1R-398

Annual GW Mon. Report

Year: 2011

2011 ANNUAL GROUNDWATER MONITORING REPORT

Livingston Ridge to Hugh - P. Sims
NE ¼ of the SE ¼ 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 A4117008

June 1, 2012

Prepared for:

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

Prepared by:

Terracon

Midland, Texas

Terracon

June 1, 2012

Plains Pipeline, L.P.
2530 State Highway 214
Denver City, Texas 79323
Attn: Mr. Jason Henry

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

Re: 2011 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 A4117008

Dear Mr. Henry:

Terracon is pleased to submit four copies of the 2011 Annual Groundwater Monitoring Report for the above referenced site.

We appreciate the opportunity to perform these services for Plains Pipeline, L.P. 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:

Wesley Ty Burrow
Staff Geologist

Reviewed by:

Barrett W. Bole, P. G.
Senior Associate

PLAINS
ALL AMERICAN

March 29, 2012

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

Re: Plains All American – 2011 Annual Monitoring Reports
2 Sites in Lea County, New Mexico

Dear Mr. Hansen:

Plains All American is an operator of crude oil pipelines and terminal facilities in the state of New Mexico. Plains All American actively monitors certain historical release sites exhibiting groundwater impacts, consistent with assessments and work plans developed in consultation with the New Mexico Oil Conservation Division (NMOCD). In accordance with the rules and regulations of the NMOCD, Plains All American hereby submits our Annual Monitoring reports for the following sites:

Livingston Line-Bob McCasland	1R-0395	Section 3, T21S, R37E, Lea County
Livingston Ridge to Hugh-P. Sims	1R-0398	Section 3, T21S, R37E, Lea County

Terracon prepared these documents and has vouched for their accuracy and completeness, and on behalf of Plains All American, I have personally reviewed the documents and interviewed Terracon personnel in order to verify the accuracy and completeness of these documents. It is based upon these inquiries and reviews that Plains All American submits the enclosed Annual Monitoring Reports for the above facilities.

If you have any questions or require further information, please contact me at (575) 441-1099.

Sincerely,

Jason Henry
Remediation Coordinator
Plains All American

CC: Geoff Leking, NMOCD, Hobbs, NM

Enclosures

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Terracon

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2011 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 A4117008

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 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 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 detected on the groundwater surface and the NMOCD and landowner reportedly were immediately notified of the release. EPI installed three groundwater monitoring wells at the site to determine the extent and magnitude of the release and determine the groundwater gradient.

Environmental Technology Group, Inc. (ETGI), assumed control of remedial activities in August 2002 and installed twelve 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 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 2006 through 2010 Annual Groundwater Monitoring Reports for submittal to the NMOCD. Four quarterly groundwater monitoring and sampling events were conducted during 2011 by Terracon. The events were performed on February 18, 2011, May 25, 2011, August 18, 2011 and November 17, 2011 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 fifteen groundwater monitor wells (MW-1 through MW-15) and temporary monitor well (TMW-1), which is currently located in the center of the former excavation, and to collect samples of groundwater from each well for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) every quarter.

1.3 Standard of Care

Terracon was awarded this project on February 1, 2007. Activities prior to February 1, 2007 were performed by previous consultant 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, 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 18, 2011, May 25, 2011, August 18, 2011 and November 17, 2011 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 check for the presence of PSH. Based on the gauging data, PSH was present during 2011 in monitor wells MW-5 (sheen present), MW-4 (ranging from a sheen to 0.17 feet thick), MW-1 (ranging from a sheen to 0.30 feet thick), and temporary monitor well TMW-1 (at thicknesses ranging from a 0.47 feet to 4.47 feet). Groundwater gradient maps for each quarter are included as Figures 3 through 6 (Appendix A). Gauging data is included in Appendix B as Table 1.

A groundwater sample was collected and analyzed from each of the fifteen groundwater monitor wells and temporary monitor well TMW-1 during the February 2011 sampling event. Groundwater samples were not collected in from wells containing PSH or wells that were on the sample reduction program in May, August and November 2011. Prior to sample collection, each of these monitor wells was micro-purged until consistent values (i.e., less than 10% variance between consecutive readings) were obtained for pH, temperature and conductivity. Following purging, a groundwater sample was collected directly from 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, an analytical laboratory in Odessa, Texas for standard turnaround analysis for BTEX using EPA SW-846 Method 8021B in each of the four quarters.

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, 4, 5, and 6 (Appendix A). Groundwater elevation contours generated from the quarterly sampling events of 2011 indicated the general groundwater gradient was consistent with previous sampling events:

- The gradient/direction during the February 2011 sampling event was 0.003 ft/ft and toward the southeast;
- The gradient/direction during the May 2011 sampling event was 0.003 ft/ft and toward the southeast;
- The gradient/direction during the August 2011 sampling event was 0.003 ft/ft and toward the southeast; and,
- The gradient/direction during the November 2011 sampling event was 0.003 ft/ft and toward the southeast.

Groundwater flow direction remained relatively consistent throughout 2011, to the southeast. Water level measurement data is summarized in Table 1 in Appendix B.

Groundwater elevations in 2011 increased an average of approximately 1.3 feet in site monitor wells. Terracon has been monitoring natural attenuation parameters in select wells at the site on a quarterly basis.

3.2 Groundwater Analysis Data

Laboratory results from the analysis of groundwater samples collected from monitor wells MW-1 through MW-15 and temporary monitor well THM-1 are summarized in Tables 2 and 3 in

Appendix B and presented as Figures 7 through Figure 10 in Appendix A. The executed chain-of-custody forms and laboratory data sheets are provided in Appendix C.

1st Quarter

Groundwater samples were collected and analyzed for BTEX constituents during the first quarter on February 18, 2011. The first quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in February 2011 as they are on a sample reduction schedule. These wells are groundwater monitor wells MW-2, MW-3, MW-7 and MW-8;
- Groundwater samples were not collected from monitor wells MW-1, MW-4 and TMW-1 due to the presence of PSH in February 2011.
- BTEX constituents were not detected in the groundwater samples collected from monitor wells MW-6 and MW-9 through MW-15 at concentrations which exceeded their respective laboratory reporting limit and/or NMWQCC groundwater standards;
- The groundwater samples collected from monitor well MW-5 contained a benzene concentration of 0.165 mg/l, which exceeded the NMWQCC groundwater standard of 0.01 mg/l; and,
- Toluene, ethylbenzene and total xylenes were not detected in any of the groundwater samples collected at the site above their respective laboratory reporting limits and/or NMWQCC groundwater standards;

2nd Quarter

Groundwater samples were collected during the second quarter on May 25, 2011. The second quarter results are summarized below.

- Four monitor wells were not sampled for BTEX constituents in May 2011 as they are on a sample reduction schedule. These wells are groundwater monitor wells MW-2, MW-3, MW-7 and MW-8;
- Groundwater samples were not collected from monitor wells MW-1, MW-4, MW-5, and TMW-1 due to the presence of PSH in May 2011;

- The groundwater samples collected from monitor wells MW-6, MW-9 through MW-15 did not contain benzene at concentrations above the laboratory reporting limit and/or NMWQCC groundwater standard; and,

- Toluene, ethylbenzene and total xylenes were not detected in the groundwater samples collected in May 2011 exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standard.

3rd Quarter

Groundwater samples were collected during the third quarter on August 18, 2011. The third quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in August 2011 as they are on a sample reduction schedule. These wells are groundwater monitor wells MW-2, MW-3, MW-7 and MW-8;

- Groundwater samples were not collected from monitor wells MW-1, MW-4 and TMW-1 due to the presence of PSH in August 2011;

- The groundwater samples collected from monitor wells MW-6, and MW-9 through MW-15 did not contain benzene at concentrations exceeding the laboratory reporting limit and/or NMWQCC groundwater standard;

- Benzene was detected in one groundwater sample collected from MW-5 at a concentration of 0.128 mg/l, which exceed their laboratory reporting limits and/or NMWQCC groundwater standard; and,

- Toluene, ethylbenzene and total xylenes were not detected in the groundwater samples collected in August 2011 exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standard.

4th Quarter

Groundwater samples for the fourth quarter event were collected on November 17, 2011. Results of the fourth quarter results are summarized below:

- Groundwater was not collected from monitor well MW-3 in November 2011, as the well was dry and contained no fluids;

- Groundwater monitor wells MW-1, MW-4, MW-5, and TMW-1 were not sampled during November 2011, due to the presence of PSH in the wells;

- Benzene was not detected in the groundwater samples collected from monitor wells MW-2 and MW-6 through MW-15 at concentrations which exceeded the laboratory reporting limit and/or their NMWQCC groundwater standard for benzene;

- Toluene, ethylbenzene and total xylenes were not detected in the groundwater samples collected in November 2011 exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standard.

