0.19	3,341.62	0.50	20.00

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
TMW-1	02/29/08	3,372.24	30.53	30.55	0.02	3,341.71		
	03/11/08		30.56	30.66	0.10	3,341.67	0.10	20.00
	04/30/08		30.42	30.93	0.51	3,341.74	0.20	20.00
	05/28/08		30.83	31.07	0.24	3,341.37		
	06/25/08		30.84	31.22	0.38	3,341.34	1.10	20.00
	07/02/08		29.90	31.64	1.74	3,342.08	0.10	20.00
	07/07/08		31.24	31.32	0.08	3,340.99	0.10	10.00
	07/14/08		31.00	32.00	1.00	3,341.09	1.00	25.00
	07/22/08		31.00	31.28	0.28	3,341.20	0.50	10.00
	07/30/08		31.03	31.43	0.40	3,341.15	0.10	10.00
	08/05/08		31.24	31.50	0.26	3,340.96	0.10	15.00
	08/14/08		31.18	31.58	0.40	3,341.00	0.25	5.00
	08/21/08		31.00	31.61	0.61	3,341.15		
	08/27/08		31.06	31.39	0.33	3,341.13	0.25	25.00
	09/20/08		30.91	31.43	0.52	3,341.25	0.50	30.00
	09/29/08		30.88	31.55	0.67	3,341.26	0.50	40.00
	11/06/08		30.84	32.00	1.16	3,341.23		
	11/15/08		30.94	31.82	0.88	3,341.17	0.50	50.00
	11/24/08		30.93	31.30	0.37	3,341.25	0.10	25.00
	11/26/08		30.91	31.43	0.52	3,341.25	0.10	25.00
	01/16/09		30.96	31.70	0.74	3,341.17		
	02/09/09		30.85	32.15	1.30	3,341.20		
	04/08/09		31.10	31.80	0.70	3,341.04	0.50	50.00
	04/16/09		30.92	31.99	1.07	3,341.16	1.00	50.00
	04/22/09		31.01	31.80	0.79	3,341.11	0.50	50.00
	04/29/08		31.01	32.02	1.01	3,341.08	0.30	50.00
	05/14/09		31.56	32.09	0.53	3,340.60		
	07/08/09		31.14	33.46	2.32	3,340.75	1.50	48.50
	07/24/09		31.35	32.35	1.00	3,340.74	1.00	49.00
	08/04/09		31.42	32.18	0.76	3,340.71	1.00	55.00
	08/12/09		31.41	32.36	0.95	3,340.69		
	08/19/09		31.41	32.55	1.14	3,340.66	3.00	15.00
	09/01/09		32.23	32.83	0.60	3,339.92	11.00	47.00
	09/22/09		31.52	33.27	1.75	3,340.46	10.00	
	10/12/09		31.64	32.42	0.78	3,340.48	4.00	41.00
	10/30/09		31.78	31.80	0.02	3,340.46	0.25	25.00
	11/10/09		31.96	32.06	0.10	3,340.27	1.00	25.00
	01/08/10		31.86	32.49	0.63	3,340.29	1.00	15.00
	01/22/10		31.70	32.55	0.85	3,340.41	8.00	5.00
	01/26/10		32.65	32.80	0.15	3,339.57	0.10	10.00
	02/03/10		31.75	32.49	0.74	3,340.38	0.10	10.00
	02/10/10		31.75	32.77	1.02	3,340.34	0.10	20.00
	02/22/10		31.64	33.07	1.43	3,340.39	4.00	50.00
	03/09/10		31.65	32.87	1.22	3,340.41	4.00	50.00
	03/09/10		31.65	32.87	1.22	3,340.41	4.00	50.00
	03/24/10		31.65	33.07	1.42	3,340.38	4.00	30.00
	04/12/10		31.57	33.61	2.04	3,340.36	4.00	30.00
	04/27/10		31.66	33.02	1.36	3,340.38	4.00	50.00
	05/27/10		31.70	33.45	1.75	3,340.28		
	06/21/10		31.70	34.24	2.54	3,340.16	2.50	50.00
	07/07/10		31.87	32.96	1.09	3,340.21		
	07/20/10		31.81	32.94	1.13	3,340.26		

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
TMW-1	08/03/10	3,372.24	32.00	33.09	1.09	3,340.08		
	08/16/10		32.02	33.61	1.59	3,339.98	2.00	30.00
	09/02/10		32.02	33.74	1.72	3,339.96	2.00	50.00
	09/17/10		32.15	33.24	1.09	3,339.93	2.00	50.00
	10/05/10		32.12	33.94	1.82	3,339.85	2.00	30.00
	11/11/10		32.23	33.39	1.16	3,339.84		30.00
	12/15/10		32.16	33.56	1.40	3,339.87		
	12/29/10		32.05	33.93	1.88	3,339.91		
	02/18/11		32.12	34.10	1.98	3,339.82		
	03/02/11		31.16	34.68	3.52	3,340.55		
	03/16/11		32.14	33.12	0.98	3,339.95		
	03/29/11		32.05	34.55	2.50	3,339.82		
	04/15/11		31.96	36.09	4.13	3,339.66		
	04/18/11		31.92	36.08	4.16	3,339.70	4.00	30.00
	04/29/11		31.85	31.87	0.02	3,340.39		
	05/06/11		31.93	36.40	4.47	3,339.64	5.00	20.00
	05/20/11		32.26	34.97	2.71	3,339.57	5.00	20.00
	05/25/11		32.30	34.95	2.65	3,339.54	2.50	20.00
	06/01/11		32.43	34.20	1.77	3,339.54	5.00	20.00
	06/14/11		32.56	34.16	1.60	3,339.44	5.00	20.00
	06/30/11		32.65	34.49	1.84	3,339.31	5.00	20.00
	07/30/11		32.79	35.75	2.96	3,339.01	4.00	40.00
	09/20/11		33.53	34.00	0.47	3,338.64		
	09/23/11		33.53	34.50	0.97	3,338.56		
	10/03/11		33.41	35.71	2.30	3,338.49		
	10/28/11		33.25	37.20	3.95	3,338.40	5.00	20.00
	11/10/11		33.20	37.50	4.30	3,338.40	5.00	20.00
	12/09/11		33.33	37.43	4.10	3,338.30	5.00	20.00
	02/17/12		33.53	35.30	1.77	3,338.44		
	02/24/12		33.45	36.50	3.05	3,338.33	5.00	20.00
	03/27/12		33.70	36.60	2.90	3,338.11	5.00	20.00
	04/12/12		33.60	37.00	3.40	3,338.13	5.00	20.00
	04/19/12		33.55	37.50	3.95	3,338.10	8.00	60.00
	05/05/12		33.68	37.10	3.42	3,338.05	5.00	20.00
	05/17/12		33.73	37.00	3.27	3,338.02		
	06/21/12		33.56	38.47	4.91	3,337.94		
	07/09/12		33.91	38.61	4.70	3,337.63		
	08/02/12		34.52	34.85	0.33	3,337.67		
	08/15/12		34.26	37.50	3.24	3,337.49	10.00	20.00
	08/28/12		34.33	37.70	3.37	3,337.40	5.00	75.00
	09/12/12		34.62	38.10	3.48	3,337.10	10.00	25.00
	09/26/12		34.77	38.03	3.26	3,336.98	13.00	75.00
	10/10/12		34.60	37.74	3.14	3,337.17	3.00	25.00
	10/26/12		34.58	38.13	3.55	3,337.13	8.00	75.00
	11/06/12		34.68	37.53	2.85	3,337.13		
	11/20/12		34.57	38.04	3.47	3,337.15	8.00	18.00
	01/11/13		34.54	38.64	4.10	3,337.09		
	01/25/13		34.56	38.34	3.78	3,337.11	4.75	25.00
	02/07/13		34.51	37.90	3.39	3,337.22	4.25	25.00
	02/22/13		34.80	38.55	3.75	3,336.88	4.75	25.00
	03/08/13		34.55	38.90	4.35	3,337.04	5.50	25.00
	03/21/13		34.55	38.24	3.69	3,337.14	4.75	25.00

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

GROUNDWATER ELEVATION AND PSH¹ DATA

Livingston Ridge to Hugh - P. Sims Pipeline Leak

Lea County, New Mexico

NMOCD File Number 1R-0398

Plains Pipeline, L. P. SRS Number 2001-1005

NMOCD File Number: 1R-0398

Terracon Project Number A4147008

All elevations are measured in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	PSH Thickness	Corrected Relative Groundwater Elevation	PSH Recovered (gallons)	Volume Purged (gallons)
TMW-1	04/04/13	3,372.24	34.64	39.12	4.48	3,336.93	5.50	25.00
	04/17/13		34.85	36.95	2.10	3,337.08	3.00	25.00
	05/01/13		34.74	38.53	3.79	3,336.93	4.75	25.00
	05/23/13		34.66	38.62	3.96	3,336.99	5.00	25.00
	06/13/13		34.65	38.66	4.01	3,336.99	5.00	25.00
	06/28/13		34.93	38.50	3.57	3,336.77	4.50	25.00
	07/10/13		34.95	39.12	4.17	3,336.66	5.25	25.00
	07/24/13		35.06	39.01	3.95	3,336.59	10.00	25.00
	08/08/13		35.28	38.40	3.12	3,336.49	10.00	25.00
	08/22/13		35.48	38.17	2.69	3,336.36	9.50	25.00
	09/05/13		35.61	38.06	2.45	3,336.26		
	09/19/13		35.61	39.15	3.54	3,336.10		
	10/07/13		36.08	36.52	0.44	3,336.09	1.00	25.00
	10/17/13		35.93	37.35	1.42	3,336.10	3.00	25.00
	10/31/13		35.77	37.44	1.67	3,336.22	4.00	25.00
	11/13/13		35.84	36.78	0.94	3,336.26	3.00	25.00
	11/27/13		35.78	37.12	1.34	3,336.26	3.50	25.00
	12/11/13		35.83	36.99	1.16	3,336.24	4.00	25.00
	12/22/13		35.84	36.96	1.12	3,336.23	4.00	25.00
	01/09/14		-	37.22	1.43	3,336.24	4.00	25.00
	01/23/14		-	37.85	2.16	3,336.23	5.00	25.00
	02/05/14		-	37.23	1.45	3,336.24	4.50	25.00
	02/20/14		-	37.33	1.60	3,336.27	1.10	
	03/05/14		-	37.84	2.20	3,336.27	1.00	
	03/19/14		-	38.05	2.43	3,336.26	4.50	25.00
	04/02/14		35.70	37.34	1.64	3,336.29	4.00	25.00
	04/16/14		35.72	36.90	1.18	3,336.34		
	05/01/14		35.64	37.83	2.19	3,336.27	5.00	25.00
	05/13/14		35.76	37.39	1.63	3,336.24	4.50	25.00
	05/28/14		35.92	37.02	1.10	3,336.16	4.00	30.00
	06/10/14		36.02	37.36	1.34	3,336.02	4.00	30.00
	06/24/14		36.39	37.55	1.16	3,335.68	4.00	30.00
	07/08/14		36.59	37.41	0.82	3,335.53		
	07/23/14		36.59	37.57	0.98	3,335.50	4.60	30.00
	08/05/14		36.52	37.64	1.12	3,335.55	6.40	30.00
	08/12/14		36.64	37.44	0.80	3,335.48	5.80	30.00
	09/03/14		36.73	37.94	1.21	3,335.33	6.10	30.00
	09/16/14		36.52	37.21	0.69	3,335.62	5.10	30.00
	09/30/14		33.28	33.85	0.57	3,338.87	6.80	30.00
	10/04/14		33.05	33.22	0.17	3,339.16		
	10/21/14		32.78	33.49	0.71	3,339.35	6.23	30.00
	10/28/14		32.84	33.46	0.62	3,339.31	7.02	30.00
	11/13/14		32.77	33.38	0.61	3,339.38	7.58	30.00
	11/25/14		32.84	34.75	1.91	3,339.11	9.02	30.00
	12/10/14		32.82	35.42	2.60	3,339.03	9.26	30.00
	12/21/14		32.92	35.40	2.48	3,338.95	9.65	30.00

1. PSH = Phase Separated Hydrocarbons

2. - = Measureable thickness of PSH not observed

2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-1	11/02/04	0.7250	0.3210	0.9950	0.5370
	03/22/05	Not Sampled Due to the Presence of PSH ³			
	05/17/05	Not Sampled Due to the Presence of PSH			
	08/15/05	Not Sampled Due to the Presence of PSH			
	11/18/05	0.1040	<0.001	0.0328	0.0074
	02/16/06	1.0800	<0.001	0.4000	0.0838
	05/22/06	1.0600	<0.005	1.1000	0.0732
	08/07/06	1.1500	<0.001	0.3230	0.0276
	11/21/06	Not Sampled Due to the Presence of PSH			
	02/28/07	0.7140	<0.02	0.4390	0.4980
	05/11/07	0.9660	0.0309	0.2880	0.0397
	08/10/07	1.0310	<0.05	0.1670	<0.05
	11/15/07	Not Sampled Due to the Presence of PSH			
	02/29/08	0.0033	<0.002	<0.001	<0.001
	05/28/08	Not Sampled Due to the Presence of PSH			
	08/21/08	Not Sampled Due to the Presence of PSH			
	11/08/08	Not Sampled Due to the Presence of PSH			
	02/10/09	0.4048	0.0022	0.0436	<0.001
	05/15/09	0.5686	<0.002	0.0719	<0.001
	08/13/09	0.2665	<0.02	0.0628	<0.1
	11/11/09	Not Sampled Due to the Presence of PSH			
	02/05/10	0.6889	0.0139	0.0796	0.0278
	05/27/10	Not Sampled Due to the Presence of PSH			
	08/16/10	Not Sampled Due to the Presence of PSH			
	11/11/10	Not Sampled Due to the Presence of PSH			
	02/29/12	Not Sampled Due to the Presence of PSH			
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

2. NA = Not Analyzed

3. PSH = Phase Separated Hydrocarbons

4. NMWQCC = New Mexico Water Quality Control Commission

Bold text indicates a concentration exceeding the NMWQCC Delineation and Remediation Limits

2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-1	05/18/12	Not Sampled Due to the Presence of PSH			
	08/15/12	Not Sampled Due to the Presence of PSH			
	11/07/12	0.1110	<0.02	0.0695	<0.02
	02/21/13	Not Sampled Due to the Presence of PSH			
	05/23/13	0.5780	0.0203	0.3680	0.2080
	08/08/13	0.0966	0.0070	0.0879	0.0411
	11/13/13	0.0553	<0.001	0.0105	0.0020
	02/20/14	0.0217	<0.001	0.0055	0.0036
	04/16/14	0.0375	<0.0012	0.0075	<0.0007
	07/08/14	0.0085	<0.0012	0.0028	<0.0007
	10/04/14	0.0066	<0.0012	0.0015	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

2. NA = Not Analyzed

3. PSH = Phase Separated Hydrocarbons

4. NMWQCC = New Mexico Water Quality Control Commission

Bold text indicates a concentration exceeding the NMWQCC Delineation and Remediation Limits

2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-2	09/30/02	<0.001	<0.001	<0.001	<0.001
	11/06/02	<0.001	<0.001	<0.001	<0.001
	02/27/03	<0.001	<0.001	<0.001	<0.001
	05/12/03	<0.001	<0.001	<0.001	<0.001
	08/20/03	<0.001	<0.001	<0.001	<0.001
	11/10/03	<0.001	<0.001	<0.001	<0.001
	02/17/04	<0.001	<0.001	<0.001	<0.001
	05/06/04	<0.001	<0.001	<0.001	<0.001
	03/22/05	Not Sampled Due to the Presence of PSH			
	05/17/05	Not Sampled Due to the Presence of PSH			
	08/15/05	<0.001	<0.001	<0.001	<0.001
	11/18/05	Not Sampled Due to the Presence of PSH			
	02/16/06	<0.001	<0.001	<0.001	<0.001
	05/22/06				
	08/07/06				
	02/28/07	<0.001	<0.001	<0.001	<0.001
	05/11/07	Not Sampled Due to the Presence of PSH			
	08/10/07	Not Sampled Due to the Presence of PSH			
	11/15/07	Not Sampled Due to the Presence of PSH			
	02/29/08	<0.001	<0.002	0.0010	<0.001
	05/28/08	Not Sampled Due to the Presence of PSH			
	08/21/08	Not Sampled Due to the Presence of PSH			
	11/08/08	Not Sampled Due to the Presence of PSH			
	02/10/09	<0.001	<0.002	<0.001	<0.001
	05/14/09	Not Sampled Due to the Presence of PSH			
	08/12/09	Not Sampled Due to the Presence of PSH			
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

2. NA = Not Analyzed

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4. NMWQCC = New Mexico Water Quality Control Commission

Bold text indicates a concentration exceeding the NMWQCC Delineation and Remediation Limits

2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-2	11/11/09	Not Sampled Due to the Presence of PSH			
	02/05/10	<0.001	<0.002	<0.001	<0.001
	05/27/10	Not Sampled Due to the Presence of PSH			
	08/16/10	Not Sampled Due to the Presence of PSH			
	11/11/10	<0.001	<0.001	<0.001	<0.001
	11/17/11	<0.001	<0.001	<0.001	<0.001
	02/29/12	Not Sampled Due to the Presence of PSH			
	05/18/12	Not Sampled Due to the Presence of PSH			
	08/15/12	Not Sampled Due to the Presence of PSH			
	11/06/12	<0.001	<0.001	<0.001	<0.001
	02/21/13	<0.001	<0.002	<0.001	<0.001
	05/23/13	<0.0005	<0.001	<0.0007	<0.0007
	08/08/13	<0.0005	<0.001	<0.0007	<0.0007
	11/13/13	<0.0005	<0.001	<0.0007	<0.0007
	02/20/14	<0.0005	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	<0.0008	<0.0012	<0.0008	<0.0007
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