3.3 Historical Data Comparisons

Measurable PSH has not been present in the groundwater monitor wells MW-2, MW-3 and MW-6 through MW-15 since they were installed at the site. Monitor wells that historically have contained PSH are MW-1, MW-4, and MW-5, which ranged from a sheen to 0.30 feet thick in 2011. With a few exceptions, the temporary monitor well (TMW-1) which was installed in the center of the excavation, in August 2002, has contained measurable PSH at thicknesses ranging from non-detect to 5.47 feet.

With a few exceptions, historically, benzene has not been present in groundwater samples collected from monitor wells MW-2, MW-3 and MW-6 through MW-15. Benzene has been present in the groundwater samples collected monitor wells MW-1, MW-4, MW-5 and TMW-1 at concentrations exceeding the NMWQCC groundwater standard. Toluene, ethylbenzene and total xylenes were not detected in the groundwater at concentrations exceeding their respectively laboratory reporting limits and/or NMWQCC groundwater standards in any of the groundwater samples in 2011.

In 2011, analyses of PAH constituents in site groundwater was performed on MW-5, which displayed the highest BTEX concentrations throughout the year.

4.0 FINDINGS AND RECOMMENDATION

4.1 Findings

The annual groundwater report presents the results of four groundwater monitoring and sampling events for the 2011 calendar year.

- Measurable PSH was detected in monitor wells MW-1 (from sheen to 0.30 feet), MW-4 (from sheen to 0.18 feet), MW-5 (sheen), and TMW-1 (from 0.47 to 4.47 feet);

- The groundwater gradient was calculated during each quarterly sampling event for 2011, and indicated a relatively consistent southeast groundwater flow direction;
- From 2010 to 2011, groundwater elevations increased by an average of 1.3 feet in site monitor wells;
- Four groundwater monitor wells (MW-2, MW-3, MW-7 and MW-8) are on a sample reduction program and are sampled annually in November for BTEX constituents;
- Groundwater samples collected from monitor wells MW-2, MW-3, and MW-6, and MW-9 through MW-15 have not contained benzene concentrations exceeding the laboratory reporting limit and/or NMWQCC groundwater standard in 2011;
- Toluene, ethylbenzene, and m,p-xylenes, and o-xylenes were not detected in the groundwater samples collected from monitoring wells in 2011 at concentrations which exceeded their respective NMWQCC groundwater standards; 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.
- In 2011, analyses of PAH constituents in site groundwater was performed on MW-5, which displayed the highest BTEX concentrations throughout the year.

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;
- Continue quarterly groundwater sampling for BTEX for all monitor wells for the calendar year 2012 in accordance with the NMOCD approved sample reduction plan;
- Submit an annual report to the NMOCD detailing the 2011 site activities.

DISTRIBUTION

Copy 1: Mr. Edward J. Hansen, Hydrologist
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Oil Conservation Division
1220 South St. Francis Drive
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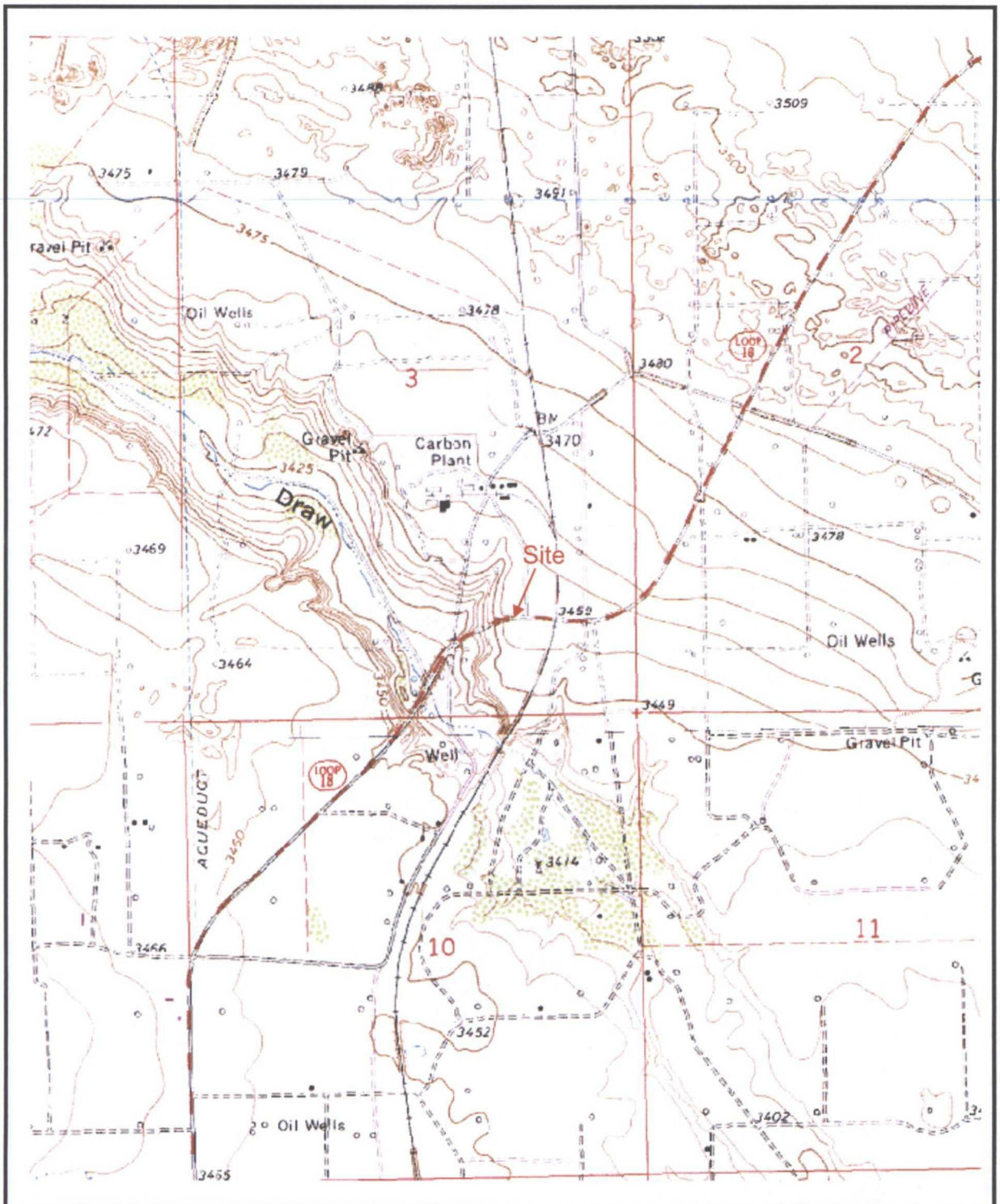
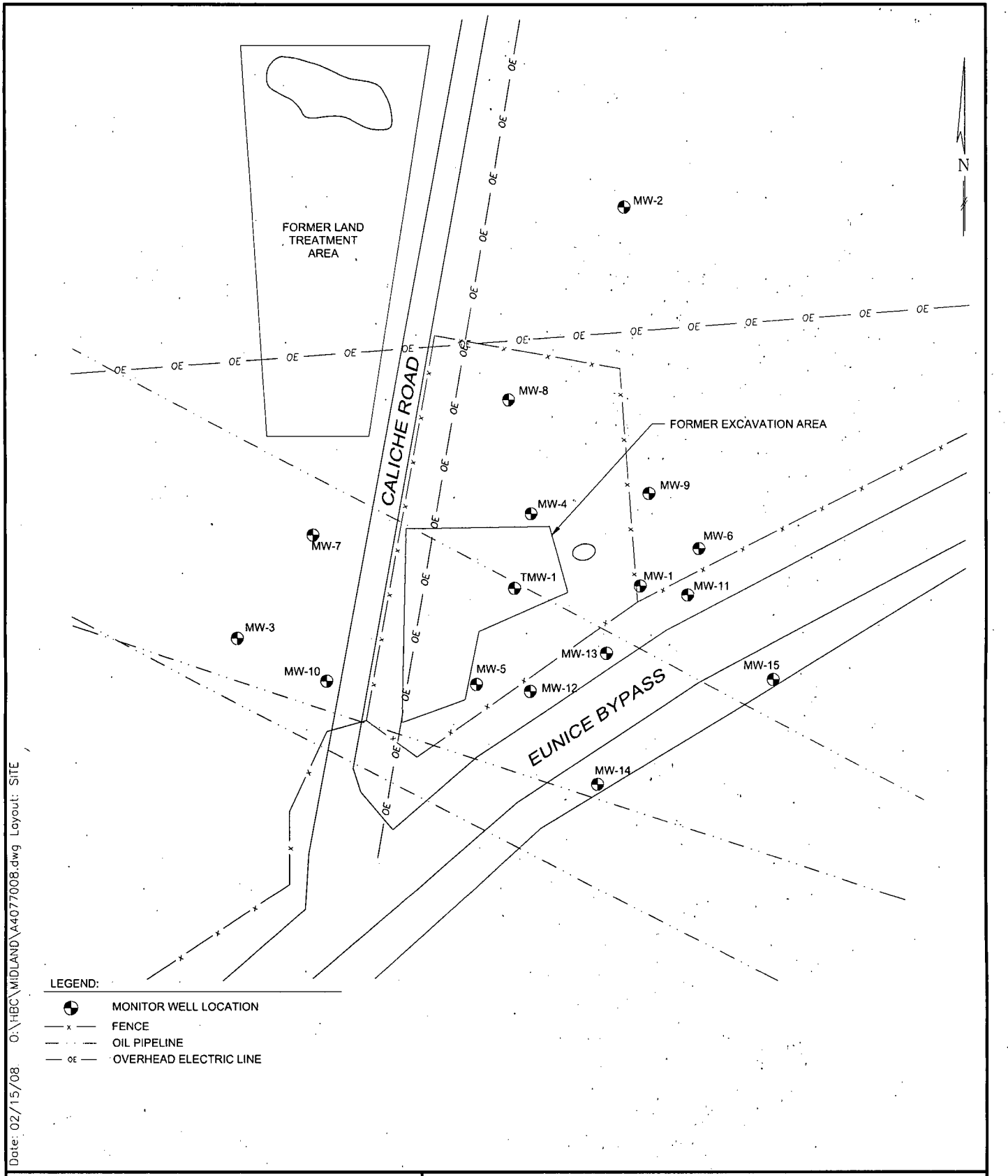
Terracon Consultants, Inc.
1211 West Florida Avenue
Midland, Texas 79701
bwbole@terracon.com