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2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-3	09/30/02	<0.001	<0.001	<0.001	<0.001
	11/06/02	<0.001	<0.001	<0.001	<0.001
	02/27/03	<0.001	<0.001	<0.001	<0.001
	05/12/03	<0.001	<0.001	<0.001	<0.001
	08/20/03	<0.001	<0.001	<0.001	<0.001
	11/10/03	0.0050	<0.001	<0.001	<0.001
	11/25/03	0.0010	<0.001	<0.001	<0.001
	02/17/04	<0.001	<0.001	<0.001	<0.001
	05/06/04	<0.001	<0.001	<0.001	<0.001
	03/22/05	Not Sampled Due to the Presence of PSH			
	05/17/05	Not Sampled Due to the Presence of PSH			
	08/15/05	0.0098	0.0019	<0.001	<0.001
	11/18/05	Not Sampled Due to the Presence of PSH			
	02/16/06	0.0082	<0.001	<0.001	<0.001
	05/22/06	Not Sampled Due to the Presence of PSH			
	08/07/06	Not Sampled Due to the Presence of PSH			
	11/21/06	Not Sampled Due to the Presence of PSH			
	02/28/07	<0.001	<0.001	<0.001	<0.001
	05/11/07	Not Sampled Due to the Presence of PSH			
	08/10/07	Not Sampled Due to the Presence of PSH			
	11/15/07	Not Sampled Due to the Presence of PSH			
	02/29/08	<0.001	<0.002	<0.001	<0.001
	05/28/08	Not Sampled Due to the Presence of PSH			
	08/21/08	Not Sampled Due to the Presence of PSH			
	11/08/08	Not Sampled Due to the Presence of PSH			
	02/10/09	<0.001	<0.002	<0.001	<0.001
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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2014 Annual Report

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Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-3	05/14/09	Not Sampled Due to the Presence of PSH			
	08/12/09	Not Sampled Due to the Presence of PSH			
	11/11/09	Not Sampled Due to the Presence of PSH			
	02/05/10	<0.001	<0.002	<0.001	<0.001
	05/27/10	Not Sampled Due to the Presence of PSH			
	08/16/10	Not Sampled Due to the Presence of PSH			
	11/11/10	Not Sampled Due to the Presence of PSH			
	02/29/12	Dry - Not Sampled			
	05/18/12	Dry - Not Sampled			
	08/15/12	Dry - Not Sampled			
	11/06/12	Dry - Not Sampled			
	02/21/13	Dry - Not Sampled			
	05/23/13	Dry - Not Sampled			
	08/08/13	Dry - Not Sampled			
	11/13/13	Dry - Not Sampled			
	02/20/14	Dry - Not Sampled			
	04/16/14	Dry - Not Sampled			
	07/08/14	Dry - Not Sampled			
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-4	09/30/02	2.4300	0.7400	0.4660	0.2840
	11/06/02	3.9600	0.0150	0.1740	0.1080
	02/27/03	Not Sampled Due to the Presence of PSH			
	05/12/03	1.8800	0.0040	0.7230	0.0560
	08/20/03	Not Sampled Due to the Presence of PSH			
	11/10/03	0.4080	0.0010	0.0110	0.0010
	02/17/04	0.0690	0.0010	0.0030	0.0010
	05/06/04	0.5490	0.2130	0.3940	0.1940
	08/18/04	Not Sampled Due to the Presence of PSH			
	11/02/04	0.7450	<0.001	0.0086	0.0036
	03/22/05	Not Sampled Due to the Presence of PSH			
	05/17/05	Not Sampled Due to the Presence of PSH			
	08/15/05	0.0038	<0.001	0.0200	0.0084
	11/18/05	0.1030	<0.001	0.0909	<0.001
	02/16/06	0.0282	<0.001	0.1220	<0.001
	05/22/06	0.0854	<0.001	0.3550	<0.001
	08/07/06	0.0331	<0.001	0.1390	<0.001
	11/21/06	0.0361	<0.005	0.2520	<0.005
	02/28/07	0.0221	<0.001	0.0142	0.1160
	05/11/07	0.0390	0.0063	0.3360	0.0073
	08/10/07	0.0171	<0.01	0.3113	<0.01
	11/15/07	0.0108	<0.002	<0.001	0.0031
	02/29/08	0.0578	<0.002	0.0650	<0.001
	05/28/08	Not Sampled Due to the Presence of PSH			
	08/21/08	0.0232	<0.002	0.0303	0.0147
	11/08/08	0.0374	<0.002	0.0041	<0.001
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-4	02/10/09	0.0539	<0.002	0.0206	<0.001
	05/15/09	0.0632	0.0043	0.1016	<0.001
	08/12/09	0.0322	<0.002	0.0350	0.0025
	11/11/09	0.0725	<0.002	0.0414	<0.001
	02/05/10	0.0198	<0.002	0.0175	<0.001
	05/27/10	0.0787	<0.002	0.0595	<0.001
	08/16/10	0.2080	<0.1	0.1350	<0.05
	11/11/10	0.0335	<0.002	0.0196	<0.001
	02/29/12	Not Sampled Due to the Presence of PSH			
	05/18/12	Not Sampled Due to the Presence of PSH			
	08/15/12	Not Sampled Due to the Presence of PSH			
	11/06/12	Not Sampled Due to the Presence of PSH			
	02/21/13	Not Sampled Due to the Presence of PSH			
	05/23/13	0.0347	<0.001	0.0162	0.0062
	08/08/13	0.0659	<0.001	0.0572	0.0179
	11/13/13	0.0106	<0.001	0.0050	0.0018
	02/20/14	0.0012	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	0.0146	<0.0012	0.0080	0.0021
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-5	09/30/02	Not Sampled Due to the Presence of PSH			
	11/06/02	Not Sampled Due to the Presence of PSH			
	02/27/03	Not Sampled Due to the Presence of PSH			
	05/12/03	0.2260	0.0100	0.3990	0.5670
	08/20/03	Not Sampled Due to the Presence of PSH			
	11/10/03	0.5110	<0.001	1.0700	0.0200
	02/17/04	0.4450	0.0480	3.3300	0.1530
	05/06/04	0.0744	0.0207	0.2220	0.1480
	08/24/04	0.1560	0.0039	0.2320	0.1240
	11/02/04	0.3710	<0.001	0.0209	0.0010
	03/22/05	Not Sampled Due to the Presence of PSH			
	05/17/05	Not Sampled Due to the Presence of PSH			
	08/15/05	Not Sampled Due to the Presence of PSH			
	11/18/05	0.0886	<0.001	0.0448	0.0180
	02/16/06	0.0108	<0.001	0.0086	0.0020
	05/22/06	<0.001	<0.001	0.0015	<0.001
	08/07/06	0.0386	<0.001	0.0619	0.0204
	11/21/06	Not Sampled Due to the Presence of PSH			
	02/28/07	0.3600	<0.005	0.4120	5.0400
	05/11/07	0.3970	0.0141	0.3870	0.1960
	08/10/07	0.2765	<0.025	0.2858	0.1315
	11/15/07	0.0039	<0.002	<0.001	<0.001
	02/29/08	0.0030	<0.002	0.0036	0.0018
	05/28/08	Not Sampled Due to the Presence of PSH			
	08/21/08	0.0107	<0.002	0.0032	0.0027
	11/08/08	0.2551	<0.01	0.2323	0.1145
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-5	02/10/09	0.2425	<0.01	0.2885	0.1170
	05/15/09	0.2339	0.0234	0.1006	0.0782
	08/12/09	0.2247	<0.01	0.2958	0.1264
	11/11/09	Not Sampled Due to the Presence of PSH			
	02/05/10	0.7078	<0.01	0.4458	0.1105
	05/27/10	Not Sampled Due to the Presence of PSH			
	08/16/10	Not Sampled Due to the Presence of PSH			
	11/11/10	0.2260	<0.001	0.2402	0.1087
	02/17/11	0.1650	<0.001	0.2020	0.0906
	08/18/11	0.1280	0.0034	0.1620	0.0413
	02/29/12	Not Sampled Due to the Presence of PSH			
	05/18/12	Not Sampled Due to the Presence of PSH			
	08/15/12	Not Sampled Due to the Presence of PSH			
	11/07/12	0.1250	<0.005	0.3370	0.1770
	02/21/13	Not Sampled Due to the Presence of PSH			
	05/23/13	0.0833	<0.001	0.1400	0.0680
	08/08/13	0.0637	0.0028	0.0714	0.0384
	11/13/13	0.0380	<0.001	0.1130	0.0139
	02/20/14	0.0308	<0.001	0.0707	0.0087
	04/16/14	0.0259	<0.0012	0.0714	0.0086
	07/08/14	0.0069	<0.0012	0.0296	<0.0007
	10/04/14	0.0811	<0.0012	0.1350	0.2240
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-6	09/30/02	<0.001	<0.001	<0.001	<0.001
	11/06/02	<0.001	<0.001	<0.001	<0.001
	02/27/03	<0.001	<0.001	<0.001	<0.001
	05/12/03	<0.001	<0.001	<0.001	<0.001
	08/20/03	<0.001	<0.001	<0.001	<0.001
	11/10/03	<0.001	<0.001	<0.001	<0.001
	02/17/04	<0.001	<0.001	<0.001	<0.001
	05/06/04	0.0043	<0.001	<0.001	0.0013
	08/18/04	Not Sampled Due to the Presence of PSH			
	11/02/04	<0.001	<0.001	<0.001	<0.001
	03/22/05	Not Sampled Due to the Presence of PSH			
	05/17/05	Not Sampled Due to the Presence of PSH			
	08/15/05	<0.001	<0.001	<0.001	<0.001
	11/18/05				
	02/16/06	0.0013	<0.001	0.0030	<0.001
	05/22/06	Not Sampled Due to the Presence of PSH			
	08/07/06	Not Sampled Due to the Presence of PSH			
	11/21/06	Not Sampled Due to the Presence of PSH			
	02/28/07	<0.001	<0.001	<0.001	0.0027
	05/11/07	0.0007	0.0007	0.0021	0.0067
	08/10/07	0.0012	<0.001	0.0059	0.0014
	11/15/07	<0.001	<0.002	0.0010	<0.001
	02/29/08	<0.001	<0.002	<0.001	<0.001
	05/28/08	<0.001	<0.002	<0.001	<0.001
	08/21/08	0.0017	<0.002	<0.001	<0.001
	11/08/08	<0.001	<0.002	<0.001	<0.001
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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2014 Annual Report

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Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-6	02/10/09	<0.001	<0.002	<0.001	<0.001
	05/15/09	<0.001	<0.002	<0.001	<0.001
	08/13/09	<0.001	<0.002	<0.001	<0.001
	11/11/09	<0.001	<0.002	<0.001	<0.001
	02/05/10	<0.001	<0.002	<0.001	<0.001
	05/27/10	<0.001	<0.002	<0.001	<0.001
	08/16/10	<0.001	<0.002	<0.001	<0.001
	11/11/10	<0.001	<0.002	<0.001	<0.001
	02/17/11	<0.001	<0.002	<0.001	<0.001
	05/25/11	<0.001	<0.002	<0.001	<0.001
	08/18/11	<0.001	<0.002	<0.001	<0.001
	11/17/11	<0.001	<0.002	<0.001	<0.001
	02/29/12	<0.001	<0.002	<0.001	<0.001
	05/18/12	<0.001	<0.001	<0.001	<0.001
	08/15/12	<0.001	<0.001	<0.001	<0.001
	11/06/12	<0.001	<0.001	<0.001	<0.001
	02/22/13	<0.001	<0.002	<0.001	<0.001
	05/23/13	<0.0005	<0.001	<0.0007	<0.0007
	08/08/13	<0.0005	<0.001	<0.0007	<0.0007
	11/13/13	<0.0005	<0.001	<0.0007	<0.0007
	02/20/14	<0.0005	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	<0.0008	<0.0012	<0.0008	<0.0007
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-7	09/30/02	<0.001	<0.001	<0.001	<0.001
	11/06/02	<0.001	<0.001	<0.001	<0.001
	02/27/03	<0.001	<0.001	<0.001	<0.001
	05/12/03	<0.001	<0.001	<0.001	<0.001
	08/20/03	<0.001	<0.001	<0.001	<0.001
	11/10/03	<0.001	<0.001	<0.001	<0.001
	02/17/04	<0.001	<0.001	<0.001	<0.001
	05/06/04	<0.001	<0.001	<0.001	<0.001
	03/22/05	Not Sampled Due to the Presence of PSH			
	05/17/05	Not Sampled Due to the Presence of PSH			
	08/15/05	0.0059	<0.001	<0.001	<0.001
	11/18/05	Not Sampled Due to the Presence of PSH			
	02/16/06	<0.001	<0.001	<0.001	<0.001
	05/22/06	Not Sampled Due to the Presence of PSH			
	08/07/06	Not Sampled Due to the Presence of PSH			
	11/21/06	Not Sampled Due to the Presence of PSH			
	02/28/07	<0.001	<0.001	<0.001	
	05/11/07	Not Sampled Due to the Presence of PSH			
	08/10/07	Not Sampled Due to the Presence of PSH			
	11/15/07	Not Sampled Due to the Presence of PSH			
	02/29/08	<0.001	<0.002	<0.001	<0.001
	05/28/08	Not Sampled Due to the Presence of PSH			
	08/21/08	Not Sampled Due to the Presence of PSH			
	11/08/08	Not Sampled Due to the Presence of PSH			
	02/10/09	<0.001	<0.002	<0.001	<0.001
	05/14/09	Not Sampled Due to the Presence of PSH			
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

2. NA = Not Analyzed

3. PSH = Phase Separated Hydrocarbons

4. NMWQCC = New Mexico Water Quality Control Commission

Bold text indicates a concentration exceeding the NMWQCC Delineation and Remediation Limits

2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-7	08/12/09	Not Sampled Due to the Presence of PSH			
	11/11/09	Not Sampled Due to the Presence of PSH			
	02/05/10	<0.001	<0.002	<0.001	<0.001
	05/27/10	Not Sampled Due to the Presence of PSH			
	08/16/10	Not Sampled Due to the Presence of PSH			
	11/11/10	<0.001	<0.002	<0.001	<0.001
	11/17/11	<0.001	<0.002	<0.001	<0.001
	02/29/12	<0.001	<0.002	<0.001	<0.001
	05/18/12	<0.001	<0.001	<0.001	<0.001
	08/15/12	<0.001	<0.001	<0.001	<0.001
	11/07/12	<0.001	<0.001	<0.001	<0.001
	02/22/13	<0.001	<0.002	<0.001	<0.001
	05/23/13	<0.0005	<0.001	<0.0007	<0.0007
	08/08/13	<0.0005	<0.001	<0.0007	<0.0007
	11/13/13	<0.0005	<0.001	<0.0007	<0.0007
	02/20/14	<0.0005	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	<0.0008	<0.0012	<0.0008	<0.0007
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

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2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-8	09/30/02	<0.001	<0.001	<0.001	<0.001
	11/06/02	<0.001	<0.001	<0.001	<0.001
	02/27/03	<0.001	<0.001	<0.001	<0.001
	05/12/03	<0.001	<0.001	<0.001	<0.001
	08/20/03	<0.001	<0.001	<0.001	<0.001
	11/10/03	<0.001	<0.001	<0.001	<0.001
	02/17/04	<0.001	<0.001	<0.001	<0.001
	05/06/04	<0.001	<0.001	<0.001	<0.001
	03/22/05	Not Sampled Due to the Presence of PSH			
	05/17/05	Not Sampled Due to the Presence of PSH			
	08/15/05	<0.001	<0.001	<0.001	<0.001
	11/18/05	Not Sampled Due to the Presence of PSH			
	02/16/06	<0.001	<0.001	<0.001	<0.001
	05/22/06	Not Sampled Due to the Presence of PSH			
	08/07/06	Not Sampled Due to the Presence of PSH			
	11/21/06	Not Sampled Due to the Presence of PSH			
	02/28/07	<0.001	<0.001	<0.001	<0.001
	05/11/07	Not Sampled Due to the Presence of PSH			
	08/10/07	Not Sampled Due to the Presence of PSH			
	11/15/07	Not Sampled Due to the Presence of PSH			
	02/29/08	<0.001	<0.002	<0.001	<0.001
	05/28/08	Not Sampled Due to the Presence of PSH			
	08/21/08	Not Sampled Due to the Presence of PSH			
	11/08/08	Not Sampled Due to the Presence of PSH			
	02/10/09	<0.001	<0.002	<0.001	<0.001
	05/14/09	Not Sampled Due to the Presence of PSH			
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