APPENDIX A

Figure 1 – Topographic Map
Figure 2 – Site Plan
Figure 3 – Groundwater Gradient Map (02/18/11)
Figure 4 – Groundwater Gradient Map (05/25/11)
Figure 5 – Groundwater Gradient Map (08/18/11)
Figure 6 – Groundwater Gradient Map (11/17/11)
Figure 7 – Groundwater Contaminant Concentration Map (02/18/11)
Figure 8 – Groundwater Contaminant Concentration Map (05/25/11)
Figure 9 – Groundwater Contaminant Concentration Map (08/18/11)
Figure 10 – Groundwater Contaminant Concentration Map (11/17/11)



USGS TOPOGRAPHIC QUADRANGLE MAP Hobbs SW, NM			**Livingston Line to Hugh - P. Sims** NE 1/4 of SE 1/4, Sec. 3, T21S, R37E NMOCD File Number: 1R-0398 Eunice, Lea County, New Mexico
Dated: 1979 SCALE: 1" = 1,600'	↑ N	Terracon	**FIGURE 1: TOPOGRAPHIC MAP**
PROJECT NO. A4077008			



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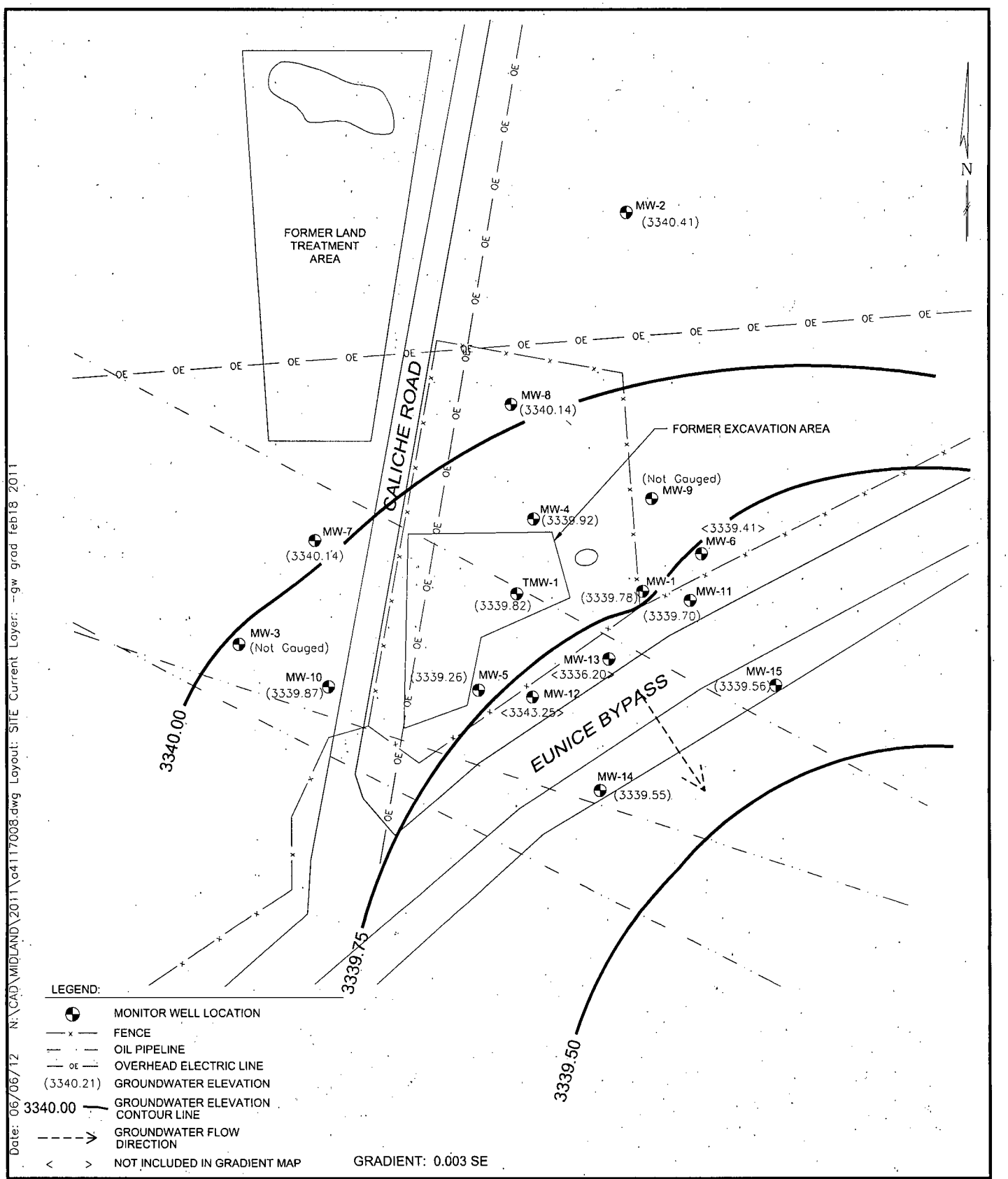
PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4077008**

FIGURE 2: SITE PLAN



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SRS# 2001-11005, NMOCD File# 1R-0398