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2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-8	08/12/09	Not Sampled Due to the Presence of PSH			
	11/11/09	Not Sampled Due to the Presence of PSH			
	02/05/10	<0.001	<0.002	<0.001	<0.001
	05/27/10	Not Sampled Due to the Presence of PSH			
	08/16/10	Not Sampled Due to the Presence of PSH			
	11/11/10	<0.001	<0.002	<0.001	<0.001
	11/17/11	<0.001	<0.002	<0.001	<0.001
	02/29/12	Not Sampled Due to the Presence of PSH			
	05/18/12	<0.001	<0.001	<0.001	<0.001
	08/15/12	<0.001	<0.001	<0.001	<0.001
	11/06/12	<0.001	<0.001	<0.001	<0.001
	02/22/13	<0.001	<0.001	<0.001	<0.001
	05/23/13	<0.0005	<0.001	<0.0007	<0.0007
	08/08/13	<0.0005	<0.001	<0.0007	<0.0007
	11/13/13	<0.0005	<0.001	<0.0007	<0.0007
	02/20/14	<0.0005	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	<0.0008	<0.0012	<0.0008	<0.0007
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-9	09/30/02	<0.001	<0.001	<0.001	<0.001
	11/06/02	<0.001	<0.001	<0.001	<0.001
	02/27/03	<0.001	<0.001	<0.001	<0.001
	05/12/03	<0.001	<0.001	<0.001	<0.001
	08/20/03	<0.001	<0.001	<0.001	<0.001
	11/10/03	<0.001	<0.001	<0.001	<0.001
	02/17/04	0.0030	<0.001	<0.001	<0.001
	05/06/04	0.0027	<0.001	<0.001	<0.001
	08/18/04	Not Sampled Due to the Presence of PSH			
	11/02/04	0.1360	<0.001	<0.001	0.0095
	03/22/05	0.0146	<0.001	<0.001	<0.001
	05/17/05	0.0036	<0.001	<0.001	<0.001
	08/15/05	<0.001	<0.001	<0.001	<0.001
	11/18/05	<0.001	<0.001	<0.001	<0.001
	02/16/06	<0.001	<0.001	<0.001	<0.001
	05/22/06	<0.001	<0.001	<0.001	<0.001
	08/07/06	<0.001	<0.001	<0.001	<0.001
	11/21/06	<0.001	<0.001	<0.001	<0.001
	02/28/07	<0.001	<0.001	<0.001	<0.001
	05/11/07	<0.001	<0.001	<0.001	<0.001
	08/10/07	<0.001	<0.001	<0.001	<0.001
	11/15/07	<0.001	<0.002	<0.001	<0.001
	02/29/08	<0.001	<0.002	<0.001	<0.001
	05/28/08	<0.001	<0.002	<0.001	<0.001
	08/21/08	<0.001	<0.002	<0.001	<0.001
	11/08/08	<0.001	<0.002	<0.001	<0.001
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

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2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
 Lea County, New Mexico
 Plains Pipeline, L. P. SRS Number 2001-1005
 NMOCD File Number: 1R-0398
 Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-9	02/10/09	<0.001	<0.002	<0.001	<0.001
	05/15/09	<0.001	<0.002	<0.001	<0.001
	08/13/09	<0.001	<0.002	<0.001	<0.001
	11/11/09	<0.001	<0.002	<0.001	<0.001
	02/05/10	0.0016	<0.002	<0.001	<0.001
	05/27/10	<0.001	<0.002	<0.001	<0.001
	08/16/10	<0.001	<0.002	<0.001	<0.001
	11/11/10	<0.001	<0.002	<0.001	<0.001
	02/17/11	<0.001	<0.002	<0.001	<0.001
	05/25/11	<0.001	<0.002	<0.001	<0.001
	08/18/11	<0.001	<0.002	<0.001	<0.001
	11/17/11	<0.001	<0.002	<0.001	<0.001
	02/29/12	<0.001	<0.002	<0.001	<0.001
	05/18/12	<0.001	<0.001	<0.001	<0.001
	08/15/12	<0.001	<0.001	<0.001	<0.001
	11/06/12	<0.001	<0.001	<0.001	<0.001
	02/22/13	<0.001	<0.001	<0.001	<0.001
	05/23/13	Not Sampled Due to the Presence of PSH			
	08/08/13	<0.0005	<0.001	<0.0007	<0.0007
	11/13/13	<0.0005	<0.001	<0.0007	<0.0007
	02/20/14	<0.0005	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	<0.0008	<0.0012	<0.0008	<0.0007
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-10	09/30/02	<0.001	<0.001	<0.001	<0.001
	11/06/02	<0.001	<0.001	<0.001	<0.001
	02/27/03	<0.001	<0.001	<0.001	<0.001
	05/12/03	<0.001	<0.001	<0.001	<0.001
	08/20/03	<0.001	<0.001	<0.001	<0.001
	11/10/03	<0.001	<0.001	<0.001	<0.001
	02/17/04	<0.001	<0.001	<0.001	<0.001
	05/06/04	<0.001	<0.001	<0.001	<0.001
	03/22/05	Not Sampled Due to the Presence of PSH			
	05/17/05	Not Sampled Due to the Presence of PSH			
	08/15/05	0.0251	0.0106	0.0020	0.0010
	11/18/05	Not Sampled Due to the Presence of PSH			
	02/16/06	0.0361	<0.001	0.0032	<0.001
	05/22/06	0.1510	<0.001	0.0028	<0.001
	08/07/06	0.0247	<0.001	<0.001	<0.001
	11/21/06	0.0056	<0.001	<0.001	<0.001
	02/28/07	<0.001	<0.001	<0.001	<0.001
	05/11/07	0.0015	<0.001	0.0004	<0.001
	08/10/07	0.0020	<0.001	0.0028	<0.001
	11/15/07	0.0040	<0.002	<0.001	<0.001
	02/29/08	<0.001	<0.002	<0.001	<0.001
	05/28/08	<0.001	<0.002	<0.001	<0.001
	08/21/08	<0.001	<0.002	<0.001	<0.001
	11/08/08	<0.001	<0.002	<0.001	<0.001
	02/10/09	<0.001	<0.002	<0.001	<0.001
	05/14/09	<0.001	<0.002	<0.001	<0.001
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-10	08/12/09	<0.001	<0.002	<0.001	<0.001
	11/11/09	<0.001	<0.002	<0.001	<0.001
	02/05/10	<0.001	<0.002	<0.001	<0.001
	05/27/10	<0.001	<0.002	<0.001	<0.001
	08/16/10	0.0011	<0.002	<0.001	<0.001
	11/11/10	<0.001	<0.002	<0.001	<0.001
	02/17/11	<0.001	<0.002	0.0012	<0.001
	05/25/11	<0.001	<0.002	0.0012	<0.001
	08/18/11	<0.001	<0.002	<0.001	<0.001
	11/17/11	<0.001	<0.002	<0.001	<0.001
	02/29/12	<0.001	<0.002	<0.001	<0.001
	05/18/12	<0.001	<0.001	<0.001	<0.001
	08/15/12	<0.001	<0.001	<0.001	<0.001
	11/06/12	<0.001	<0.001	<0.001	<0.001
	02/22/13	<0.001	<0.001	<0.001	<0.001
	05/24/13	<0.0005	<0.001	<0.0007	<0.0007
	08/08/13	<0.0005	<0.001	<0.0007	<0.0007
	11/13/13	<0.0005	<0.001	<0.0007	<0.0007
	02/20/14	<0.0005	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	<0.0008	<0.0012	<0.0008	<0.0007
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-11	11/06/02	<0.001	<0.001	<0.001	<0.001
	02/27/03	<0.001	<0.001	<0.001	<0.001
	05/12/03	<0.001	<0.001	<0.001	<0.001
	08/20/03	0.1470	<0.001	0.0690	0.0330
	11/10/03	0.5260	<0.001	<0.001	0.0470
	02/17/04	0.1030	<0.001	<0.001	0.0070
	05/06/04	2.0500	<0.005	0.2530	0.1190
	08/18/04	0.0973	<0.001	<0.001	0.0014
	11/02/04	0.0870	<0.001	0.0016	<0.001
	03/22/05	0.0246	<0.001	0.0016	<0.001
	05/17/05	0.0263	<0.001	0.0035	<0.001
	08/15/05	0.0127	<0.001	<0.001	<0.001
	11/18/05	0.0092	<0.001	0.0012	<0.001
	02/16/06	0.0028	<0.001	<0.001	<0.001
	05/22/06	0.0017	<0.001	<0.001	<0.001
	08/07/06	<0.001	<0.001	<0.001	<0.001
	11/21/06	0.0017	<0.001	<0.001	<0.001
	02/28/07	<0.001	<0.001	<0.001	0.0039
	05/11/07	0.0035	0.0009	0.0005	0.0003
	08/10/07	<0.001	<0.001	<0.001	0.0011
	11/15/07	0.0021	<0.002	0.0014	0.0076
	02/29/08	<0.001	<0.002	<0.001	<0.001
	05/28/08	<0.001	<0.002	<0.001	<0.001
	08/21/08	<0.001	<0.002	<0.001	<0.001
	11/08/08	0.0012	<0.002	<0.001	<0.001
	02/10/09	<0.001	<0.002	<0.001	<0.001
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

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2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
 Lea County, New Mexico
 Plains Pipeline, L. P. SRS Number 2001-1005
 NMOCD File Number: 1R-0398
 Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-11	05/14/09	<0.001	<0.002	<0.001	<0.001
	08/12/09	<0.001	<0.002	<0.001	<0.001
	11/11/09	<0.001	<0.002	<0.001	<0.001
	02/05/10	<0.001	<0.002	<0.001	<0.001
	05/27/10	<0.001	<0.002	<0.001	<0.001
	08/16/10	<0.001	<0.002	<0.001	<0.001
	11/11/10	<0.001	<0.002	<0.001	<0.001
	02/17/11	<0.001	<0.002	<0.001	<0.001
	05/25/11	<0.001	<0.002	<0.001	<0.001
	08/18/11	<0.001	<0.002	<0.001	<0.001
	11/17/11	<0.001	<0.002	<0.001	<0.001
	02/29/12	<0.001	<0.002	<0.001	<0.001
	05/18/12	<0.001	<0.001	<0.001	<0.001
	08/15/12	<0.001	<0.001	<0.001	<0.001
	11/06/12	<0.001	<0.001	<0.001	<0.001
	02/22/13	<0.001	<0.001	<0.001	<0.001
	05/23/13	Not Sampled Due to the Presence of PSH			
	08/08/13	<0.0005	<0.001	<0.0007	<0.0007
	11/13/13	<0.0005	<0.001	<0.0007	<0.0007
	02/20/14	<0.0005	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	<0.0008	<0.0012	<0.0008	<0.0007
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

2. NA = Not Analyzed

3. PSH = Phase Separated Hydrocarbons

4. NMWQCC = New Mexico Water Quality Control Commission

Bold text indicates a concentration exceeding the NMWQCC Delineation and Remediation Limits

2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-12	11/06/02	2.3000	0.0120	0.0050	0.0920
	02/27/03	<0.001	<0.001	<0.001	<0.001
	05/12/03	0.2400	<0.001	<0.001	0.0150
	08/20/03	0.2570	<0.001	<0.001	0.0130
	11/10/03	0.5440	<0.001	<0.001	0.0100
	02/17/04	1.2100	<0.001	<0.001	0.0020
	05/06/04	1.1700	<0.002	0.0659	0.0304
	08/18/04	0.0612	<0.001	0.0222	<0.001
	11/02/04	0.0322	<0.001	0.0025	<0.001
	03/22/05	0.0055	<0.001	0.0037	<0.001
	05/17/05	0.0010	<0.001	<0.001	<0.001
	08/15/05	<0.001	<0.001	<0.001	<0.001
	11/18/05	<0.001	<0.001	<0.001	<0.001
	02/16/06	<0.001	<0.001	<0.001	<0.001
	05/22/06	<0.001	<0.001	<0.001	<0.001
	08/07/06	<0.001	<0.001	<0.001	<0.001
	11/21/06	<0.001	<0.001	<0.001	<0.001
	02/28/07	<0.001	<0.001	<0.001	0.0031
	05/11/07	0.0021	0.0009	0.0005	0.0004
	08/10/07	<0.005	<0.005	<0.005	<0.005
	11/15/07	<0.001	<0.002	<0.001	<0.001
	02/29/08	0.0011	<0.002	<0.001	0.0030
	05/28/08	<0.001	<0.002	<0.001	0.0020
	08/21/08	0.0518	<0.002	0.0398	<0.001
	11/08/08	0.0033	<0.002	<0.001	<0.001
	02/10/09	<0.001	<0.002	<0.001	<0.001
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

2. NA = Not Analyzed

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2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-12	05/14/09	<0.001	<0.002	<0.001	<0.001
	08/12/09	<0.001	<0.002	<0.001	<0.001
	11/11/09	0.0020	<0.002	0.0020	0.0071
	02/05/10	<0.001	<0.002	<0.001	<0.001
	05/27/10	0.0010	<0.002	<0.001	<0.001
	08/16/10	<0.001	<0.002	<0.001	0.0017
	11/11/10	<0.001	<0.002	<0.001	<0.001
	02/17/11	<0.001	<0.002	<0.001	0.0026
	05/25/11	0.0022	<0.002	<0.001	0.0027
	08/18/11	0.0248	<0.002	0.0074	<0.001
	11/17/11	0.0024	<0.002	<0.001	0.0028
	02/29/12	<0.001	<0.002	<0.001	<0.001
	05/18/12	0.0052	<0.001	0.0026	<0.001
	08/15/12	0.1320	<0.001	0.0432	0.0065
	11/06/12	<0.001	<0.001	<0.001	0.0014
	02/22/13	<0.001	<0.001	<0.001	0.0014
	05/23/13	Not Sampled Due to the Presence of PSH			
	08/08/13	0.0121	<0.001	0.0037	0.0009
	11/13/13	<0.0005	<0.001	<0.0007	<0.0007
	02/20/14	<0.0005	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	0.0200	<0.0012	0.0166	<0.0007
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC ⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-13	11/06/02	0.0800	<0.001	<0.001	0.0010
	02/27/03	2.1400	0.0010	0.0950	0.1110
	05/12/03	1.6500	0.0010	0.2020	0.1700
	08/20/03	1.7100	<0.001	0.1380	0.5110
	11/10/03	1.5500	<0.001	0.0840	0.0020
	02/17/04	0.0430	<0.001	0.0150	<0.001
	05/06/04	0.0873	<0.001	<0.001	0.0024
	08/18/04	0.0903	<0.001	0.0098	<0.001
	11/02/04	0.2330	<0.001	0.0035	0.0038
	03/22/05	0.1800	<0.001	0.0024	<0.001
	05/17/05	0.0758	<0.001	0.0028	<0.001
	08/15/05	0.0067	<0.001	0.0012	<0.001
	11/18/05	0.0013	<0.001	0.0012	<0.001
	02/16/06	<0.001	<0.001	<0.001	<0.001
	05/22/06	<0.001	<0.001	<0.001	<0.001
	08/07/06	0.0013	<0.001	<0.001	<0.001
	11/21/06	0.0021	<0.001	<0.001	<0.001
	02/28/07	<0.001	0.0022	0.0049	0.1120
	05/11/07	0.0007	0.0004	0.0029	0.0063
	08/10/07	<0.005	<0.005	<0.005	0.0079
	11/15/07	0.0013	<0.002	<0.001	0.0070
	02/29/08	<0.001	<0.002	<0.001	0.0028
	05/28/08	<0.001	<0.002	<0.001	0.0018
	08/21/08	<0.001	<0.002	<0.001	<0.001
	11/08/08	<0.001	<0.002	<0.001	<0.001
	02/10/09	<0.001	<0.002	<0.001	<0.001
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-13	05/14/09	<0.001	<0.002	<0.001	<0.001
	08/12/09	<0.001	<0.002	<0.001	<0.001
	11/11/09	<0.001	<0.002	<0.001	<0.001
	02/05/10	<0.001	<0.002	<0.001	<0.001
	05/27/10	<0.001	<0.002	<0.001	<0.001
	08/16/10	0.0014	<0.002	<0.001	0.0020
	11/11/10	<0.001	<0.002	<0.001	<0.001
	02/17/11	<0.001	<0.002	<0.001	<0.001
	05/25/11	<0.001	<0.002	<0.001	0.0037
	08/18/11	<0.001	<0.002	0.0014	<0.001
	11/17/12	0.0012	<0.002	<0.001	<0.001
	02/29/12	<0.001	<0.002	<0.001	<0.001
	05/18/12	<0.001	<0.001	<0.001	<0.001
	08/15/12	<0.001	<0.001	<0.001	<0.001
	11/06/12	<0.001	<0.001	<0.001	<0.001
	02/22/13	<0.001	<0.001	<0.001	<0.001
	05/24/13	<0.0005	<0.001	<0.0007	<0.0007
	08/08/13	<0.0005	<0.001	<0.0007	<0.0007
	11/13/13	<0.0005	<0.001	<0.0007	<0.007
	02/20/14	<0.0005	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	<0.0008	<0.0012	<0.0008	<0.0007
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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Groundwater Analytical Summary - BTEX¹