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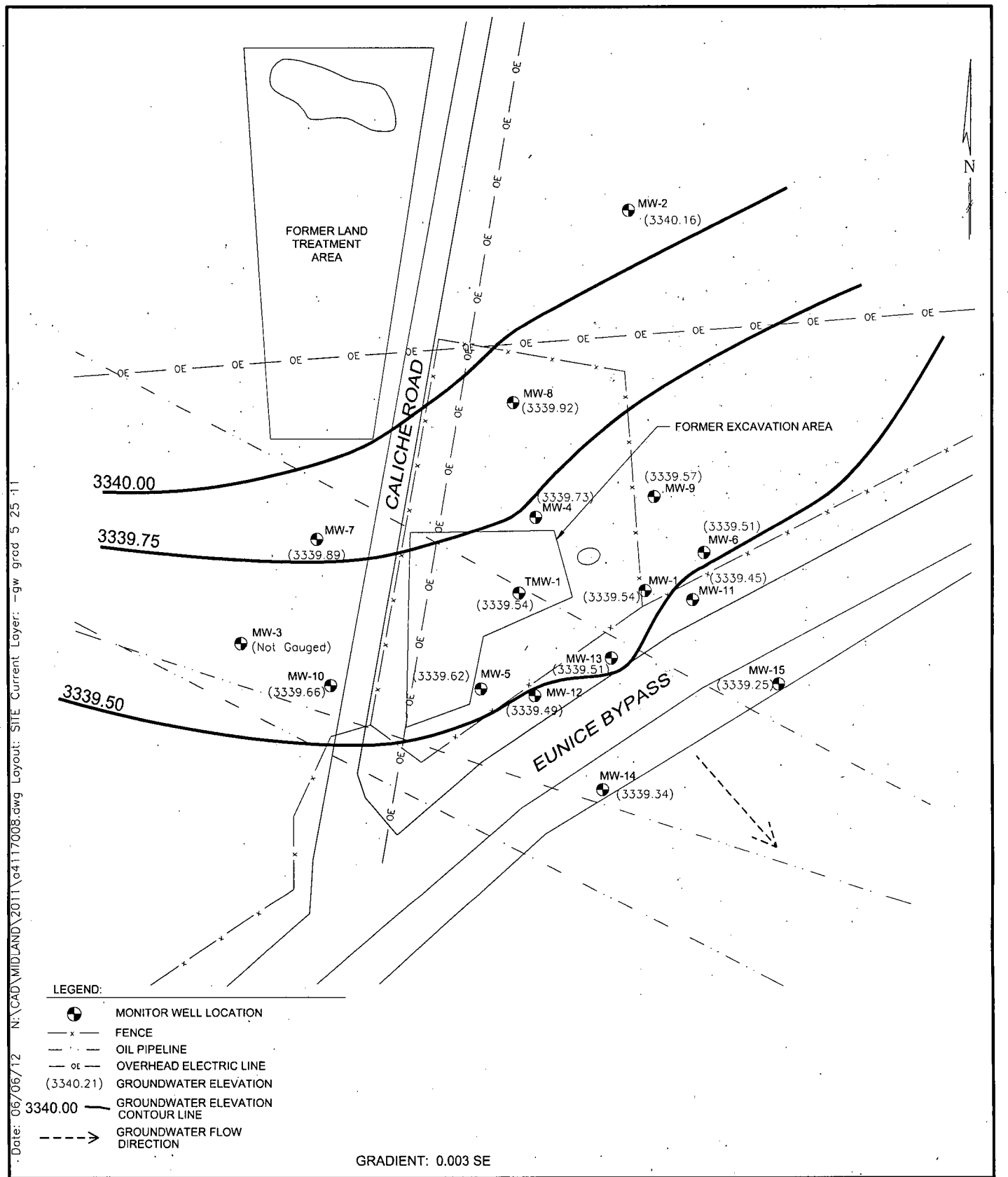
FIGURE 3: GROUNDWATER GRADIENT MAP (02/18/2011)



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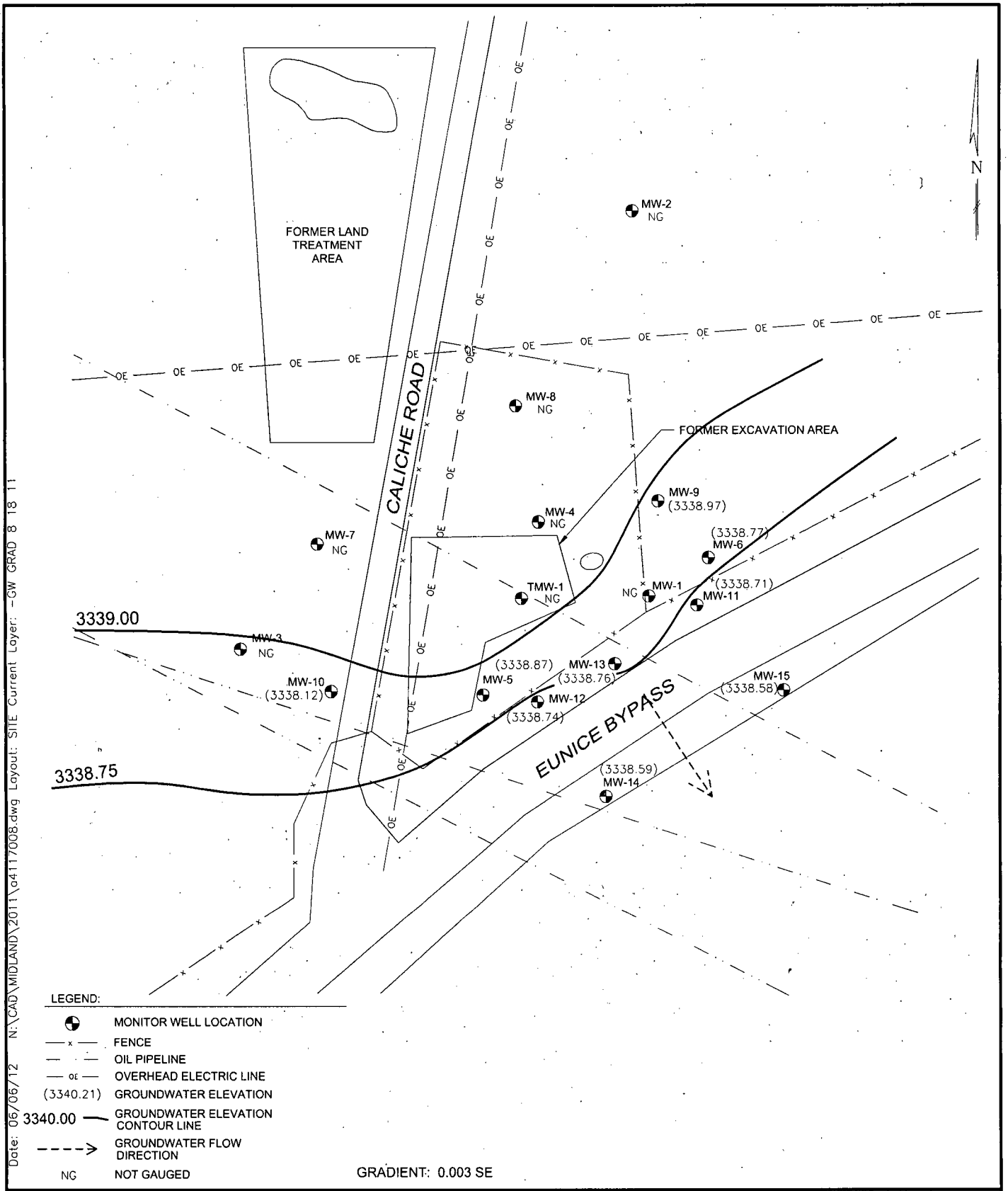
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4117008**

FIGURE 4: GROUNDWATER GRADIENT MAP (05/25/2011)