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Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-14	11/06/02	<0.001	<0.001	<0.001	<0.001
	02/27/03	<0.001	<0.001	<0.001	<0.001
	05/12/03	<0.001	<0.001	<0.001	<0.001
	08/20/03	<0.001	<0.001	<0.001	<0.001
	11/10/03	<0.001	<0.001	<0.001	<0.001
	02/17/04	<0.001	<0.001	<0.001	<0.001
	05/06/04	<0.001	<0.001	<0.001	<0.001
	08/18/04	<0.001	<0.001	<0.001	0.0080
	11/02/04	0.0106	<0.001	<0.001	0.0054
	03/22/05	<0.001	<0.001	<0.001	<0.001
	05/17/05	0.0091	<0.001	<0.001	<0.001
	08/15/05	<0.001	<0.001	<0.001	<0.001
	11/18/05	0.0049	<0.001	<0.001	<0.001
	02/16/06	<0.001	<0.001	<0.001	<0.001
	05/22/06	<0.001	<0.001	<0.001	<0.001
	08/07/06	<0.001	<0.001	<0.001	<0.001
	11/21/06	<0.001	<0.001	<0.001	<0.001
	02/28/07	<0.001	<0.001	<0.001	<0.001
	05/11/07	0.0008	<0.001	<0.001	<0.001
	08/10/07	<0.001	<0.001	<0.001	<0.001
	11/15/07	0.0012	<0.002	<0.001	<0.001
	02/29/08	<0.001	<0.002	<0.001	<0.001
	05/28/08	<0.001	<0.002	<0.001	<0.001
	08/21/08	<0.001	<0.002	<0.001	<0.001
	11/08/08	<0.001	0.0023	0.0010	0.0012
	02/10/09	<0.001	<0.002	<0.001	<0.001
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
 Lea County, New Mexico
 Plains Pipeline, L. P. SRS Number 2001-1005
 NMOCD File Number: 1R-0398
 Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-14	05/14/09	<0.001	<0.002	<0.001	<0.001
	08/12/09	<0.001	<0.002	<0.001	<0.001
	11/11/09	<0.001	<0.002	<0.001	<0.001
	02/05/10	<0.001	<0.002	<0.001	<0.001
	05/27/10	<0.001	<0.002	<0.001	<0.001
	08/16/10	<0.001	<0.002	<0.001	<0.001
	11/11/10	<0.001	<0.002	<0.001	<0.001
	02/17/11	<0.001	<0.002	<0.001	<0.001
	05/25/11	<0.001	<0.002	<0.001	<0.001
	08/18/11	<0.001	<0.002	<0.001	<0.001
	11/17/11	<0.001	<0.002	<0.001	<0.001
	02/29/12	<0.001	<0.002	<0.001	0.0012
	05/18/12	<0.001	<0.001	<0.001	<0.001
	08/15/12	<0.001	<0.001	<0.001	<0.001
	11/06/12	<0.001	<0.001	<0.001	<0.001
	02/22/13	<0.001	<0.001	<0.001	<0.001
	05/24/13	Not Sampled Due to the Presence of PSH			
	08/08/13	<0.0005	<0.001	<0.0007	<0.0007
	11/13/13	0.0220	<0.001	0.0093	0.0037
	02/20/14	<0.0005	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	<0.0008	<0.0012	<0.0008	<0.0007
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-15	11/06/02	<0.001	<0.001	<0.001	<0.001
	02/27/03	<0.001	<0.001	<0.001	<0.001
	05/12/03	<0.001	<0.001	<0.001	<0.001
	08/20/03	<0.001	<0.001	<0.001	<0.001
	11/10/03	<0.001	<0.001	<0.001	<0.001
	02/17/04	<0.001	<0.001	<0.001	<0.001
	05/06/04	<0.001	<0.001	<0.001	<0.001
	08/24/04	<0.001	<0.001	<0.001	<0.001
	03/22/05	Not Sampled Due to the Presence of PSH			
	05/17/05	Not Sampled Due to the Presence of PSH			
	08/15/05	0.1370	<0.001	<0.001	0.0102
	11/18/05	Not Sampled Due to the Presence of PSH			
	02/16/06	0.0693	<0.001	<0.001	<0.001
	05/22/06	0.0183	<0.001	<0.001	<0.001
	08/07/06	0.0096	<0.001	<0.001	<0.001
	11/21/06	0.0055	<0.001	<0.001	<0.001
	02/28/07	<0.001	<0.001	<0.001	<0.001
	05/11/07	0.0005	<0.001	<0.001	<0.001
	08/10/07	<0.001	<0.001	<0.001	<0.001
	11/15/07	<0.001	<0.002	<0.001	<0.001
	02/29/08	<0.001	<0.002	<0.001	<0.001
	05/28/08	<0.001	<0.002	<0.001	<0.001
	08/21/08	0.0041	<0.002	<0.001	<0.001
	11/08/08	<0.001	<0.002	<0.001	<0.001
	02/10/09	<0.001	<0.002	<0.001	<0.001
	05/14/09	<0.001	<0.002	<0.001	<0.001
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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2014 Annual Report

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 Lea County, New Mexico
 Plains Pipeline, L. P. SRS Number 2001-1005
 NMOCD File Number: 1R-0398
 Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW-15	08/12/09	<0.001	<0.002	<0.001	<0.001
	11/11/09	<0.001	<0.002	<0.001	<0.001
	02/05/10	<0.001	<0.002	<0.001	<0.001
	05/27/10	<0.001	<0.002	<0.001	<0.001
	08/16/10	<0.001	<0.002	<0.001	<0.001
	11/11/10	<0.001	<0.002	<0.001	<0.001
	02/17/11	<0.001	<0.002	<0.001	<0.001
	05/25/11	<0.001	<0.002	<0.001	<0.001
	08/18/11	<0.001	<0.002	<0.001	<0.001
	11/17/11	<0.001	<0.002	<0.001	<0.001
	02/29/12	<0.001	<0.002	<0.001	<0.001
	05/18/12	<0.001	<0.001	<0.001	<0.001
	08/15/12	<0.001	<0.001	<0.001	<0.001
	11/06/12	<0.001	<0.001	<0.001	<0.001
	02/22/13	<0.001	<0.001	<0.001	<0.001
	05/24/13	Not Sampled Due to the Presence of PSH			
	08/08/13	<0.0005	<0.001	<0.0007	<0.0007
	11/13/13	0.0132	<0.001	0.0074	0.0275
	02/20/14	<0.0005	<0.001	<0.0007	<0.0007
	04/16/14	<0.0008	<0.0012	<0.0008	<0.0007
	07/08/14	<0.0008	<0.0012	<0.0008	<0.0007
	10/04/14	<0.0008	<0.0012	<0.0008	<0.0007
NMWQCC ⁴ Groundwater Standards		0.01	0.75	0.75	0.62

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Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
TMW-1	11/02/04	4.9500	2.7800	1.7200	0.7830
	11/18/05	1.8600	<0.002	1.0600	0.4350
	02/16/06	1.6900	<0.002	1.0300	0.6040
	05/22/06	Not Sampled Due to the Presence of PSH			
	08/07/06	Not Sampled Due to the Presence of PSH			
	11/21/06	Not Sampled Due to the Presence of PSH			
	02/28/07	1.6600	<0.05	0.7770	1.6000
	05/11/07	0.8430	0.3340	1.0300	0.4390
	08/10/07	Not Sampled Due to the Presence of PSH			
	11/15/07	Not Sampled Due to the Presence of PSH			
	02/29/08	3.0040	<0.04	1.0460	0.0402
	05/28/08	Not Sampled Due to the Presence of PSH			
	08/21/08	Not Sampled Due to the Presence of PSH			
	11/08/08	Not Sampled Due to the Presence of PSH			
	02/25/09	2.0440	<2.0	<1.0	<1.0
	05/14/09	Not Sampled Due to the Presence of PSH			
	08/12/09	Not Sampled Due to the Presence of PSH			
	11/11/09	Not Sampled Due to the Presence of PSH			
	02/05/10	Not Sampled Due to the Presence of PSH			
	05/27/10	Not Sampled Due to the Presence of PSH			
	08/16/10	Not Sampled Due to the Presence of PSH			
	11/11/10	Not Sampled Due to the Presence of PSH			
	02/29/12	Not Sampled Due to the Presence of PSH			
	05/18/12	Not Sampled Due to the Presence of PSH			
	08/15/12	Not Sampled Due to the Presence of PSH			
	11/06/12	Not Sampled Due to the Presence of PSH			
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

2. NA = Not Analyzed

3. PSH = Phase Separated Hydrocarbons

4. NMWQCC = New Mexico Water Quality Control Commission

Bold text indicates a concentration exceeding the NMWQCC Delineation and Remediation Limits

2014 Annual Report

Groundwater Analytical Summary - BTEX¹

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L. P. SRS Number 2001-1005
NMOCD File Number: 1R-0398
Terracon Project Number A4147008

All concentrations are in milligrams per liter (mg/L)

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8021B			
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
TMW-1	02/21/13	Not Sampled Due to the Presence of PSH			
	05/24/13	Not Sampled Due to the Presence of PSH			
	08/08/13	Not Sampled Due to the Presence of PSH			
	11/13/13	Not Sampled Due to the Presence of PSH			
	02/20/14	Not Sampled Due to the Presence of PSH			
	04/16/14	Not Sampled Due to the Presence of PSH			
	07/08/14	Not Sampled Due to the Presence of PSH			
	10/04/14	Not Sampled Due to the Presence of PSH			
NMWQCC⁴ Groundwater Standards		0.01	0.75	0.75	0.62

1. BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

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Bold text indicates a concentration exceeding the NMWQCC Delineation and Remediation Limits

2014 Annual Report

Table 3

CONCENTRATIONS OF PAHs¹ IN GROUNDWATER

Livingston Ridge to Hugh - P. Sims

Lea County, New Mexico

NMOCD File Number: 1R-0398

Plains Pipeline, L. P. SRS Number 2001-11005

Terracon Project Number A4147008

All concentrations are in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C and 3510																			
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno (1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	2-Methylnaphthalene	Benzo(k)fluoranthene	1-Methylnaphtalene
MW-1	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.00229	<0.00005	0.0000136	0.00399	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA ²	<0.001	<0.001	NA	<0.001	0.001	<0.001	0.017	0.012	<0.001	0.028	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008
	11/07/12	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NA	<0.002	<0.002	<0.002	0.0438	0.0180	<0.002	0.0792	<0.002	0.0842
	09/19/13	0.000128	0.000162	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	0.000736	<0.0000500	0.00592	0.000649	<0.0000500	<0.0000500	<0.0000500	<0.0000500
	10/04/14	<0.00000495	<0.00000407	<0.00000236	<0.00000527	<0.0000066	<0.00000998	<0.00000796	<0.00000583	<0.00000427	<0.00000580	0.000332	<0.00000633	<0.00000633	<0.00000750	<0.0000149	0.000148	<0.00000691	NA	NA	NA
MW-2	06/18/03	0.000118	<0.00005	0.000061	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	0.000056	0.000078	<0.00005	<0.00005	<0.00005	0.000121	NA	NA	NA
	03/22/05	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/07/12	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NA	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	09/19/13	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	NA	<0.0000513	0.000115	<0.0000513	0.00056	0.000174	<0.0000513	<0.0000513	<0.0000513	<0.0000513
	10/04/14	Not Sampled Due to Sample Reduction																			
MW-3	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/13	Dry - Not Sampled																			
	10/04/14	Not Sampled Due to Sample Reduction																			
MW-4	06/18/03	0.000156	0.000144	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000498	<0.00005	0.000167	0.000891	<0.00005	NA	NA	NA
	11/02/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.0002	<0.00005	0.0025	0.000227	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000068	<0.00005	NA	<0.00005	0.000251	<0.00005	0.00492	0.000312	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	0.001	<0.001	0.034	0.006	<0.001	0.042	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/13	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	NA	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513
	10/04/14	<0.00000495	<0.00000407	<0.00000236	<0.00000527	<0.0000066	<0.00000998	<0.00000796	<0.00000583	<0.00000427	<0.00000580	0.000114	<0.00000633	<0.00000633	<0.00000750	<0.0000149	0.0000614	<0.00000691	NA	NA	NA
NMWQCC ³ Standards		NE ⁴	NE	NE	NE	0.0007	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.03	NE	NE	NE	NE	NE

1. PAHs - Polycyclic Aromatic Hydrocarbons

2. Costituent Not Analyzed

3. NMWQCC - New Mexico Water Quality Control Commission

4. NE - Stardards for these constituents has not been established by the NMWQCC

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Table 3
CONCENTRATIONS OF PAHs¹ IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number: 1R-0398
Plains Pipeline, L. P. SRS Number 2001-11005
Terracon Project Number A4147008

All concentrations are in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C and 3510																			
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno (1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	2-Methylnaphthalene	Benzo(k)fluoranthene	1-Methylnaphtalene
MW-5	06/18/03	0.000732	0.000856	0.00507	0.000459	0.000249	0.000129	<0.00005	0.00007	0.000328	<0.00005	NA	0.000087	0.00268	<0.00005	0.0403	<0.00005	0.000284	NA	NA	NA
	08/24/04	0.000092	0.00007	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00006	0.000114	<0.00005	NA	<0.00005	0.000419	<0.00005	0.00768	0.000898	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000115	<0.00005	NA	<0.00005	0.000306	<0.00005	0.00136	0.000427	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	0.606	<0.001	0.019	<0.001	<0.001	0.022	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	0.031	<0.005	<0.005	0.024	<0.005	0.028
	12/30/11	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/07/12	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NA	<0.002	<0.002	<0.002	0.0448	0.0161	<0.002	0.0596	<0.002	0.0615
	09/19/13	0.00028	0.000397	<0.000256	0.000377	<0.000256	<0.000256	<0.000256	<0.000256	<0.000256	<0.000256	NA	<0.000256	0.00213	<0.000256	0.0405	0.00374	<0.000256	<0.000256	<0.000256	<0.000256
10/04/14	<0.000005	<0.00000411	<0.00000238	<0.00000533	<0.00000667	<0.0000101	<0.0000804	<0.00000588	<0.00000431	<0.00000586	0.00071	<0.00000639	0.000301	<0.00000757	0.00741	0.00019	<0.00000698	NA	NA	NA	
MW-6	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	11/02/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000126	<0.00005	<0.00005	0.000063	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/13	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	NA	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508
	10/04/14	Not Sampled Due to Sample Reduction																			
MW-7	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/13	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500
	10/04/14	Not Sampled Due to Sample Reduction																			
MW-8	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/13	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	10/04/14	Not Sampled Due to Sample Reduction																			
NMWQCC ³ Standards		NE ⁴	NE	NE	NE	0.0007	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.03	NE	NE	NE	NE	NE

1. PAHs - Polycyclic Aromatic Hydrocarbons
2. Costituent Not Analyzed
3. NMWQCC - New Mexico Water Quality Control Commission
4. NE - Stardards for these constituents has not been established by the NMWQCC

2014 Annual Report
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All concentrations are in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C and 3510																			
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno (1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	2-Methylnaphthalene	Benzo(k)fluoranthene	1-Methylnaphtalene
MW-9	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	03/22/05	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000084	<0.00005	0.000544	0.000058	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/13	0.000052	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	NA	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513
	10/04/14	Not Sampled Due to Sample Reduction																			
MW-10	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/19	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	NA	<0.0000508	<0.0000508	<0.0000508	<0.0000508	0.0000852	<0.0000508	<0.0000508	<0.0000508	<0.0000508
	10/04/14	Not Sampled Due to Sample Reduction																			
MW-11	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	08/18/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000075	<0.00005	0.0014	0.000154	<0.00005	NA	NA	NA
	03/22/05	0.000068	0.000055	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.00008	<0.00005	0.00167	0.000296	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/13	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500
	10/04/14	Not Sampled Due to Sample Reduction																			
MW-12	11/06/02	0.00007	0.000151	0.000096	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000662	<0.00005	0.000198	0.000722	0.000071	NA	NA	NA
	08/18/04	0.000079	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000078	<0.00005	0.000262	0.000246	<0.00005	NA	NA	NA
	03/22/05	0.0011	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000166	<0.00005	0.000107	0.000285	<0.00005	NA	NA	NA
	02/16/06	0.000055	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000053	<0.00005	<0.00005	0.000174	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/13	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500
	10/04/14	Not Sampled Due to Sample Reduction																			
NMWQCC ³ Standards		NE ⁴	NE	NE	NE	0.0007	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.03	NE	NE	NE	NE	NE

1. PAHs - Polycyclic Aromatic Hydrocarbons
2. Costituent Not Analyzed
3. NMWQCC - New Mexico Water Quality Control Commission
4. NE - Standards for these constituents has not been established by the NMWQCC

2014 Annual Report

Table 3

CONCENTRATIONS OF PAHs¹ IN GROUNDWATER

Livingston Ridge to Hugh - P. Sims

Lea County, New Mexico

NMOCD File Number: 1R-0398

Plains Pipeline, L. P. SRS Number 2001-11005

Terracon Project Number A4147008

All concentrations are in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C and 3510																			
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno (1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	2-Methylnaphthalene	Benzo(k)fluoranthene	1-Methylnaphtalene
MW-13	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	0.000232	<0.00005	<0.00005	NA	NA	NA
	08/18/04	0.000139	0.000086	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000141	<0.00005	0.00234	0.000702	<0.00005	NA	NA	NA
	03/22/05	0.000105	0.000072	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000366	<0.00005	0.000746	0.000426	<0.00005	NA	NA	NA
	02/16/06	0.000079	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000079	<0.00005	0.000064	0.000132	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/13	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	NA	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508
10/04/14	Not Sampled Due to Sample Reduction																				
MW-14	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	08/18/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	0.00119	0.000079	<0.00005	NA	NA	NA
	03/22/05	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	0.000071	<0.00005	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/13	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500
10/04/14	Not Sampled Due to Sample Reduction																				
MW-15	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	08/24/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	0.0033	<0.00005	<0.00005	NA	NA	NA
	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	09/19/13	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500
10/04/14	Not Sampled Due to Sample Reduction																				
TMW-1	02/16/06	0.00146	0.00147	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00221	<0.00005	NA	<0.00005	0.00818	<0.00005	0.0886	0.0149	0.000788	NA	NA	NA
	05/11/07	<0.002	<0.002	<0.004	<0.002	<0.003	<0.002	<0.006	NA	<0.002	<0.001	NA	<0.002	0.008	<0.003	0.062	<0.002	<0.002	0.197	<0.002	NA
	02/29/08	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NA	<0.025	<0.025	NA	<0.025	<0.025	<0.025	0.069	<0.025	<0.025	0.04	<0.025	0.042
	09/19/13	Not Sampled Due to PSH																			
	10/04/14	Not Sampled Due to PSH																			
NMWQCC ³ Standards		NE ⁴	NE	NE	NE	0.0007	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.03	NE	NE	NE	NE	NE