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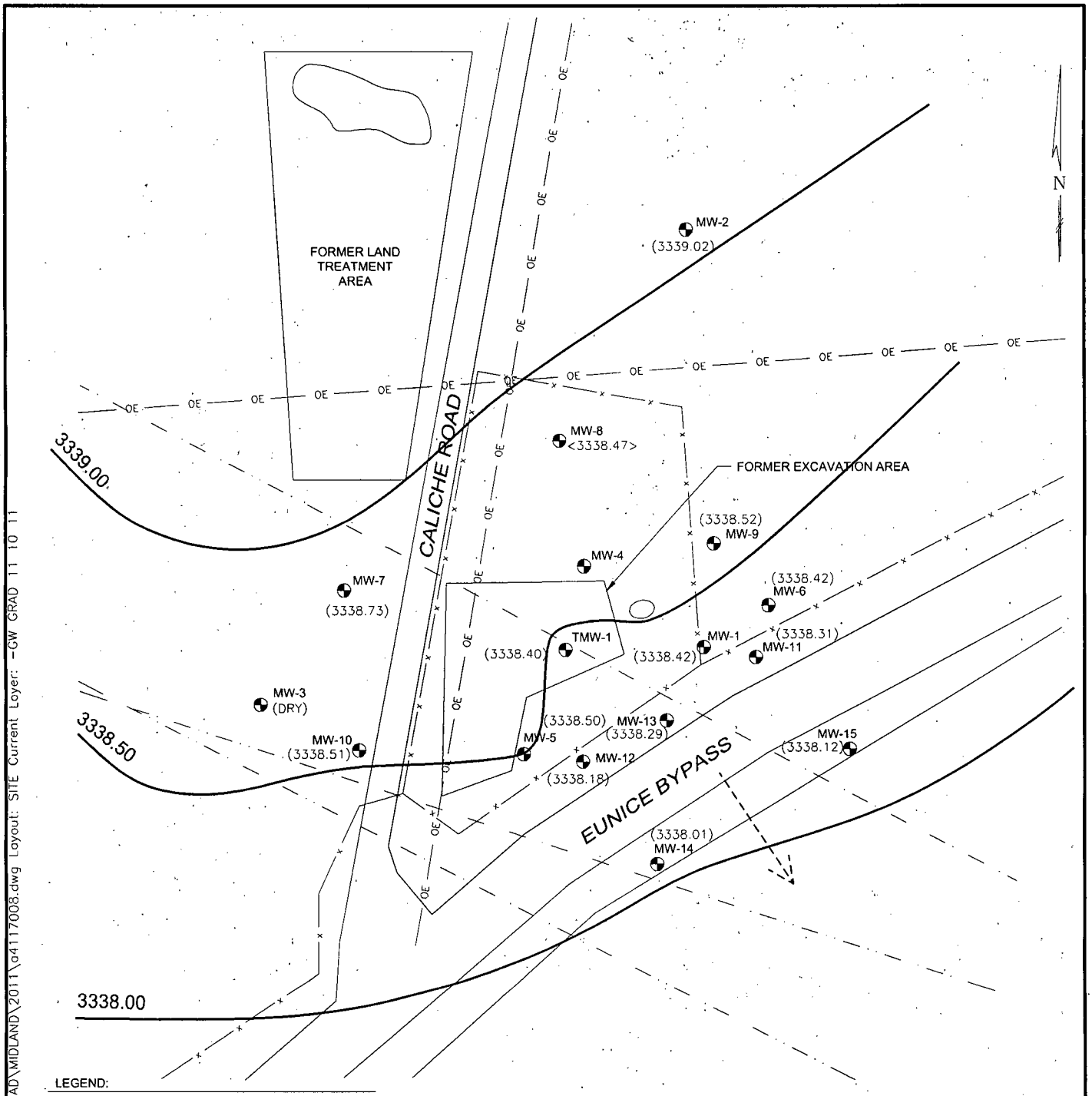
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4117008**

FIGURE 5: GROUNDWATER GRADIENT MAP (8/18/11)



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OVERHEAD ELECTRIC LINE
- (3340.21) GROUNDWATER ELEVATION
- 3340.00 GROUNDWATER ELEVATION CONTOUR LINE
- GROUNDWATER FLOW DIRECTION
- < > NOT INCLUDED IN GRADIENT MAP

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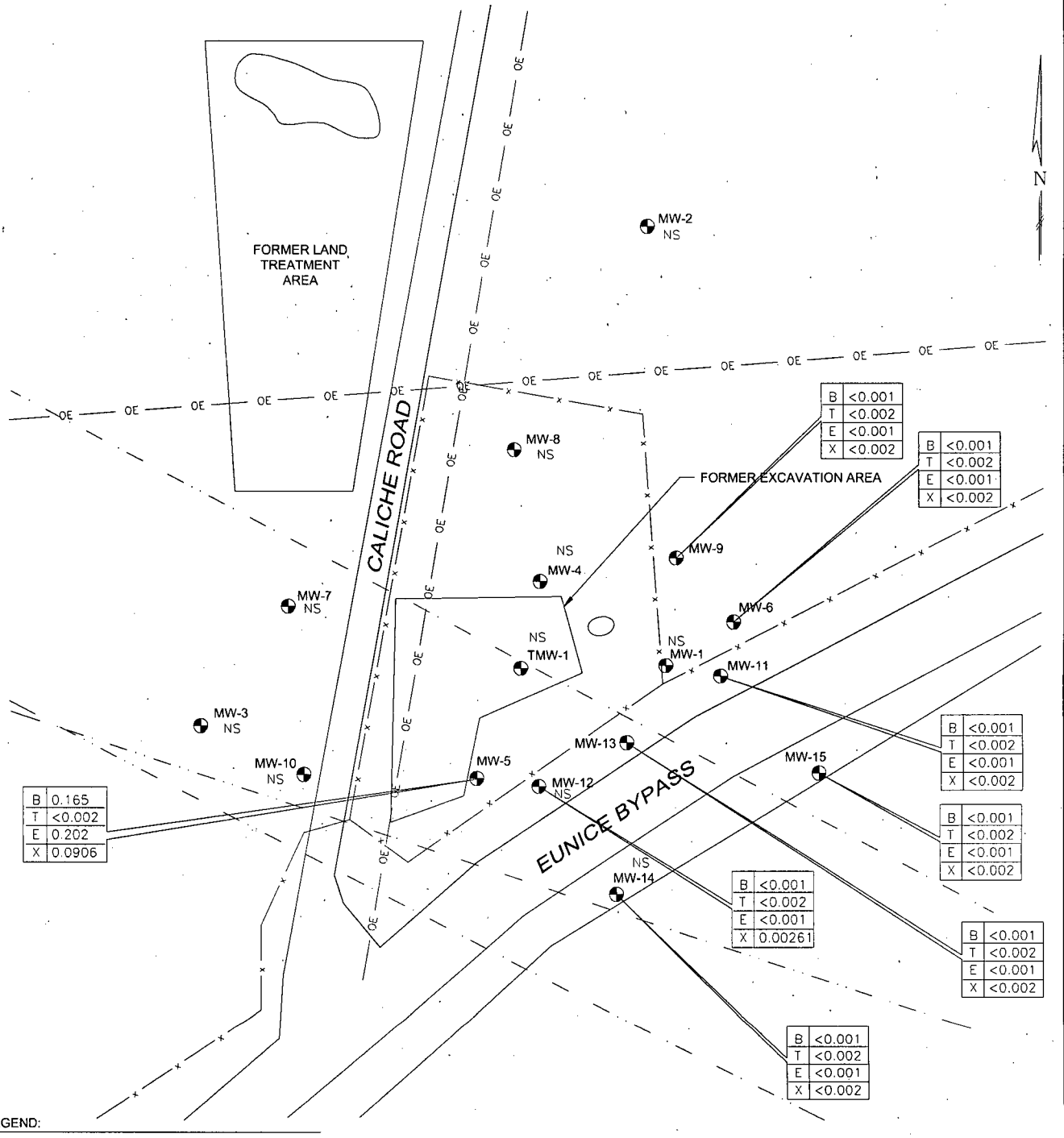
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4117008**

FIGURE 6: GROUNDWATER GRADIENT MAP (11/10/11)



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OVERHEAD ELECTRIC LINE

B BENZENE
T TOLUENE
E ETHYLBENZENE
X TOTAL XYLENES

CONCENTRATIONS ARE IN mg/L

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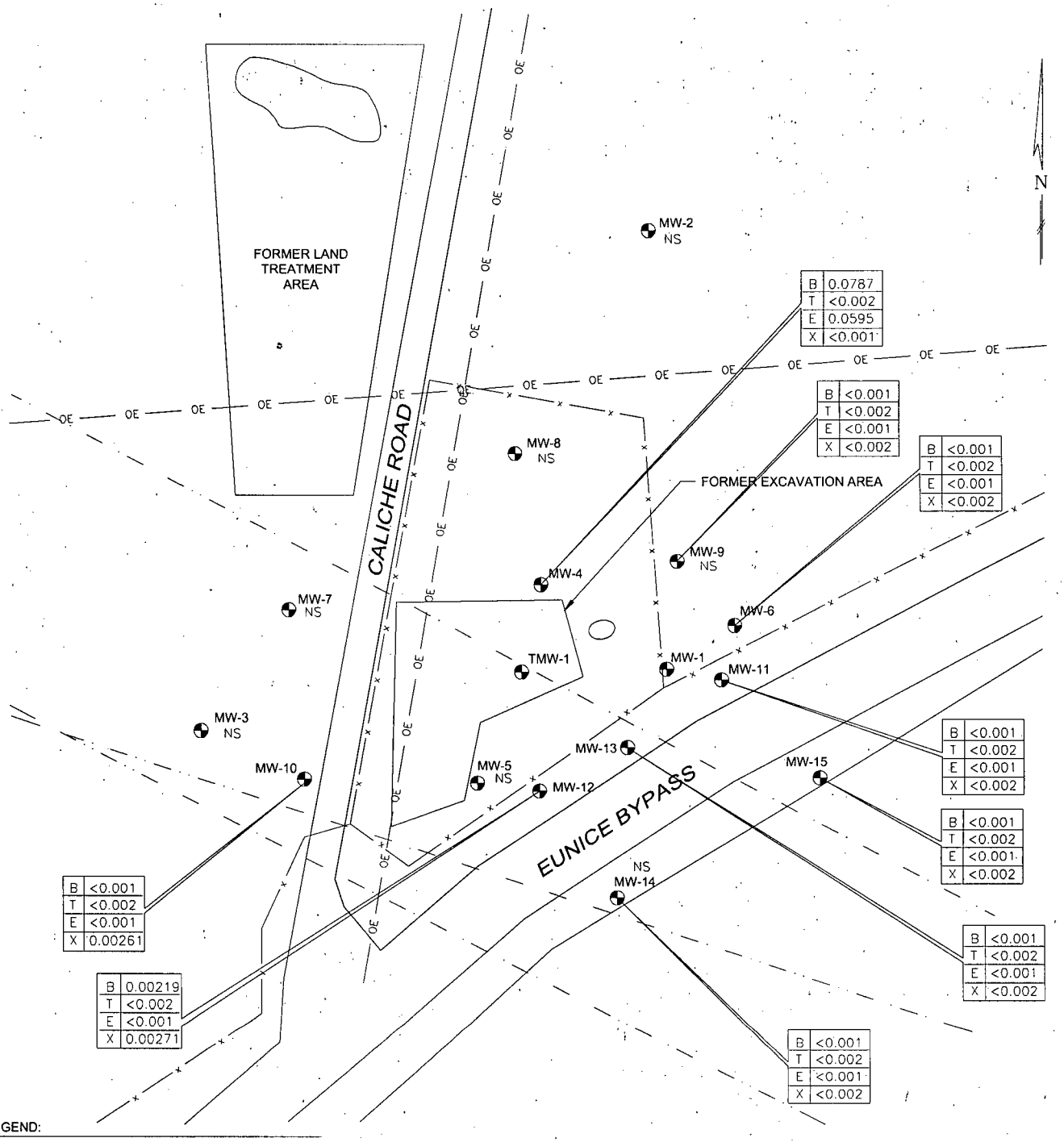
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4117008**