1. PAHs - Polycyclic Aromatic Hydrocarbons

2. Costituent Not Analyzed

3. NMWQCC - New Mexico Water Quality Control Commission

4. NE - Stardards for these constituents has not been established by the NMWQCC

APPENDIX C

Laboratory Data Sheets

Analytical Report 479775

for

PLAINS ALL AMERICAN EH&S

Project Manager: Dale Moxley

Livingston Ridge

A414 7008

26-FEB-14

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)

New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)

Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



26-FEB-14

Project Manager: **Dale Moxley**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **479775**
Livingston Ridge
Project Address: Midland TX

Dale Moxley:

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) 479775. 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. 479775 will be filed for 60 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,

Kelsey Brooks
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	02-20-14 15:45		479775-001
MW-2	W	02-20-14 09:07		479775-002
MW-4	W	02-20-14 15:08		479775-003
MW-5	W	02-20-14 16:26		479775-004
MW-6	W	02-20-14 07:52		479775-005
MW-7	W	02-20-14 09:42		479775-006
MW-8	W	02-20-14 14:34		479775-007
MW-9	W	02-20-14 08:28		479775-008
MW-10	W	02-20-14 10:22		479775-009
MW-11	W	02-20-14 12:39		479775-010
MW-12	W	02-20-14 13:17		479775-011
MW-13	W	02-20-14 13:53		479775-012
MW-14	W	02-20-14 11:23		479775-013
MW-15	W	02-20-14 12:04		479775-014



CASE NARRATIVE



Client Name: *PLAINS ALL AMERICAN EH&S*

Project Name: *Livingston Ridge*

Project ID: A414 7008
Work Order Number(s): 479775

Report Date: 26-FEB-14
Date Received: 02/21/2014

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results

479775



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id: **MW-1** Matrix: Water Sample Depth:
Lab Sample Id: 479775-001 Date Collected: 02.20.14 15.45 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0217	0.00100	0.000500	mg/L	02.25.14 10:57		1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 10:57	U	1
Ethylbenzene	100-41-4	0.00548	0.00100	0.000700	mg/L	02.25.14 10:57		1
m,p-Xylenes	179601-23-1	0.00355	0.00200	0.00140	mg/L	02.25.14 10:57		1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 10:57	U	1
Total Xylenes	1330-20-7	0.00355		0.000700	mg/L	02.25.14 10:57		
Total BTEX		0.0307		0.000500	mg/L	02.25.14 10:57		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	88	80 - 120	%		
4-Bromofluorobenzene	98	80 - 120	%		

Sample Id: **MW-2** Matrix: Water Sample Depth:
Lab Sample Id: 479775-002 Date Collected: 02.20.14 09.07 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.25.14 10:25	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 10:25	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 10:25	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 10:25	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 10:25	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 10:25	U	
Total BTEX		ND		0.000500	mg/L	02.25.14 10:25	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	80 - 120	%		
4-Bromofluorobenzene	95	80 - 120	%		



Certificate of Analytical Results

479775



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id: **MW-4** Matrix: Water Sample Depth:
Lab Sample Id: 479775-003 Date Collected: 02.20.14 15.08 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00122	0.00100	0.000500	mg/L	02.25.14 09:53		1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 09:53	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 09:53	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 09:53	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 09:53	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 09:53	U	
Total BTEX		0.00122		0.000500	mg/L	02.25.14 09:53		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	92	80 - 120	%		
4-Bromofluorobenzene	94	80 - 120	%		

Sample Id: **MW-5** Matrix: Water Sample Depth:
Lab Sample Id: 479775-004 Date Collected: 02.20.14 16.26 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0308	0.00100	0.000500	mg/L	02.25.14 10:09		1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 10:09	U	1
Ethylbenzene	100-41-4	0.0707	0.00100	0.000700	mg/L	02.25.14 10:09		1
m,p-Xylenes	179601-23-1	0.00659	0.00200	0.00140	mg/L	02.25.14 10:09		1
o-Xylene	95-47-6	0.00215	0.00100	0.000700	mg/L	02.25.14 10:09		1
Total Xylenes	1330-20-7	0.00874		0.000700	mg/L	02.25.14 10:09		
Total BTEX		0.110		0.000500	mg/L	02.25.14 10:09		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	87	80 - 120	%		
4-Bromofluorobenzene	99	80 - 120	%		



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Sample Id: **MW-6** Matrix: Water Sample Depth:
Lab Sample Id: 479775-005 Date Collected: 02.20.14 07.52 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.25.14 10:41	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 10:41	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 10:41	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 10:41	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 10:41	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 10:41	U	
Total BTEX		ND		0.000500	mg/L	02.25.14 10:41	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		

Sample Id: **MW-7** Matrix: Water Sample Depth:
Lab Sample Id: 479775-006 Date Collected: 02.20.14 09.42 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.25.14 08:33	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 08:33	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 08:33	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 08:33	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 08:33	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 08:33	U	
Total BTEX		ND		0.000500	mg/L	02.25.14 08:33	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		



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Sample Id: **MW-8** Matrix: Water Sample Depth:
Lab Sample Id: 479775-007 Date Collected: 02.20.14 14.34 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.25.14 08:50	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 08:50	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 08:50	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 08:50	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 08:50	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 08:50	U	
Total BTEX		ND		0.000500	mg/L	02.25.14 08:50	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	80 - 120	%		
4-Bromofluorobenzene	93	80 - 120	%		

Sample Id: **MW-9** Matrix: Water Sample Depth:
Lab Sample Id: 479775-008 Date Collected: 02.20.14 08.28 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.25.14 09:05	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 09:05	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 09:05	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 09:05	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 09:05	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 09:05	U	
Total BTEX		ND		0.000500	mg/L	02.25.14 09:05	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	80 - 120	%		
4-Bromofluorobenzene	95	80 - 120	%		



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Livingston Ridge

Sample Id: **MW-10** Matrix: Water Sample Depth:
Lab Sample Id: 479775-009 Date Collected: 02.20.14 10.22 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.25.14 09:21	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 09:21	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 09:21	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 09:21	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 09:21	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 09:21	U	
Total BTEX		ND		0.000500	mg/L	02.25.14 09:21	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	80 - 120	%		
4-Bromofluorobenzene	93	80 - 120	%		

Sample Id: **MW-11** Matrix: Water Sample Depth:
Lab Sample Id: 479775-010 Date Collected: 02.20.14 12.39 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.25.14 09:37	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 09:37	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 09:37	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 09:37	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 09:37	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 09:37	U	
Total BTEX		ND		0.000500	mg/L	02.25.14 09:37	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	80 - 120	%		
4-Bromofluorobenzene	93	80 - 120	%		



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Sample Id: **MW-12** Matrix: Water Sample Depth:
Lab Sample Id: 479775-011 Date Collected: 02.20.14 13.17 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.25.14 11:45	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 11:45	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 11:45	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 11:45	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 11:45	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 11:45	U	
Total BTEX		ND		0.000500	mg/L	02.25.14 11:45	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		

Sample Id: **MW-13** Matrix: Water Sample Depth:
Lab Sample Id: 479775-012 Date Collected: 02.20.14 13.53 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.25.14 12:18	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 12:18	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 12:18	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 12:18	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 12:18	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 12:18	U	
Total BTEX		ND		0.000500	mg/L	02.25.14 12:18	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	92	80 - 120	%		
4-Bromofluorobenzene	104	80 - 120	%		



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Sample Id: **MW-14** Matrix: Water Sample Depth:
Lab Sample Id: 479775-013 Date Collected: 02.20.14 11.23 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.25.14 12:34	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 12:34	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 12:34	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 12:34	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 12:34	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 12:34	U	
Total BTEX		ND		0.000500	mg/L	02.25.14 12:34	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		

Sample Id: **MW-15** Matrix: Water Sample Depth:
Lab Sample Id: 479775-014 Date Collected: 02.20.14 12.04 Date Received: 02.21.14 12.10
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 934873 Date Prep: 02.24.14 11.00
Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.25.14 12:01	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.25.14 12:01	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.25.14 12:01	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.25.14 12:01	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.25.14 12:01	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	02.25.14 12:01	U	
Total BTEX		ND		0.000500	mg/L	02.25.14 12:01	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	80 - 120	%		
4-Bromofluorobenzene	92	80 - 120	%		



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Sample Id: 651605-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 651605-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 934873

Date Prep: 02.24.14 11.00

Prep seq: 651605

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000500	mg/L	02.24.14 21:03	U	1
Toluene	108-88-3	ND	0.00200	0.00100	mg/L	02.24.14 21:03	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000700	mg/L	02.24.14 21:03	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00140	mg/L	02.24.14 21:03	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	02.24.14 21:03	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	80 - 120	%		
4-Bromofluorobenzene	94	80 - 120	%		

- 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 **SQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

Phone	Fax
(281) 240-4200	(281) 240-4280
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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 479775,

Project ID: A414 7008

Lab Batch #: 934873

Sample: 651605-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 02/24/14 21:03		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0296	0.0300	99	80-120
4-Bromofluorobenzene		0.0281	0.0300	94	80-120

Lab Batch #: 934873

Sample: 651605-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 02/24/14 21:19		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0324	0.0300	108	80-120
4-Bromofluorobenzene		0.0326	0.0300	109	80-120

Lab Batch #: 934873

Sample: 651605-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 02/24/14 21:35		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0324	0.0300	108	80-120
4-Bromofluorobenzene		0.0320	0.0300	107	80-120

Lab Batch #: 934873

Sample: 479775-011 S / MS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 02/24/14 21:51		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0316	0.0300	105	80-120
4-Bromofluorobenzene		0.0312	0.0300	104	80-120

Lab Batch #: 934873

Sample: 479775-011 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 02/25/14 07:33		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0337	0.0300	112	80-120
4-Bromofluorobenzene		0.0337	0.0300	112	80-120

* 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: Livingston Ridge

Work Order #: 479775

Project ID: A414 7008

Analyst: ARM

Date Prepared: 02/24/2014

Date Analyzed: 02/24/2014

Lab Batch ID: 934873

Sample: 651605-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	<0.00100	0.100	0.112	112	0.100	0.115	115	3	70-125	25	
Toluene	<0.00200	0.100	0.113	113	0.100	0.116	116	3	70-125	25	
Ethylbenzene	<0.00100	0.100	0.111	111	0.100	0.115	115	4	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.220	110	0.200	0.226	113	3	70-131	25	
o-Xylene	<0.00100	0.100	0.113	113	0.100	0.117	117	3	71-133	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: Livingston Ridge

Work Order # : 479775

Project ID: A414 7008

Lab Batch ID: 934873

QC- Sample ID: 479775-011 S

Batch #: 1 Matrix: Water

Date Analyzed: 02/24/2014

Date Prepared: 02/24/2014

Analyst: ARM

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	<0.00100	0.100	0.109	109	0.100	0.0964	96	12	70-125	25	
Toluene	<0.00200	0.100	0.110	110	0.100	0.0943	94	15	70-125	25	
Ethylbenzene	<0.00100	0.100	0.109	109	0.100	0.0933	93	16	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.218	109	0.200	0.186	93	16	70-131	25	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.0962	96	15	71-133	25	

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

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

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.

Terracon

Consulting Engineers & Scientists

Office Location MIDLAND, TX

Laboratory: XENCO LABS

Address: 1400 W. FIVE

OPLESSA, TX 79765

Contact: ALEX MOXTLEY

Phone: 432.563.1800

Project Manager: J. DALE MOXTLEY

PO/ISO #:

Sampler's Name

Sampler's Signature

KIMBLE THRAST

Proj. No.

Project Name

SPRINT-11005

No/Type of Containers

A443608

LIVINGSTON RIDGE

VOAS

Matrix

Date

Time

Identifying Marks of Sample(s)

Start Depth

End Depth

VOA

AG

250 ml

P/O

1

2

3

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Terracon

Consulting Engineers & Scientists

Office Location MIDLAND, TXLaboratory: XENCO LABSAddress: 1400 W I-20 EDEXSA, TX 79765Contact: ALEX MONTOYAPhone: 432 563 1800

PO/ISO #:

Project Manager: J. DALE MOXLEY

Sampler's Signature

KIMBLE THRASH

Proj. No. A4147008 Project Name SPS # 1001-11005 No/Type of Containers VOASIdentifying Marks of Sample(s) LV1165703 21156E

Matrix	Date	Time	C o m p	G r a b	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AG 1L	250 ml	P/O
W	2/26/14	1317			✓			✓			
		1353			✓			✓			
		1123			✓			✓			
		1204			✓			✓			

Lab Sample ID (Lab Use Only)

479775

ANALYSIS
REQUESTEDLab use only
Due Date: 1ETemp. of coolers
when received (C°): 1°CPage 2 of 2

Turn around time	☒ Normal	☐ 25% Rush	☐ 50% Rush	☐ 100% Rush
Relinquished by (Signature)	Date: <u>2/27/14</u> Time: <u>3:15 PM</u>	Received by: (Signature)	Date: <u>2-27-14</u> Time: <u>12:10</u>	NOTES: E-MAIL RESULTS TO: CARLLE BRYANT OF PLAINS AMERICAN PIPELINE & J. DALE MOXLEY OF TERRACON
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: _____	

Matrix	WW - Wastewater Container	W - Water VOA - 40 ml vial	S - Soil A/G - Amber / Or Glass 1 Liter	SD - Solid 250 ml - Liquid	L - Liquid A - Air Bag	C - Charcoal tube P/O - Plastic or other	SL - sludge O - Oil
Houston Office	11555 Clay Road, Suite 100 Houston, Texas 77043 (713) 690-8989 Fax (713) 690-8787	Dallas Office	8901 Carpenter Freeway, Suite 100 Dallas, Texas 75247 (214) 630-1010 Fax (214) 630-7070	Fort Worth Office	2601 Gravel Drive Fort Worth, Texas 76118 (817) 268-8600 Fax (817) 268-8602	Austin Office	5307 Industrial Oaks Blvd. # 160 Austin, Texas 78735 (512) 442-1122 Fax (512) 442-1181
Midland Office	24 Smith Rd., # 261 Midland, Texas 79705 (432) 684-9600 Fax (432) 684-9608						



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 02/21/2014 12:10:00 PM

Work Order #: 479775

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	Yes

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

Analyst:	PH Device/Lot#:
----------	-----------------

Checklist completed by:

Ruriko Konuma

Date: 02/21/2014

Checklist reviewed by:

Kelsey Brooks

Date: 02/21/2014

Analytical Report 483579

for

PLAINS ALL AMERICAN EH&S

Project Manager: Dale Moxley

Livingston Ridge-HP Sims

A414 7008

24-APR-14

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)

New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)

Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



24-APR-14

Project Manager: **Dale Moxley**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **483579**
Livingston Ridge-HP Sims
Project Address: Midland TX

Dale Moxley:

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) 483579. 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. 483579 will be filed for 60 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,

Kelsey Brooks
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	04-16-14 08:17		483579-001
MW-9	W	04-16-14 09:16		483579-002
MW-6	W	04-16-14 09:54		483579-003
MW-14	W	04-16-14 10:36		483579-004
MW-15	W	04-16-14 11:17		483579-005
MW-11	W	04-16-14 11:54		483579-006
MW-12	W	04-16-14 12:28		483579-007
MW-13	W	04-16-14 12:58		483579-008
MW-10	W	04-16-14 13:34		483579-009
MW-7	W	04-16-14 14:07		483579-010
MW-8	W	04-16-14 14:38		483579-011
MW-4	W	04-16-14 15:09		483579-012
MW-5	W	04-16-14 15:46		483579-013
MW-1	W	04-16-14 16:21		483579-014



CASE NARRATIVE



Client Name: *PLAINS ALL AMERICAN EH&S*

Project Name: *Livingston Ridge-HP Sims*

Project ID: A414 7008
Work Order Number(s): 483579

Report Date: 24-APR-14
Date Received: 04/17/2014

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results

483579



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id: **MW-2** Matrix: Water Sample Depth:
Lab Sample Id: 483579-001 Date Collected: 04.16.14 08.17 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939232 Date Prep: 04.22.14 16.00
Prep seq: 654383

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 00:47	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 00:47	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 00:47	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 00:47	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 00:47	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 00:47	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 00:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	86	80 - 120	%		
4-Bromofluorobenzene	94	80 - 120	%		

Sample Id: **MW-9** Matrix: Water Sample Depth:
Lab Sample Id: 483579-002 Date Collected: 04.16.14 09.16 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939232 Date Prep: 04.22.14 16.00
Prep seq: 654383

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 01:03	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 01:03	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 01:03	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 01:03	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 01:03	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 01:03	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 01:03	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	87	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		



Certificate of Analytical Results

483579



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id: **MW-6** Matrix: Water Sample Depth:
Lab Sample Id: 483579-003 Date Collected: 04.16.14 09.54 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939232 Date Prep: 04.22.14 16.00
Prep seq: 654383

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 01:19	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 01:19	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 01:19	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 01:19	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 01:19	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 01:19	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 01:19	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	86	80 - 120	%		
4-Bromofluorobenzene	93	80 - 120	%		

Sample Id: **MW-14** Matrix: Water Sample Depth:
Lab Sample Id: 483579-004 Date Collected: 04.16.14 10.36 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939232 Date Prep: 04.22.14 16.00
Prep seq: 654383

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 01:35	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 01:35	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 01:35	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 01:35	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 01:35	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 01:35	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 01:35	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	87	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		