FIGURE 7: GROUNDWATER CONTAMINANT CONCENTRATION MAP (2/18/11)



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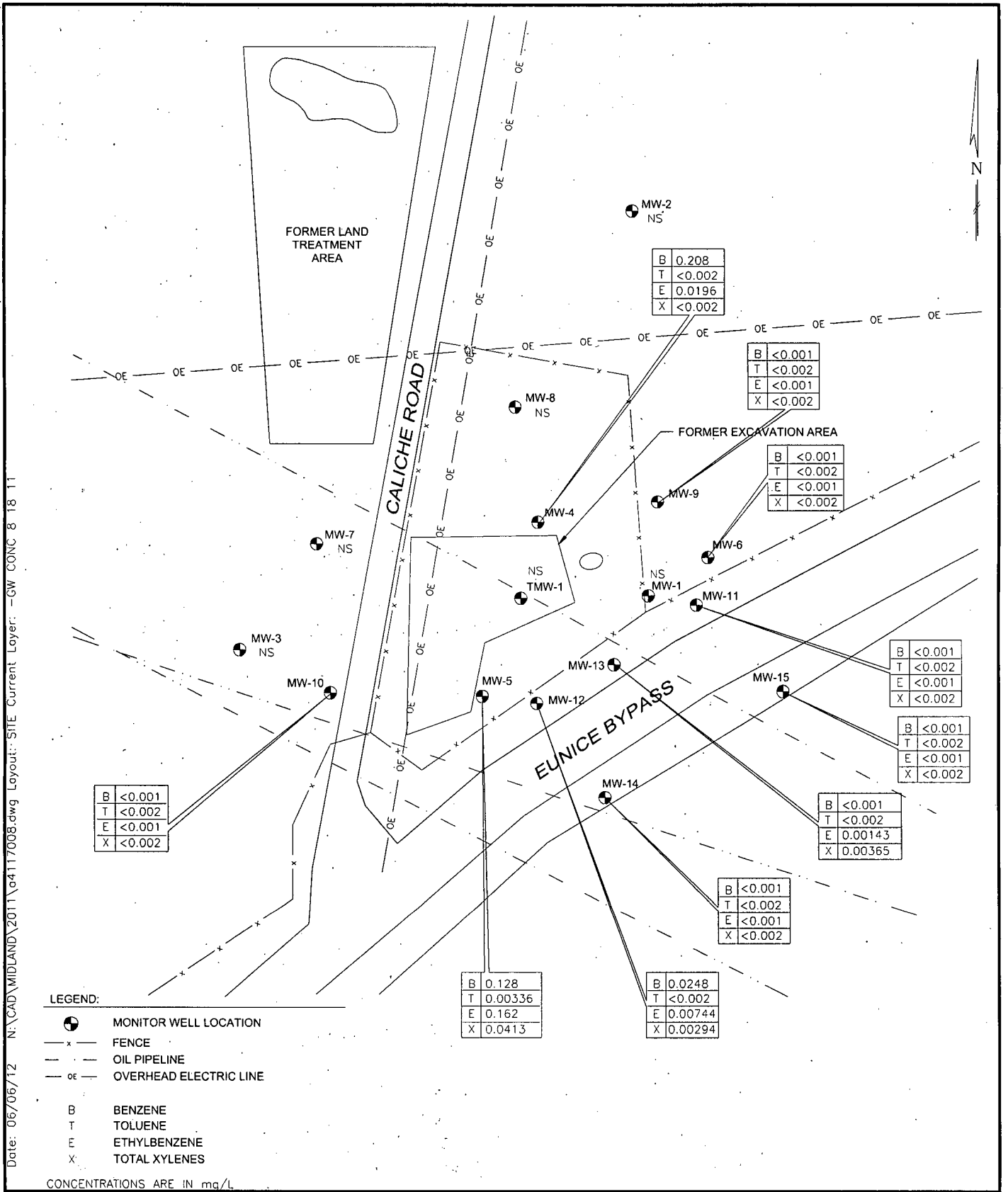
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4117008**

FIGURE 8: GROUNDWATER CONTAMINANT CONCENTRATION MAP (5/25/11)



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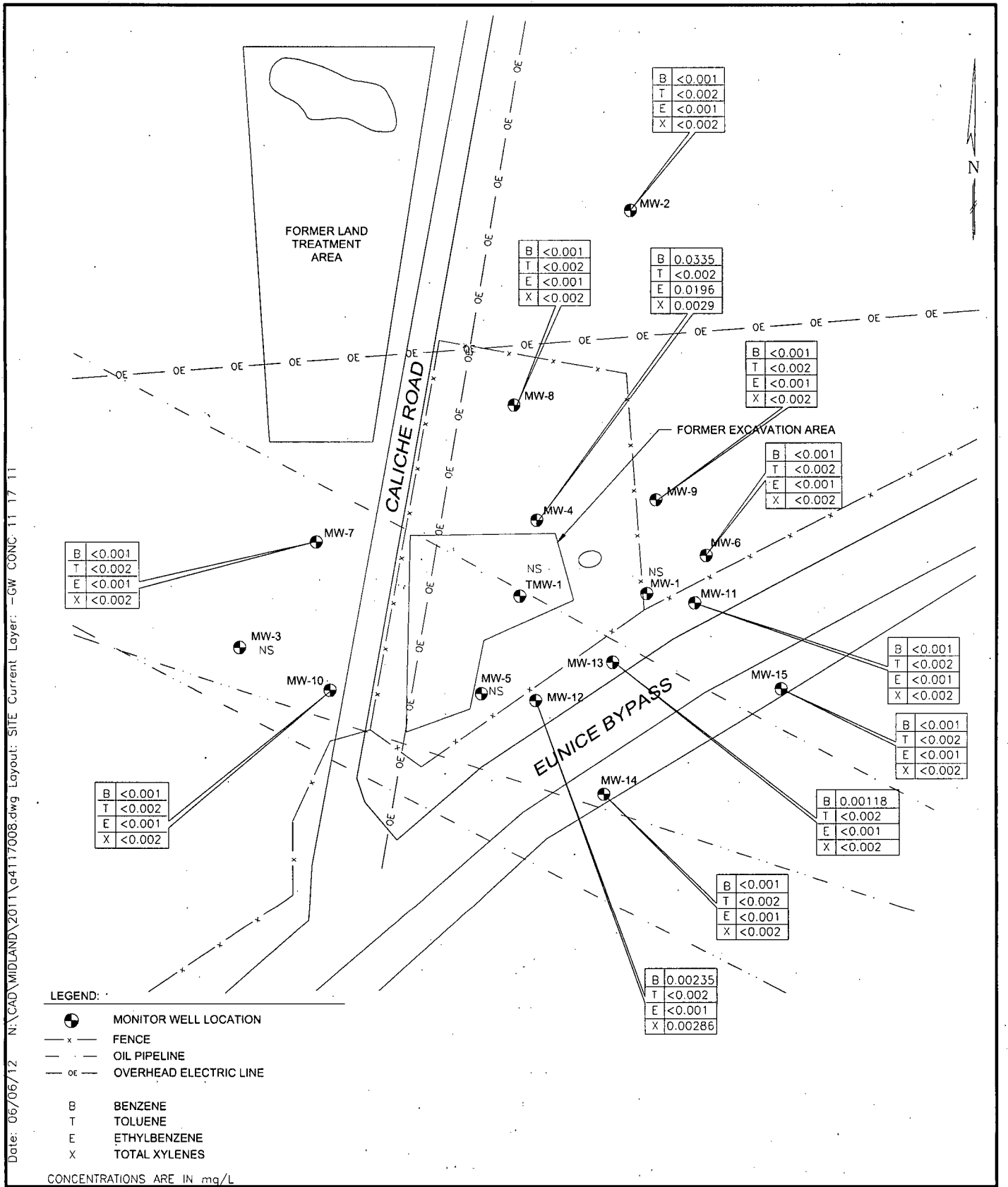
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4117008**