Certificate of Analytical Results

483579



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id: **MW-15** Matrix: Water Sample Depth:
Lab Sample Id: 483579-005 Date Collected: 04.16.14 11.17 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939232 Date Prep: 04.22.14 16.00
Prep seq: 654383

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 01:52	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 01:52	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 01:52	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 01:52	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 01:52	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 01:52	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 01:52	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	88	80 - 120	%		
4-Bromofluorobenzene	93	80 - 120	%		

Sample Id: **MW-11** Matrix: Water Sample Depth:
Lab Sample Id: 483579-006 Date Collected: 04.16.14 11.54 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939232 Date Prep: 04.22.14 16.00
Prep seq: 654383

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 02:08	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 02:08	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 02:08	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 02:08	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 02:08	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 02:08	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 02:08	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	86	80 - 120	%		
4-Bromofluorobenzene	95	80 - 120	%		



Certificate of Analytical Results

483579



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id: **MW-12** Matrix: Water Sample Depth:
Lab Sample Id: 483579-007 Date Collected: 04.16.14 12.28 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939232 Date Prep: 04.22.14 16.00
Prep seq: 654383

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 02:25	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 02:25	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 02:25	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 02:25	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 02:25	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 02:25	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 02:25	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	82	80 - 120	%		
4-Bromofluorobenzene	109	80 - 120	%		

Sample Id: **MW-13** Matrix: Water Sample Depth:
Lab Sample Id: 483579-008 Date Collected: 04.16.14 12.58 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939232 Date Prep: 04.22.14 16.00
Prep seq: 654383

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 02:40	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 02:40	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 02:40	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 02:40	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 02:40	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 02:40	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 02:40	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	82	80 - 120	%		
4-Bromofluorobenzene	99	80 - 120	%		



Certificate of Analytical Results

483579



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id: **MW-10** Matrix: Water Sample Depth:
Lab Sample Id: 483579-009 Date Collected: 04.16.14 13.34 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939232 Date Prep: 04.22.14 16.00
Prep seq: 654383

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 02:57	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 02:57	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 02:57	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 02:57	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 02:57	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 02:57	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 02:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	86	80 - 120	%		
4-Bromofluorobenzene	95	80 - 120	%		

Sample Id: **MW-7** Matrix: Water Sample Depth:
Lab Sample Id: 483579-010 Date Collected: 04.16.14 14.07 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939234 Date Prep: 04.22.14 16.00
Prep seq: 654386

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 05:58	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 05:58	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 05:58	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 05:58	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 05:58	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 05:58	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 05:58	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	88	80 - 120	%		
4-Bromofluorobenzene	95	80 - 120	%		



Certificate of Analytical Results

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PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id: **MW-8** Matrix: Water Sample Depth:
Lab Sample Id: 483579-011 Date Collected: 04.16.14 14.38 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939234 Date Prep: 04.22.14 16.00
Prep seq: 654386

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 06:15	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 06:15	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 06:15	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 06:15	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 06:15	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 06:15	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 06:15	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	88	80 - 120	%		
4-Bromofluorobenzene	95	80 - 120	%		

Sample Id: **MW-4** Matrix: Water Sample Depth:
Lab Sample Id: 483579-012 Date Collected: 04.16.14 15.09 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939234 Date Prep: 04.22.14 16.00
Prep seq: 654386

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 06:31	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 06:31	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 06:31	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 06:31	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 06:31	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 06:31	U	
Total BTEX		ND		0.000700	mg/L	04.23.14 06:31	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	85	80 - 120	%		
4-Bromofluorobenzene	97	80 - 120	%		



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Livingston Ridge-HP Sims

Sample Id: **MW-5** Matrix: Water Sample Depth:
Lab Sample Id: 483579-013 Date Collected: 04.16.14 15.46 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939234 Date Prep: 04.22.14 16.00
Prep seq: 654386

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0259	0.00100	0.000800	mg/L	04.23.14 06:48		1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 06:48	U	1
Ethylbenzene	100-41-4	0.0714	0.00100	0.000800	mg/L	04.23.14 06:48		1
m,p-Xylenes	179601-23-1	0.00617	0.00200	0.00120	mg/L	04.23.14 06:48		1
o-Xylene	95-47-6	0.00238	0.00100	0.000700	mg/L	04.23.14 06:48		1
Total Xylenes	1330-20-7	0.00855		0.000700	mg/L	04.23.14 06:48		
Total BTEX		0.106		0.000700	mg/L	04.23.14 06:48		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	81	80 - 120	%		
4-Bromofluorobenzene	109	80 - 120	%		

Sample Id: **MW-1** Matrix: Water Sample Depth:
Lab Sample Id: 483579-014 Date Collected: 04.16.14 16.21 Date Received: 04.17.14 09.26
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939234 Date Prep: 04.22.14 16.00
Prep seq: 654386

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0375	0.00100	0.000800	mg/L	04.23.14 07:05		1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 07:05	U	1
Ethylbenzene	100-41-4	0.00751	0.00100	0.000800	mg/L	04.23.14 07:05		1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 07:05	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 07:05	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	04.23.14 07:05	U	
Total BTEX		0.0450		0.000700	mg/L	04.23.14 07:05		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	92	80 - 120	%		
4-Bromofluorobenzene	106	80 - 120	%		



Certificate of Analytical Results

483579



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id: **654383-1-BLK** Matrix: Water Sample Depth:
Lab Sample Id: 654383-1-BLK Date Collected: Date Received:
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939232 Date Prep: 04.22.14 16.00
Prep seq: 654383

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.22.14 19:14	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.22.14 19:14	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.22.14 19:14	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.22.14 19:14	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.22.14 19:14	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	85	80 - 120	%		
4-Bromofluorobenzene	88	80 - 120	%		

Sample Id: **654386-1-BLK** Matrix: Water Sample Depth:
Lab Sample Id: 654386-1-BLK Date Collected: Date Received:
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 939234 Date Prep: 04.22.14 16.00
Prep seq: 654386

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	04.23.14 04:20	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	04.23.14 04:20	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	04.23.14 04:20	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	04.23.14 04:20	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	04.23.14 04:20	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	84	80 - 120	%		
4-Bromofluorobenzene	90	80 - 120	%		

- 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 **SQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Work Orders : 483579,

Project ID: A414 7008

Lab Batch #: 939232

Sample: 654383-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 04/22/14 19:14	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0255	0.0300	85	80-120
4-Bromofluorobenzene		0.0263	0.0300	88	80-120

Lab Batch #: 939232

Sample: 654383-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 04/22/14 19:31	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0276	0.0300	92	80-120
4-Bromofluorobenzene		0.0311	0.0300	104	80-120

Lab Batch #: 939232

Sample: 654383-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 04/22/14 19:47	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0274	0.0300	91	80-120
4-Bromofluorobenzene		0.0313	0.0300	104	80-120

Lab Batch #: 939232

Sample: 483579-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 04/22/14 20:04	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0285	0.0300	95	80-120
4-Bromofluorobenzene		0.0320	0.0300	107	80-120

Lab Batch #: 939232

Sample: 483579-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 04/22/14 20:21	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0284	0.0300	95	80-120
4-Bromofluorobenzene		0.0318	0.0300	106	80-120

* 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: Livingston Ridge-HP Sims

Work Orders : 483579,

Project ID: A414 7008

Lab Batch #: 939234

Sample: 654386-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 04/23/14 04:20	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0253	0.0300	84	80-120
4-Bromofluorobenzene		0.0269	0.0300	90	80-120

Lab Batch #: 939234

Sample: 654386-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 04/23/14 04:37	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0284	0.0300	95	80-120
4-Bromofluorobenzene		0.0324	0.0300	108	80-120

Lab Batch #: 939234

Sample: 654386-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 04/23/14 04:53	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0287	0.0300	96	80-120
4-Bromofluorobenzene		0.0318	0.0300	106	80-120

Lab Batch #: 939234

Sample: 483579-010 S / MS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 04/23/14 05:10	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0294	0.0300	98	80-120
4-Bromofluorobenzene		0.0328	0.0300	109	80-120

Lab Batch #: 939234

Sample: 483579-010 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 04/23/14 05:26	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0293	0.0300	98	80-120
4-Bromofluorobenzene		0.0330	0.0300	110	80-120

* 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.

Project Name: Livingston Ridge-HP Sims

Work Order #: 483579

Project ID: A414 7008

Analyst: ARM

Date Prepared: 04/22/2014

Date Analyzed: 04/22/2014

Lab Batch ID: 939232

Sample: 654383-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	<0.00100	0.100	0.0925	93	0.100	0.0927	93	0	70-125	25	
Toluene	<0.00200	0.100	0.0916	92	0.100	0.0920	92	0	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0973	97	0.100	0.0979	98	1	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.201	101	0.200	0.202	101	0	70-131	25	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.102	102	1	71-133	25	

Analyst: ARM

Date Prepared: 04/22/2014

Date Analyzed: 04/23/2014

Lab Batch ID: 939234

Sample: 654386-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	<0.00100	0.100	0.0920	92	0.100	0.0926	93	1	70-125	25	
Toluene	<0.00200	0.100	0.0903	90	0.100	0.0913	91	1	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0944	94	0.100	0.0958	96	1	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.194	97	0.200	0.197	99	2	70-131	25	
o-Xylene	<0.00100	0.100	0.0990	99	0.100	0.100	100	1	71-133	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: Livingston Ridge-HP Sims

Work Order # : 483579

Project ID: A414 7008

Lab Batch ID: 939232

QC- Sample ID: 483579-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 04/22/2014

Date Prepared: 04/22/2014

Analyst: ARM

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	<0.00100	0.100	0.0960	96	0.100	0.0951	95	1	70-125	25	
Toluene	<0.00200	0.100	0.0953	95	0.100	0.0941	94	1	70-125	25	
Ethylbenzene	<0.00100	0.100	0.102	102	0.100	0.100	100	2	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.210	105	0.200	0.207	104	1	70-131	25	
o-Xylene	<0.00100	0.100	0.105	105	0.100	0.104	104	1	71-133	25	

Lab Batch ID: 939234

QC- Sample ID: 483579-010 S

Batch #: 1 Matrix: Water

Date Analyzed: 04/23/2014

Date Prepared: 04/22/2014

Analyst: ARM

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	<0.00100	0.100	0.0923	92	0.100	0.0962	96	4	70-125	25	
Toluene	<0.00200	0.100	0.0916	92	0.100	0.0941	94	3	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0963	96	0.100	0.0980	98	2	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.198	99	0.200	0.201	101	2	70-131	25	
o-Xylene	<0.00100	0.100	0.100	100	0.100	0.102	102	2	71-133	25	

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

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

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.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 04/17/2014 09:26:00 AM

Work Order #: 483579

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	0
#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 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ?	Yes
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

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

Analyst:	PH Device/Lot#:
----------	-----------------

Checklist completed by:

Julian Martinez

Date: 04/17/2014

Checklist reviewed by:

Kelsey Brooks

Date: 04/23/2014

Analytical Report 488907

for

PLAINS ALL AMERICAN EH&S

Project Manager: Dale Moxley
Livingston Ridge- HP Sims (SRS # 2001-11005

A4147008

14-JUL-14

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



14-JUL-14

Project Manager: **Dale Moxley**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **488907**
Livingston Ridge- HP Sims (SRS # 2001-11005
Project Address: Midland TX

Dale Moxley:

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) 488907. 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. 488907 will be filed for 60 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,

Kelsey Brooks

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	07-08-14 07:39		488907-001
MW-15	W	07-08-14 08:19		488907-002
MW-11	W	07-08-14 08:57		488907-003
MW-12	W	07-08-14 09:38		488907-004
MW-13	W	07-08-14 10:21		488907-005
MW-2	W	07-08-14 11:15		488907-006
MW-9	W	07-08-14 12:02		488907-007
MW-6	W	07-08-14 12:40		488907-008
MW-7	W	07-08-14 13:18		488907-009
MW-10	W	07-08-14 13:50		488907-010
MW-8	W	07-08-14 14:25		488907-011
MW-1	W	07-08-14 15:02		488907-012
MW-4	W	07-08-14 15:47		488907-013
MW-5	W	07-08-14 16:20		488907-014
MW-99	W	07-08-14 16:50		488907-015



CASE NARRATIVE



Client Name: *PLAINS ALL AMERICAN EH&S*

Project Name: *Livingston Ridge- HP Sims (SRS # 2001-11005)*

Project ID: *A4147008*

Work Order Number(s): *488907*

Report Date: *14-JUL-14*

Date Received: *07/09/2014*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results

488907



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-14** Matrix: Water Sample Depth:
Lab Sample Id: 488907-001 Date Collected: 07.08.14 07.39 Date Received: 07.09.14 08.58
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 945301 Date Prep: 07.09.14 15.00
Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	07.10.14 02:17	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 02:17	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	07.10.14 02:17	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 02:17	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 02:17	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 02:17	U	
Total BTEX		ND		0.000700	mg/L	07.10.14 02:17	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	80 - 120	%		
4-Bromofluorobenzene	104	80 - 120	%		

Sample Id: **MW-15** Matrix: Water Sample Depth:
Lab Sample Id: 488907-002 Date Collected: 07.08.14 08.19 Date Received: 07.09.14 08.58
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 945301 Date Prep: 07.09.14 15.00
Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	07.10.14 02:33	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 02:33	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	07.10.14 02:33	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 02:33	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 02:33	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 02:33	U	
Total BTEX		ND		0.000700	mg/L	07.10.14 02:33	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	80 - 120	%		
4-Bromofluorobenzene	100	80 - 120	%		



Certificate of Analytical Results

488907



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-11** Matrix: Water Sample Depth:
Lab Sample Id: 488907-003 Date Collected: 07.08.14 08.57 Date Received: 07.09.14 08.58
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 945301 Date Prep: 07.09.14 15.00
Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	07.10.14 02:49	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 02:49	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	07.10.14 02:49	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 02:49	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 02:49	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 02:49	U	
Total BTEX		ND		0.000700	mg/L	07.10.14 02:49	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	80 - 120	%		
4-Bromofluorobenzene	100	80 - 120	%		

Sample Id: **MW-12** Matrix: Water Sample Depth:
Lab Sample Id: 488907-004 Date Collected: 07.08.14 09.38 Date Received: 07.09.14 08.58
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 945301 Date Prep: 07.09.14 15.00
Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0200	0.00100	0.000800	mg/L	07.10.14 05:33		1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 05:33	U	1
Ethylbenzene	100-41-4	0.0166	0.00100	0.000800	mg/L	07.10.14 05:33		1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 05:33	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 05:33	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 05:33	U	
Total BTEX		0.0366		0.000700	mg/L	07.10.14 05:33		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	87	80 - 120	%		
4-Bromofluorobenzene	111	80 - 120	%		



Certificate of Analytical Results

488907



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-13** Matrix: Water Sample Depth:
Lab Sample Id: 488907-005 Date Collected: 07.08.14 10.21 Date Received: 07.09.14 08.58
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 945301 Date Prep: 07.09.14 15.00
Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	07.10.14 05:17	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 05:17	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	07.10.14 05:17	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 05:17	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 05:17	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 05:17	U	
Total BTEX		ND		0.000700	mg/L	07.10.14 05:17	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	89	80 - 120	%		
4-Bromofluorobenzene	97	80 - 120	%		

Sample Id: **MW-2** Matrix: Water Sample Depth:
Lab Sample Id: 488907-006 Date Collected: 07.08.14 11.15 Date Received: 07.09.14 08.58
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 945301 Date Prep: 07.09.14 15.00
Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	07.10.14 03:06	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 03:06	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	07.10.14 03:06	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 03:06	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 03:06	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 03:06	U	
Total BTEX		ND		0.000700	mg/L	07.10.14 03:06	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	89	80 - 120	%		
4-Bromofluorobenzene	99	80 - 120	%		



Certificate of Analytical Results

488907



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: MW-9

Matrix: Water

Sample Depth:

Lab Sample Id: 488907-007

Date Collected: 07.08.14 12.02

Date Received: 07.09.14 08.58

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 945301

Date Prep: 07.09.14 15.00

Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	07.10.14 03:22	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 03:22	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	07.10.14 03:22	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 03:22	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 03:22	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 03:22	U	
Total BTEX		ND		0.000700	mg/L	07.10.14 03:22	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	89	80 - 120	%		
4-Bromofluorobenzene	98	80 - 120	%		

Sample Id: MW-6

Matrix: Water

Sample Depth:

Lab Sample Id: 488907-008

Date Collected: 07.08.14 12.40

Date Received: 07.09.14 08.58

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 945301

Date Prep: 07.09.14 15.00

Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	07.10.14 03:38	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 03:38	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	07.10.14 03:38	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 03:38	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 03:38	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 03:38	U	
Total BTEX		ND		0.000700	mg/L	07.10.14 03:38	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	90	80 - 120	%		
4-Bromofluorobenzene	103	80 - 120	%		



Certificate of Analytical Results

488907



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-7** Matrix: Water Sample Depth:
Lab Sample Id: 488907-009 Date Collected: 07.08.14 13.18 Date Received: 07.09.14 08.58
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 945301 Date Prep: 07.09.14 15.00
Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	07.10.14 03:55	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 03:55	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	07.10.14 03:55	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 03:55	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 03:55	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 03:55	U	
Total BTEX		ND		0.000700	mg/L	07.10.14 03:55	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	90	80 - 120	%		
4-Bromofluorobenzene	99	80 - 120	%		

Sample Id: **MW-10** Matrix: Water Sample Depth:
Lab Sample Id: 488907-010 Date Collected: 07.08.14 13.50 Date Received: 07.09.14 08.58
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 945301 Date Prep: 07.09.14 15.00
Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	07.10.14 04:11	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 04:11	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	07.10.14 04:11	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 04:11	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 04:11	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 04:11	U	
Total BTEX		ND		0.000700	mg/L	07.10.14 04:11	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	80 - 120	%		
4-Bromofluorobenzene	99	80 - 120	%		

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: MW-8	Matrix: Water	Sample Depth:
Lab Sample Id: 488907-011	Date Collected: 07.08.14 14.25	Date Received: 07.09.14 08.58
Analytical Method: BTEX by EPA 8021B		Prep Method: 5030B
Analyst: ARM	% Moist:	Tech: ARM
Seq Number: 945301	Date Prep: 07.09.14 15.00	
	Prep seq: 658153	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	07.10.14 05:00	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 05:00	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	07.10.14 05:00	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 05:00	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 05:00	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 05:00	U	
Total BTEX		ND		0.000700	mg/L	07.10.14 05:00	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	89	80 - 120	%		
4-Bromofluorobenzene	100	80 - 120	%		

Sample Id: MW-1	Matrix: Water	Sample Depth:
Lab Sample Id: 488907-012	Date Collected: 07.08.14 15.02	Date Received: 07.09.14 08.58
Analytical Method: BTEX by EPA 8021B		Prep Method: 5030B
Analyst: ARM	% Moist:	Tech: ARM
Seq Number: 945301	Date Prep: 07.09.14 15.00	
	Prep seq: 658153	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00846	0.00100	0.000800	mg/L	07.10.14 05:50		1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 05:50	U	1
Ethylbenzene	100-41-4	0.00279	0.00100	0.000800	mg/L	07.10.14 05:50		1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 05:50	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 05:50	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 05:50	U	
Total BTEX		0.0113		0.000700	mg/L	07.10.14 05:50		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	92	80 - 120	%		
4-Bromofluorobenzene	111	80 - 120	%		



Certificate of Analytical Results

488907



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: MW-4

Matrix: Water

Sample Depth:

Lab Sample Id: 488907-013

Date Collected: 07.08.14 15.47

Date Received: 07.09.14 08.58

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 945301

Date Prep: 07.09.14 15.00

Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0146	0.00100	0.000800	mg/L	07.10.14 06:05		1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 06:05	U	1
Ethylbenzene	100-41-4	0.00803	0.00100	0.000800	mg/L	07.10.14 06:05		1
m,p-Xylenes	179601-23-1	0.00210	0.00200	0.00120	mg/L	07.10.14 06:05		1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 06:05	U	1
Total Xylenes	1330-20-7	0.00210		0.000700	mg/L	07.10.14 06:05		
Total BTEX		0.0247		0.000700	mg/L	07.10.14 06:05		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	89	80 - 120	%		
4-Bromofluorobenzene	106	80 - 120	%		

Sample Id: MW-5

Matrix: Water

Sample Depth:

Lab Sample Id: 488907-014

Date Collected: 07.08.14 16.20

Date Received: 07.09.14 08.58

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 945301

Date Prep: 07.09.14 15.00

Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00691	0.00100	0.000800	mg/L	07.10.14 06:21		1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 06:21	U	1
Ethylbenzene	100-41-4	0.0296	0.00100	0.000800	mg/L	07.10.14 06:21		1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 06:21	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 06:21	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 06:21	U	
Total BTEX		0.0365		0.000700	mg/L	07.10.14 06:21		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	87	80 - 120	%		
4-Bromofluorobenzene	113	80 - 120	%		



Certificate of Analytical Results

488907



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-99**

Matrix: Water

Sample Depth:

Lab Sample Id: 488907-015

Date Collected: 07.08.14 16.50

Date Received: 07.09.14 08.58

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 945301

Date Prep: 07.09.14 15.00

Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00761	0.00100	0.000800	mg/L	07.10.14 06:36		1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 06:36	U	1
Ethylbenzene	100-41-4	0.0334	0.00100	0.000800	mg/L	07.10.14 06:36		1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 06:36	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 06:36	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	07.10.14 06:36	U	
Total BTEX		0.0410		0.000700	mg/L	07.10.14 06:36		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	84	80 - 120	%		
4-Bromofluorobenzene	115	80 - 120	%		



Certificate of Analytical Results

488907



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: 658153-1-BLK Matrix: Water Sample Depth:
Lab Sample Id: 658153-1-BLK Date Collected: Date Received:
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 945301 Date Prep: 07.09.14 15.00
Prep seq: 658153

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	07.10.14 00:05	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	07.10.14 00:05	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	07.10.14 00:05	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	07.10.14 00:05	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	07.10.14 00:05	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	90	80 - 120	%		
4-Bromofluorobenzene	98	80 - 120	%		

- 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

+ NELAC certification not offered for this compound.

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

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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge- HP Sims (SRS # 2001-11005)

Work Orders : 488907,

Project ID: A4147008

Lab Batch #: 945301

Sample: 658153-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/10/14 00:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 945301

Sample: 658153-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/10/14 00:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 945301

Sample: 658153-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/10/14 00:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 945301

Sample: 488884-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/10/14 00:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0340	0.0300	113	80-120	

Lab Batch #: 945301

Sample: 488884-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/10/14 01:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

* 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: Livingston Ridge- HP Sims (SRS # 2001-11005)

Work Order #: 488907

Project ID: A4147008

Analyst: ARM

Date Prepared: 07/09/2014

Date Analyzed: 07/10/2014

Lab Batch ID: 945301

Sample: 658153-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	<0.00100	0.100	0.0948	95	0.100	0.0967	97	2	70-125	25	
Toluene	<0.00200	0.100	0.0938	94	0.100	0.0958	96	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.100	100	0.100	0.103	103	3	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.205	103	0.200	0.211	106	3	70-131	25	
o-Xylene	<0.00100	0.100	0.104	104	0.100	0.107	107	3	71-133	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: Livingston Ridge- HP Sims (SRS # 2001-11005)

Work Order # : 488907

Project ID: A4147008

Lab Batch ID: 945301

QC- Sample ID: 488884-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 07/10/2014

Date Prepared: 07/09/2014

Analyst: ARM

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	<0.00100	0.100	0.0938	94	0.100	0.0962	96	3	70-125	25	
Toluene	<0.00200	0.100	0.0934	93	0.100	0.0952	95	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.100	100	0.100	0.102	102	2	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.206	103	0.200	0.209	105	1	70-131	25	
o-Xylene	<0.00100	0.100	0.104	104	0.100	0.106	106	2	71-133	25	

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

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

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.



CHAIN OF CUSTODY RECORD

Laboratory: Xenco Laboratories
Address: 12600 West I-20 East
Odessa, TX 79765

Office Location Midland

Phone: (432) 563-1800

Project Manager: J. Dale Moxley

Contact: Julian Martinez

Sample's Name: Kimble Thrash

PO/SO #:

Sampler's Signature

Project Number A4147008 Project Name Livingston Ridge - HP Sims (SRS # 2001-11005)

Matrix Date Time Comp Grab Identifying Marks of Sample(s) Start Depth End Depth

GW 7/8/2014 1425 X X MW-8 40 ml VOA No. Type of Containers

GW 7/8/2014 1502 X X MW-1 2 BTEX (EPA Method 8021B)

GW 7/8/2014 1547 X X MW-4 2

GW 7/8/2014 1620 X X MW-5 2

GW 7/8/2014 1650 X X MW-99 2

TURNAROUND TIME ☒ 48-Hour Rush ☐ 24-Hour Rush TRRP Laboratory Review Checklist ☐ Yes ☐ No

Relinquished by (Signature) Date: 7/9/14 Time: 0858 Received by (Signature) Julian Martinez Date: 7-9-14 Time: 8:58

Relinquished by (Signature) Date: Time: Received by (Signature) Date: Time:

Relinquished by (Signature) Date: Time: Received by (Signature) Date: Time:

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 JL 250 ml - Glass wide mouth P/O - Plastic or other

Midland Office ■ 1211 West Florida Avenue ■ Midland, Texas 79701 ■ 432-684-9600

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NOTES: E-MAIL RESULTS TO:
CIBRYANT@PAALP.COM
&
JDMOXLEY@TERRACON.COM
&
CTHOLLADAY@TERRACON.COM

Lab Sample ID
488907

Page 2 of 2

TEMP OF COOLER
WHEN RECEIVED (°C) 10°C



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 07/09/2014 08:58:00 AM

Work Order #: 488907

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ?	Yes
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	No

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Kelsey Brooks
Kelsey Brooks

Date: 07/09/2014

Checklist reviewed by:

Kelsey Brooks
Kelsey Brooks

Date: 07/09/2014

Analytical Report 494632

for

PLAINS ALL AMERICAN EH&S

Project Manager: Dale Moxley
Livingston Ridge- HP Sims (SRS # 2001-11005

A4147008

13-OCT-14

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



13-OCT-14

Project Manager: **Dale Moxley**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **494632**
Livingston Ridge- HP Sims (SRS # 2001-11005
Project Address: Midland TX

Dale Moxley:

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) 494632. 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. 494632 will be filed for 60 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,

Kelsey Brooks

Project Manager

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PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-3	W	10-04-14 08:30		494632-001
MW-14	W	10-04-14 09:45		494632-002
MW-15	W	10-04-14 10:35		494632-003
MW-11	W	10-04-14 11:15		494632-004
MW-12	W	10-04-14 11:55		494632-005
MW-13	W	10-04-14 12:34		494632-006
MW-2	W	10-04-14 13:49		494632-007
MW-9	W	10-04-14 14:29		494632-008
MW-6	W	10-04-14 15:14		494632-009
MW-7	W	10-04-14 15:59		494632-010
MW-10	W	10-04-14 16:35		494632-011
MW-8	W	10-04-14 17:12		494632-012
MW-1	W	10-04-14 18:03		494632-013
MW-4	W	10-04-14 18:44		494632-014
MW-5	W	10-04-14 19:26		494632-015



CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Livingston Ridge- HP Sims (SRS # 2001-11005)

Project ID: A4147008

Work Order Number(s): 494632

Report Date: 13-OCT-14

Date Received: 10/06/2014

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-952724 PAHs by GCMS SIM

Acenaphthylene recovered above QC limits in the laboratory control sample indicating a potential high bias. Analyte was not detected in any of the associated samples and therefore the data was accepted.

Samples affected are: 494632-014, -013, -015.

Acenaphthylene RPD was outside laboratory control limits.

Samples affected are: 494632-014, -013, -015



Certificate of Analytical Results

494632



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-3** Matrix: Water Sample Depth:
Lab Sample Id: 494632-001 Date Collected: 10.04.14 08.30 Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 11:44	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 11:44	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 11:44	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 11:44	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 11:44	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 11:44	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 11:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	80 - 120	%		
4-Bromofluorobenzene	95	80 - 120	%		

Sample Id: **MW-14** Matrix: Water Sample Depth:
Lab Sample Id: 494632-002 Date Collected: 10.04.14 09.45 Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 11:59	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 11:59	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 11:59	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 11:59	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 11:59	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 11:59	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 11:59	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		



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Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-15** Matrix: Water Sample Depth:
Lab Sample Id: 494632-003 Date Collected: 10.04.14 10.35 Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 12:16	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 12:16	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 12:16	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 12:16	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 12:16	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 12:16	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 12:16	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	105	80 - 120	%		
4-Bromofluorobenzene	94	80 - 120	%		

Sample Id: **MW-11** Matrix: Water Sample Depth:
Lab Sample Id: 494632-004 Date Collected: 10.04.14 11.15 Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 12:32	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 12:32	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 12:32	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 12:32	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 12:32	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 12:32	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 12:32	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	80 - 120	%		
4-Bromofluorobenzene	98	80 - 120	%		

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Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: MW-12	Matrix: Water	Sample Depth:
Lab Sample Id: 494632-005	Date Collected: 10.04.14 11.55	Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B		Prep Method: 5030B
Analyst: ARM	% Moist:	Tech: ARM
Seq Number: 952495	Date Prep: 10.08.14 07.00	
	Prep seq: 662587	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 12:48	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 12:48	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 12:48	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 12:48	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 12:48	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 12:48	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 12:48	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	80 - 120	%		
4-Bromofluorobenzene	97	80 - 120	%		

Sample Id: MW-13	Matrix: Water	Sample Depth:
Lab Sample Id: 494632-006	Date Collected: 10.04.14 12.34	Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B		Prep Method: 5030B
Analyst: ARM	% Moist:	Tech: ARM
Seq Number: 952495	Date Prep: 10.08.14 07.00	
	Prep seq: 662587	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 13:05	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 13:05	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 13:05	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 13:05	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 13:05	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 13:05	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 13:05	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		

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Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: MW-2	Matrix: Water	Sample Depth:
Lab Sample Id: 494632-007	Date Collected: 10.04.14 13.49	Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B		Prep Method: 5030B
Analyst: ARM	% Moist:	Tech: ARM
Seq Number: 952495	Date Prep: 10.08.14 07.00	
	Prep seq: 662587	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 13:21	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 13:21	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 13:21	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 13:21	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 13:21	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 13:21	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 13:21	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	80 - 120	%		
4-Bromofluorobenzene	99	80 - 120	%		

Sample Id: MW-9	Matrix: Water	Sample Depth:
Lab Sample Id: 494632-008	Date Collected: 10.04.14 14.29	Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B		Prep Method: 5030B
Analyst: ARM	% Moist:	Tech: ARM
Seq Number: 952495	Date Prep: 10.08.14 07.00	
	Prep seq: 662587	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 14:10	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 14:10	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 14:10	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 14:10	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 14:10	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 14:10	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 14:10	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	80 - 120	%		
4-Bromofluorobenzene	80	80 - 120	%		



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Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-6** Matrix: Water Sample Depth:
Lab Sample Id: 494632-009 Date Collected: 10.04.14 15.14 Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 16:16	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 16:16	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 16:16	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 16:16	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 16:16	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 16:16	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 16:16	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	80	80 - 120	%		
4-Bromofluorobenzene	93	80 - 120	%		

Sample Id: **MW-7** Matrix: Water Sample Depth:
Lab Sample Id: 494632-010 Date Collected: 10.04.14 15.59 Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 16:33	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 16:33	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 16:33	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 16:33	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 16:33	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 16:33	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 16:33	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		



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Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-10** Matrix: Water Sample Depth:
Lab Sample Id: 494632-011 Date Collected: 10.04.14 16.35 Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 16:49	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 16:49	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 16:49	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 16:49	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 16:49	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 16:49	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 16:49	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	80 - 120	%		
4-Bromofluorobenzene	95	80 - 120	%		

Sample Id: **MW-8** Matrix: Water Sample Depth:
Lab Sample Id: 494632-012 Date Collected: 10.04.14 17.12 Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 17:05	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 17:05	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 17:05	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 17:05	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 17:05	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 17:05	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 17:05	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		



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Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-1** Matrix: Water Sample Depth:
Lab Sample Id: 494632-013 Date Collected: 10.04.14 18.03 Date Received: 10.06.14 11.00
Analytical Method: PAHs by GCMS SIM Prep Method: 3510C
Analyst: PKH % Moist: Tech: PKH
Seq Number: 952724 Date Prep: 10.08.14 16.48
Subcontractor: SUB: E871002 Prep seq: 662625

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Acenaphthene	83-32-9	ND	0.0000500	0.00000495	mg/L	10.10.14 16:10	U	1
Acenaphthylene	208-96-8	ND	0.0000500	0.00000407	mg/L	10.10.14 16:10	U	1
Anthracene	120-12-7	ND	0.0000500	0.00000236	mg/L	10.10.14 16:10	U	1
Benzo(a)anthracene	56-55-3	ND	0.0000500	0.00000527	mg/L	10.10.14 16:10	U	1
Benzo(a)pyrene	50-32-8	ND	0.0000500	0.00000660	mg/L	10.10.14 16:10	U	1
Benzo(b)fluoranthene	205-99-2	ND	0.0000500	0.00000998	mg/L	10.10.14 16:10	U	1
Benzo(g,h,i)perylene	191-24-2	ND	0.0000500	0.00000796	mg/L	10.10.14 16:10	U	1
Benzo(k)fluoranthene	207-08-9	ND	0.0000500	0.00000583	mg/L	10.10.14 16:10	U	1
Chrysene	218-01-9	ND	0.0000500	0.00000427	mg/L	10.10.14 16:10	U	1
Dibenz(a,h)anthracene	53-70-3	ND	0.0000500	0.00000580	mg/L	10.10.14 16:10	U	1
Dibenzofuran	132-64-9	0.000332	0.0000500	0.00000590	mg/L	10.10.14 16:10		1
Fluoranthene	206-44-0	ND	0.0000500	0.00000633	mg/L	10.10.14 16:10	U	1
Fluorene	86-73-7	ND	0.0000500	0.00000633	mg/L	10.10.14 16:10	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	ND	0.0000500	0.00000750	mg/L	10.10.14 16:10	U	1
Naphthalene	91-20-3	ND	0.000500	0.0000149	mg/L	10.10.14 16:10	U	1
Phenanthrene	85-01-8	0.000148	0.0000500	0.00000707	mg/L	10.10.14 16:10		1
Pyrene	129-00-0	ND	0.0000500	0.00000691	mg/L	10.10.14 16:10	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Nitrobenzene-d5	47	35 - 114	%		
2-Fluorobiphenyl	58	43 - 116	%		
Terphenyl-D14	64	33 - 141	%		



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Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-1** Matrix: Water Sample Depth:
Lab Sample Id: 494632-013 Date Collected: 10.04.14 18.03 Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00656	0.00100	0.000800	mg/L	10.08.14 18:10		1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 18:10	U	1
Ethylbenzene	100-41-4	0.00153	0.00100	0.000800	mg/L	10.08.14 18:10		1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 18:10	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 18:10	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 18:10	U	
Total BTEX		0.00809		0.000700	mg/L	10.08.14 18:10		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	80 - 120	%		
4-Bromofluorobenzene	93	80 - 120	%		