FIGURE 9: GROUNDWATER CONTAMINANT CONCENTRATION MAP (8-18-11)



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SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4117008**

FIGURE 10: GROUNDWATER CONTAMINANT CONCENTRATION MAP (11/17/11)

APPENDIX B

Tables

Table 1

GROUNDWATER ELEVATION AND PSH 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
Terracon Project Number A4117008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW-1	12/27/07	3,374.23	0.00	32.44	0.00	3,341.79	0.00	0.00
MW-1	01/18/08		0.00	32.56	0.00	3,341.67	0.00	0.00
MW-1	02/20/08		0.00	32.58	0.00	3,341.65	0.00	0.00
MW-1	02/29/08		0.00	32.57	0.00	3,341.66	0.00	0.00
MW-1	03/11/08		0.00	32.66	0.00	3,341.57	0.00	0.00
MW-1	04/30/08		0.00	32.65	0.00	3,341.58	0.00	0.00
MW-1	05/28/08		0.00	32.78	0.00	3,341.45	0.00	0.00
MW-1	06/25/08		0.00	32.92	0.00	3,341.31	0.00	0.00
MW-1	07/02/08		0.00	32.97	0.00	3,341.26	0.10	20.00
MW-1	07/07/08		0.00	33.00	0.00	3,341.23	0.10	10.00
MW-1	07/14/08		0.00	33.07	0.00	3,341.16	0.10	25.00
MW-1	07/22/08		0.00	33.09	0.00	3,341.14	0.10	10.00
MW-1	07/30/08		0.00	29.15	0.00	3,345.08	0.00	0.00
MW-1	08/05/08		0.00	29.24	0.00	3,344.99	0.00	15.00
MW-1	08/14/08		0.00	33.25	0.00	3,340.98	0.10	5.00
MW-1	08/21/08		0.00	33.12	0.00	3,341.11	0.00	0.00
MW-1	08/27/08		0.00	33.13	0.00	3,341.10	0.00	25.00
MW-1	09/03/08							25.00
MW-1	09/20/08		0.00	33.07	0.00	3,341.16	0.00	30.00
MW-1	09/29/08		0.00	33.11	0.00	3,341.12	0.00	40.00
MW-1	11/06/08		0.00	33.08	0.00	3,341.15	0.00	0.00
MW-1	11/15/08		0.00	33.11	0.00	3,341.12	0.00	25.00
MW-1	11/24/08		0.00	33.04	0.00	3,341.19	0.00	50.00
MW-1	11/26/08		0.00	33.04	0.00	3,341.19	0.00	50.00
MW-1	12/20/08		0.00	33.09	0.00	3,341.14	0.00	50.00
MW-1	01/16/09		0.00	33.13	0.00	3,341.10	0.00	0.00
MW-1	02/09/09		0.00	33.10	0.00	3,341.13	0.00	0.00
MW-1	02/25/09		0.00		0.00		0.00	50.00
MW-1	03/05/09		0.00		0.00		0.00	50.00
MW-1	03/11/09		0.00		0.00		0.00	50.00
MW-1	03/19/09		0.00		0.00		0.00	50.00
MW-1	04/08/09		0.00	33.21	0.00	3,341.02	0.00	50.00
MW-1	04/16/09		0.00	33.25	0.00	3,340.98	0.00	50.00
MW-1	04/22/09		0.00	32.32	0.00	3,341.91	0.00	40.00
MW-1	04/29/08		0.00	33.24	0.00	3,340.99	0.00	50.00
MW-1	05/06/09		0.00	33.85	0.00	3,340.38	0.00	50.00
MW-1	05/14/09		0.00	33.33	0.00	3,340.90	0.00	0.00
MW-1	07/08/09		0.00	33.51	0.00	3,340.72	0.00	30.00
MW-1	07/24/09		0.00	33.53	0.00	3,340.70	0.00	0.00
MW-1	08/04/09		0.00	34.35	0.00	3,339.88	0.00	55.00
MW-1	08/13/09		0.00	33.58	0.00	3,340.65	0.00	0.00
MW-1	08/19/09		0.00	33.24	0.00	3,340.99	0.00	45.00
MW-1	09/01/09		33.68	33.72	0.04	3,340.54	5.00	49.50
MW-1	09/22/09		33.79	33.81	0.02	3,340.44	0.25	5.00
MW-1	10/12/09		33.84	33.85	0.01	3,340.39	0.00	23.00
MW-1	10/30/09			33.94	0.00	3,340.29	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH 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
Terracon Project Number A4117008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW-1	11/10/09			33.97	0.00	3,340.26	1.00	24.00
MW-1	01/08/10			33.93	0.00	3,340.30	0.00	15.00
MW-1	01/22/10			33.94	0.00	3,340.29	0.00	10.00
MW-1	01/26/10			33.09	0.00	3,341.14	0.00	0.00
MW-1	02/03/10			34.08	0.00	3,340.15	0.00	0.00
MW-1	02/10/10			33.97	0.00	3,340.26	0.00	30.00
MW-1	02/22/10			33.92	0.00	3,340.31	0.00	30.00
MW-1	03/09/10			33.95	0.00	3,340.28	0.00	50.00
MW-1	03/24/10			34.00	0.00	3,340.23	0.00	50.00
MW-1	04/12/10			33.92	0.00	3,340.31	0.00	50.00
MW-1	04/27/10			34.93	0.00	3,339.30	0.00	50.00
MW-1	05/27/10			34.09	0.00	3,340.14	0.00	0.00
MW-1	06/21/10			34.15	0.00	3,340.08	0.00	45.00
MW-1	07/07/10			34.13	0.00	3,340.10	0.00	50.00
MW-1	07/20/10			34.00	0.00	3,340.23	0.00	55.00
MW-1	08/03/10			34.16	0.00	3,340.07	0.00	50.00
MW-1	08/16/10			34.23	0.00	3,340.00	0.00	45.00
MW-1	09/02/10			34.28	0.00	3,339.95	0.00	30.00
MW-1	09/17/10			34.36	0.00	3,339.87	0.00	30.00
MW-1	10/05/10			34.43	0.00	3,339.80	0.00	20.00
MW-1	11/11/10			34.55	0.00	3,339.68	0.00	0.00
MW-1	12/15/10		34.39	34.42	0.03	3,339.84	0.00	0.00
MW-1	12/29/10		34.36	34.40	0.04	3,339.86	0.00	20.00
MW-1	02/18/11		34.44	34.50	0.06	3,339.78	0.00	0.00
MW-1	03/02/11		34.45	34.65	0.20	3,339.75	0.10	25.00
MW-1	03/16/11		34.57	34.64	0.07	3,339.65	0.10	20.00
MW-1	03/29/11		34.51	34.54	0.03	3,339.72	0.00	30.00
MW-1	04/15/11		34.56	34.57	0.01	3,339.67	0.00	20.00
MW-1	04/18/11			34.53	0.00	3,339.70	0.00	25.00
MW-1	04/29/11			34.58	0.00	3,339.65	0.00	20.00
MW-1	05/06/11			34.58	0.00	3,339.65	0.00	20.00
MW-1	05/20/11			34.65	0.00	3,339.58	0.00	25.00
MW-1	05/25/11			34.69	0.00	3,339.54	0.00	0.00
MW-1	06/01/11			34.75	0.00	3,339.48	0.00	20.00
MW-1	06/14/11			25.60	0.00	3,348.63	0.00	0.00
MW-1	07/30/11			35.24	0.00	3,338.99	0.00	0.00
MW-1	09/20/11		35.59	35.60	0.01	3,338.64	0.00	0.00
MW-1	10/03/11		35.75	36.05	0.30	3,338.44	<0.10	0.00
MW-1	10/28/11		35.80	35.88	0.08	3,338.42	0.00	0.00
MW-1	11/10/11		35.80	35.87	0.07	3,338.42	0.00	20.00
MW-1	12/09/11			36.30	0.00	3,337.93	0.00	20.00
MW-2	11/16/07	3,378.27		35.88	0.00	3,342.39	0.00	0.00
MW-2	02/29/08			36.04	0.00	3,342.23	0.00	0.00
MW-2	05/28/08			36.15	0.00	3,342.12	0.00	0.00
MW-2	08/21/08			36.65	0.00	3,341.62	0.00	0.00