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Livingston Ridge- HP Sims (SRS # 2001-11005)

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

Lab Sample Id: 494632-014 Date Collected: 10.04.14 18.44 Date Received: 10.06.14 11.00

Analytical Method: PAHs by GCMS SIM Prep Method: 3510C

Analyst: PKH % Moist: Tech: PKH

Seq Number: 952724 Date Prep: 10.08.14 16.51

Subcontractor: SUB: E871002 Prep seq: 662625

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Acenaphthene	83-32-9	ND	0.0000500	0.00000495	mg/L	10.09.14 19:55	U	1
Acenaphthylene	208-96-8	ND	0.0000500	0.00000407	mg/L	10.09.14 19:55	U	1
Anthracene	120-12-7	ND	0.0000500	0.00000236	mg/L	10.09.14 19:55	U	1
Benzo(a)anthracene	56-55-3	ND	0.0000500	0.00000527	mg/L	10.09.14 19:55	U	1
Benzo(a)pyrene	50-32-8	ND	0.0000500	0.00000660	mg/L	10.09.14 19:55	U	1
Benzo(b)fluoranthene	205-99-2	ND	0.0000500	0.00000998	mg/L	10.09.14 19:55	U	1
Benzo(g,h,i)perylene	191-24-2	ND	0.0000500	0.00000796	mg/L	10.09.14 19:55	U	1
Benzo(k)fluoranthene	207-08-9	ND	0.0000500	0.00000583	mg/L	10.09.14 19:55	U	1
Chrysene	218-01-9	ND	0.0000500	0.00000427	mg/L	10.09.14 19:55	U	1
Dibenz(a,h)anthracene	53-70-3	ND	0.0000500	0.00000580	mg/L	10.09.14 19:55	U	1
Dibenzofuran	132-64-9	0.000114	0.0000500	0.00000590	mg/L	10.09.14 19:55		1
Fluoranthene	206-44-0	ND	0.0000500	0.00000633	mg/L	10.09.14 19:55	U	1
Fluorene	86-73-7	ND	0.0000500	0.00000633	mg/L	10.09.14 19:55	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	ND	0.0000500	0.00000750	mg/L	10.09.14 19:55	U	1
Naphthalene	91-20-3	ND	0.000500	0.0000149	mg/L	10.09.14 19:55	U	1
Phenanthrene	85-01-8	0.0000614	0.0000500	0.00000707	mg/L	10.09.14 19:55		1
Pyrene	129-00-0	ND	0.0000500	0.00000691	mg/L	10.09.14 19:55	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Nitrobenzene-d5	58	35 - 114	%		
2-Fluorobiphenyl	71	43 - 116	%		
Terphenyl-D14	70	33 - 141	%		



Certificate of Analytical Results

494632



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: **MW-4** Matrix: Water Sample Depth:
Lab Sample Id: 494632-014 Date Collected: 10.04.14 18.44 Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 17:38	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 17:38	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 17:38	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 17:38	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 17:38	U	1
Total Xylenes	1330-20-7	ND		0.000700	mg/L	10.08.14 17:38	U	
Total BTEX		ND		0.000700	mg/L	10.08.14 17:38	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	80 - 120	%		
4-Bromofluorobenzene	95	80 - 120	%		



Certificate of Analytical Results

494632



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

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

Lab Sample Id: 494632-015 Date Collected: 10.04.14 19.26 Date Received: 10.06.14 11.00

Analytical Method: PAHs by GCMS SIM Prep Method: 3510C

Analyst: **PKH** % Moist: Tech: **PKH**

Seq Number: 952724 Date Prep: 10.08.14 16.54

Subcontractor: SUB: E871002 Prep seq: 662625

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Acenaphthene	83-32-9	ND	0.0000505	0.00000500	mg/L	10.10.14 16:29	U	1
Acenaphthylene	208-96-8	ND	0.0000505	0.00000411	mg/L	10.10.14 16:29	U	1
Anthracene	120-12-7	ND	0.0000505	0.00000238	mg/L	10.10.14 16:29	U	1
Benzo(a)anthracene	56-55-3	ND	0.0000505	0.00000533	mg/L	10.10.14 16:29	U	1
Benzo(a)pyrene	50-32-8	ND	0.0000505	0.00000667	mg/L	10.10.14 16:29	U	1
Benzo(b)fluoranthene	205-99-2	ND	0.0000505	0.0000101	mg/L	10.10.14 16:29	U	1
Benzo(g,h,i)perylene	191-24-2	ND	0.0000505	0.00000804	mg/L	10.10.14 16:29	U	1
Benzo(k)fluoranthene	207-08-9	ND	0.0000505	0.00000588	mg/L	10.10.14 16:29	U	1
Chrysene	218-01-9	ND	0.0000505	0.00000431	mg/L	10.10.14 16:29	U	1
Dibenz(a,h)anthracene	53-70-3	ND	0.0000505	0.00000586	mg/L	10.10.14 16:29	U	1
Dibenzofuran	132-64-9	0.000710	0.0000505	0.00000596	mg/L	10.10.14 16:29		1
Fluoranthene	206-44-0	ND	0.0000505	0.00000639	mg/L	10.10.14 16:29	U	1
Fluorene	86-73-7	0.000301	0.0000505	0.00000640	mg/L	10.10.14 16:29		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	ND	0.0000505	0.00000757	mg/L	10.10.14 16:29	U	1
Naphthalene	91-20-3	0.00741	0.0000505	0.0000151	mg/L	10.10.14 16:29		1
Phenanthrene	85-01-8	0.000190	0.0000505	0.00000714	mg/L	10.10.14 16:29		1
Pyrene	129-00-0	ND	0.0000505	0.00000698	mg/L	10.10.14 16:29	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Nitrobenzene-d5	46	35 - 114	%		
2-Fluorobiphenyl	51	43 - 116	%		
Terphenyl-D14	73	33 - 141	%		



Certificate of Analytical Results

494632



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: MW-5 Matrix: Water Sample Depth:
Lab Sample Id: 494632-015 Date Collected: 10.04.14 19.26 Date Received: 10.06.14 11.00
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0811	0.00100	0.000800	mg/L	10.08.14 18:26		1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 18:26	U	1
Ethylbenzene	100-41-4	0.135	0.00100	0.000800	mg/L	10.08.14 18:26		1
m,p-Xylenes	179601-23-1	0.157	0.00200	0.00120	mg/L	10.08.14 18:26		1
o-Xylene	95-47-6	0.0673	0.00100	0.000700	mg/L	10.08.14 18:26		1
Total Xylenes	1330-20-7	0.224		0.000700	mg/L	10.08.14 18:26		
Total BTEX		0.440		0.000700	mg/L	10.08.14 18:26		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	80 - 120	%		
4-Bromofluorobenzene	111	80 - 120	%		



Certificate of Analytical Results

494632



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: 662587-1-BLK Matrix: Water Sample Depth:
Lab Sample Id: 662587-1-BLK Date Collected: Date Received:
Analytical Method: BTEX by EPA 8021B Prep Method: 5030B
Analyst: ARM % Moist: Tech: ARM
Seq Number: 952495 Date Prep: 10.08.14 07.00
Prep seq: 662587

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	ND	0.00100	0.000800	mg/L	10.08.14 09:16	U	1
Toluene	108-88-3	ND	0.00200	0.00120	mg/L	10.08.14 09:16	U	1
Ethylbenzene	100-41-4	ND	0.00100	0.000800	mg/L	10.08.14 09:16	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	0.00120	mg/L	10.08.14 09:16	U	1
o-Xylene	95-47-6	ND	0.00100	0.000700	mg/L	10.08.14 09:16	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		



Certificate of Analytical Results

494632



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge- HP Sims (SRS # 2001-11005)

Sample Id: 662625-1-BLK Matrix: Water Sample Depth:
Lab Sample Id: 662625-1-BLK Date Collected: Date Received:
Analytical Method: PAHs by GCMS SIM Prep Method: 3510C
Analyst: PKH % Moist: Tech: PKH
Seq Number: 952724 Date Prep: 10.08.14 16.39
Subcontractor: SUB: E871002 Prep seq: 662625

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Acenaphthene	83-32-9	ND	0.0000500	0.00000495	mg/L	10.09.14 18:41	U	1
Acenaphthylene	208-96-8	ND	0.0000500	0.00000407	mg/L	10.09.14 18:41	U	1
Anthracene	120-12-7	ND	0.0000500	0.00000236	mg/L	10.09.14 18:41	U	1
Benzo(a)anthracene	56-55-3	ND	0.0000500	0.00000527	mg/L	10.09.14 18:41	U	1
Benzo(a)pyrene	50-32-8	ND	0.0000500	0.00000660	mg/L	10.09.14 18:41	U	1
Benzo(b)fluoranthene	205-99-2	ND	0.0000500	0.00000998	mg/L	10.09.14 18:41	U	1
Benzo(g,h,i)perylene	191-24-2	ND	0.0000500	0.00000796	mg/L	10.09.14 18:41	U	1
Benzo(k)fluoranthene	207-08-9	ND	0.0000500	0.00000583	mg/L	10.09.14 18:41	U	1
Chrysene	218-01-9	ND	0.0000500	0.00000427	mg/L	10.09.14 18:41	U	1
Dibenz(a,h)anthracene	53-70-3	ND	0.0000500	0.00000580	mg/L	10.09.14 18:41	U	1
Dibenzofuran	132-64-9	ND	0.0000500	0.00000590	mg/L	10.09.14 18:41	U	1
Fluoranthene	206-44-0	ND	0.0000500	0.00000633	mg/L	10.09.14 18:41	U	1
Fluorene	86-73-7	ND	0.0000500	0.00000633	mg/L	10.09.14 18:41	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	ND	0.0000500	0.00000750	mg/L	10.09.14 18:41	U	1
Naphthalene	91-20-3	ND	0.0000500	0.0000149	mg/L	10.09.14 18:41	U	1
Phenanthrene	85-01-8	ND	0.0000500	0.00000707	mg/L	10.09.14 18:41	U	1
Pyrene	129-00-0	ND	0.0000500	0.00000691	mg/L	10.09.14 18:41	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Nitrobenzene-d5	111	35 - 114	%		
2-Fluorobiphenyl	100	43 - 116	%		
Terphenyl-D14	92	33 - 141	%		

- 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 **SQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge- HP Sims (SRS # 2001-11005)

Work Orders : 494632,

Project ID: A4147008

Lab Batch #: 952495

Sample: 662587-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 10/08/14 09:16	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0305	0.0300	102	80-120
4-Bromofluorobenzene		0.0287	0.0300	96	80-120

Lab Batch #: 952495

Sample: 662587-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 10/08/14 09:33	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0311	0.0300	104	80-120
4-Bromofluorobenzene		0.0317	0.0300	106	80-120

Lab Batch #: 952495

Sample: 662587-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 10/08/14 09:49	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0311	0.0300	104	80-120
4-Bromofluorobenzene		0.0311	0.0300	104	80-120

Lab Batch #: 952495

Sample: 494638-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 10/08/14 10:05	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0311	0.0300	104	80-120
4-Bromofluorobenzene		0.0319	0.0300	106	80-120

Lab Batch #: 952495

Sample: 494638-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 10/08/14 10:22	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0312	0.0300	104	80-120
4-Bromofluorobenzene		0.0321	0.0300	107	80-120

* 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: Livingston Ridge- HP Sims (SRS # 2001-11005)

Work Orders : 494632,

Project ID: A4147008

Lab Batch #: 952724

Sample: 662625-1-BLK / BLK

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 10/09/14 18:41

SURROGATE RECOVERY STUDY

PAHs by GCMS SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Nitrobenzene-d5	1.11	1.00	111	35-114	
2-Fluorobiphenyl	1.00	1.00	100	43-116	
Terphenyl-D14	0.917	1.00	92	33-141	

Lab Batch #: 952724

Sample: 662625-1-BKS / BKS

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 10/13/14 13:15

SURROGATE RECOVERY STUDY

PAHs by GCMS SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Nitrobenzene-d5	0.627	1.00	63	35-114	
2-Fluorobiphenyl	0.620	1.00	62	43-116	
Terphenyl-D14	0.653	1.00	65	33-141	

Lab Batch #: 952724

Sample: 662625-1-BSD / BSD

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 10/13/14 13:33

SURROGATE RECOVERY STUDY

PAHs by GCMS SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Nitrobenzene-d5	0.614	1.00	61	35-114	
2-Fluorobiphenyl	0.603	1.00	60	43-116	
Terphenyl-D14	0.648	1.00	65	33-141	

* 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: Livingston Ridge- HP Sims (SRS # 2001-11005)

Work Order #: 494632

Project ID: A4147008

Analyst: ARM

Date Prepared: 10/08/2014

Date Analyzed: 10/08/2014

Lab Batch ID: 952495

Sample: 662587-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	<0.00100	0.100	0.0970	97	0.100	0.0953	95	2	70-125	25	
Toluene	<0.00200	0.100	0.103	103	0.100	0.101	101	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.107	107	0.100	0.105	105	2	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.221	111	0.200	0.215	108	3	70-131	25	
o-Xylene	<0.00100	0.100	0.104	104	0.100	0.102	102	2	71-133	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

Project Name: Livingston Ridge- HP Sims (SRS # 2001-11005)

Work Order #: 494632

Project ID: A4147008

Analyst: PKH

Date Prepared: 10/08/2014

Date Analyzed: 10/13/2014

Lab Batch ID: 952724

Sample: 662625-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

PAHs by GCMS SIM	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
Analytes											
Acenaphthene	<0.0000500	0.00100	0.000610	61	0.00100	0.000615	62	1	57-90	25	
Acenaphthylene	<0.0000500	0.00100	0.00107	107	0.00100	0.000662	66	47	47-95	25	HF
Anthracene	<0.0000500	0.00100	0.000625	63	0.00100	0.000593	59	5	56-90	25	
Benzo(a)anthracene	<0.0000500	0.00100	0.000651	65	0.00100	0.000651	65	0	51-100	25	
Benzo(a)pyrene	<0.0000500	0.00100	0.000692	69	0.00100	0.000643	64	7	49-97	25	
Benzo(b)fluoranthene	<0.0000500	0.00100	0.000662	66	0.00100	0.000675	68	2	41-114	25	
Benzo(g,h,i)perylene	<0.0000500	0.00100	0.000662	66	0.00100	0.000686	69	4	51-105	25	
Benzo(k)fluoranthene	<0.0000500	0.00100	0.000684	68	0.00100	0.000707	71	3	54-103	25	
Chrysene	<0.0000500	0.00100	0.000674	67	0.00100	0.000676	68	0	60-101	25	
Dibenz(a,h)anthracene	<0.0000500	0.00100	0.000673	67	0.00100	0.000702	70	4	50-109	25	
Dibenzofuran	<0.0000500	0.00100	0.000590	59	0.00100	0.000599	60	2	55-91	25	
Fluoranthene	<0.0000500	0.00100	0.000647	65	0.00100	0.000646	65	0	58-93	25	
Fluorene	<0.0000500	0.00100	0.000624	62	0.00100	0.000644	64	3	58-93	25	
Indeno(1,2,3-c,d)Pyrene	<0.0000500	0.00100	0.000669	67	0.00100	0.000693	69	4	52-108	25	
Naphthalene	<0.0000500	0.00100	0.000634	63	0.00100	0.000687	69	8	51-100	25	
Phenanthrene	<0.0000500	0.00100	0.000641	64	0.00100	0.000654	65	2	43-97	25	
Pyrene	<0.0000500	0.00100	0.000645	65	0.00100	0.000655	66	2	51-95	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: Livingston Ridge- HP Sims (SRS # 2001-11005)

Work Order # : 494632

Project ID: A4147008

Lab Batch ID: 952495

QC- Sample ID: 494638-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 10/08/2014

Date Prepared: 10/08/2014

Analyst: ARM

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	<0.00100	0.100	0.0955	96	0.100	0.0969	97	1	70-125	25	
Toluene	<0.00200	0.100	0.101	101	0.100	0.103	103	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.104	104	0.100	0.107	107	3	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.214	107	0.200	0.219	110	2	70-131	25	
o-Xylene	<0.00100	0.100	0.102	102	0.100	0.104	104	2	71-133	25	

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

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

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.

CHAIN OF CUSTODY RECORD

LAB USE ONLY
DUE DATE:

Phone: (432) 563-1800

PO/SO #:
Sampler's Signature

9

No. Type of Containers	OA	er
------------------------	----	----

Start Depth
End Depth

40 ml VOA
1L Amber

BTEX (EPA Method 8021B)

PAHs (GCMS SIM)

HOLD ALL PAHS

UNTIL FURTHER

INSTRUCTED BY

DALE MOXLEY C

TERRACON

Yes ☐ No

2

CJBF

 ∞

JDIV

KATI

100

004-3600

Lab Sample ID
494632

Page 1 of 2

E-MAIL RESULTS TO:

CJBRYANT@PAALP.COM

 ∞

DIVISIONE I © LENTACON.COM

KATHRASH@TERRACON.COM

Midland Office ■ 1211 West Florida Avenue ■ Midland, Texas 79701 ■ 432-684-9600

Responsive ■ Resourceful ■ Reliable



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 10/06/2014 11:00:00 AM

Work Order #: 494632

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	0
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ?	Yes
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	No

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Kelsey Brooks
Kelsey Brooks

Date: 10/06/2014

Checklist reviewed by:

Kelsey Brooks
Kelsey Brooks

Date: 10/06/2014