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Terracon Project Number A4117008

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WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW-2	11/06/08			36.49	0.00	3,341.78	0.00	0.00
MW-2	02/09/09			36.55	0.00	3,341.72	0.00	0.00
MW-2	05/14/09			36.70	0.00	3,341.57	0.00	0.00
MW-2	08/12/09			37.05	0.00	3,341.22	0.00	0.00
MW-2	11/10/09			37.34	0.00	3,340.93	0.00	0.00
MW-2	02/03/10			37.35	0.00	3,340.92	0.00	0.00
MW-2	05/27/10			37.43	0.00	3,340.84	0.00	0.00
MW-2	08/16/10			37.64	0.00	3,340.63	0.00	0.00
MW-2	11/11/10			37.81	0.00	3,340.46	0.00	0.00
MW-2	02/18/11			37.86	0.00	3,340.41	0.00	0.00
MW-2	05/25/11			38.11	0.00	3,340.16	0.00	0.00
MW-2	10/03/11			39.14	0.00	3,339.13	0.00	0.00
MW-2	10/28/11			39.22	0.00	3,339.05	0.00	0.00
MW-2	11/10/11			39.25	0.00	3,339.02	0.00	0.00
MW-2	12/09/11			39.38	0.00	3,338.89	0.00	0.00
MW-3	11/16/07	3,367.36		25.28	0.00	3,342.08	0.00	0.00
MW-3	02/29/08			25.44	0.00	3,341.92	0.00	0.00
MW-3	05/28/08			25.55	0.00	3,341.81	0.00	0.00
MW-3	08/21/08			26.11	0.00	3,341.25	0.00	0.00
MW-3	11/06/08			25.89	0.00	3,341.47	0.00	0.00
MW-3	02/09/09			25.98	0.00	3,341.38	0.00	0.00
MW-3	05/14/09			26.18	0.00	3,341.18	0.00	0.00
MW-3	08/13/09			26.48	0.00	3,340.88	0.00	0.00
MW-3	11/10/09			26.83	0.00	3,340.53	0.00	0.00
MW-3	02/03/10			26.80	0.00	3,340.56	0.00	0.00
MW-3	05/25/11			30.79	0.00	3,336.57	0.00	0.00
MW-3	05/27/10			26.88	0.00	3,340.48	0.00	0.00
MW-3	08/16/10			27.13	0.00	3,340.23	0.00	0.00
MW-3	11/11/10			27.15	0.00	3,340.21	0.00	0.00
MW-3	09/20/11			dry	0.00		0.00	0.00
MW-3	10/03/11			dry	0.00		0.00	0.00
MW-3	10/28/11			dry	0.00		0.00	0.00
MW-3	11/10/11			dry	0.00		0.00	0.00
MW-3	12/09/11			dry	0.00		0.00	0.00
MW-4	12/27/07	3,372.73		30.69	0.00	3,342.04	0.00	0.00
MW-4	01/18/08			30.78	0.00	3,341.95	0.00	0.00
MW-4	02/20/08			31.83	0.00	3,340.90	0.00	0.00
MW-4	02/29/08			30.86	0.00	3,341.87	0.00	0.00
MW-4	04/30/08			30.82	0.00	3,341.91	0.00	0.00
MW-4	05/28/08			31.09	0.00	3,341.64	0.00	0.00
MW-4	06/25/08			37.66	0.00	3,335.07	0.00	0.00
MW-4	07/02/08			31.28	0.00	3,341.45	0.00	20.00
MW-4	07/07/08			31.34	0.00	3,341.39	0.00	10.00
MW-4	07/14/08			34.51	0.00	3,338.22	0.00	25.00

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WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW-4	07/22/08			31.39	0.00	3,341.34	0.00	10.00
MW-4	07/30/08			31.40	0.00	3,341.33	0.00	10.00
MW-4	08/05/08			31.50	0.00	3,341.23	0.00	10.00
MW-4	08/14/08			31.55	0.00	3,341.18	0.00	5.00
MW-4	08/21/08			31.43	0.00	3,341.30	0.00	0.00
MW-4	08/27/08			31.42	0.00	3,341.31	0.00	25.00
MW-4	09/03/08							25.00
MW-4	09/20/08			31.34	0.00	3,341.39	0.00	30.00
MW-4	09/29/08			31.34	0.00	3,341.39	0.00	40.00
MW-4	11/06/08			31.38	0.00	3,341.35	0.00	0.00
MW-4	11/15/08			31.40	0.00	3,341.33	0.00	50.00
MW-4	11/24/08			31.35	0.00	3,341.38	0.00	25.00
MW-4	11/26/08			31.34	0.00	3,341.39	0.00	25.00
MW-4	12/20/08			31.39	0.00	3,341.34	0.00	50.00
MW-4	01/16/09			31.42	0.00	3,341.31	0.00	0.00
MW-4	02/09/09			31.39	0.00	3,341.34	0.00	0.00
MW-4	02/25/09				0.00		0.00	50.00
MW-4	03/05/09				0.00		0.00	50.00
MW-4	03/11/09				0.00		0.00	50.00
MW-4	03/19/09				0.00		0.00	50.00
MW-4	04/08/09			31.10	0.00	3,341.63	0.00	50.00
MW-4	04/16/09			31.50	0.00	3,341.23	0.00	35.00
MW-4	04/22/09			31.57	0.00	3,341.16	0.00	50.00
MW-4	04/29/08				0.00		0.00	45.00
MW-4	05/06/09				0.00		0.00	50.00
MW-4	05/14/09			31.58	0.00	3,341.15	0.00	0.00
MW-4	07/08/09			31.79	0.00	3,340.94	0.00	35.00
MW-4	07/24/09			31.85	0.00	3,340.88	0.00	0.00
MW-4	08/04/09			31.85	0.00	3,340.88	0.00	55.00
MW-4	08/12/09			31.96	0.00	3,340.77	0.00	0.00
MW-4	08/19/09			31.90	0.00	3,340.83	0.00	32.00
MW-4	09/01/09			32.00	0.00	3,340.73	0.00	53.50
MW-4	09/22/09			32.08	0.00	3,340.65	0.00	10.00
MW-4	10/12/09			32.13	0.00	3,340.60	0.00	17.00
MW-4	10/30/09			32.27	0.00	3,340.46	0.00	0.00
MW-4	11/10/09			32.22	0.00	3,340.51	0.00	25.00
MW-4	01/08/10			32.23	0.00	3,340.50	0.00	5.00
MW-4	01/22/10			32.17	0.00	3,340.56	0.00	10.00
MW-4	01/26/10			32.26	0.00	3,340.47	0.00	0.00
MW-4	02/03/10			32.25	0.00	3,340.48	0.00	0.00
MW-4	02/10/10			32.28	0.00	3,340.45	0.00	50.00
MW-4	03/09/10			32.20	0.00	3,340.53	0.00	30.00
MW-4	03/24/10			32.24	0.00	3,340.49	0.00	30.00
MW-4	04/12/10			32.24	0.00	3,340.49	0.00	30.00
MW-4	04/27/10			32.25	0.00	3,340.48	0.00	30.00
MW-4	05/27/10			32.28	0.00	3,340.45	0.00	0.00

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WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW-4	06/21/10			32.50	0.00	3,340.23	0.00	40.00
MW-4	07/07/10			32.40	0.00	3,340.33	0.00	50.00
MW-4	07/20/10			32.43	0.00	3,340.30	0.00	50.00
MW-4	08/03/10			32.44	0.00	3,340.29	0.00	50.00
MW-4	08/16/10			32.53	0.00	3,340.20	0.00	45.00
MW-4	09/02/10			32.67	0.00	3,340.06	0.00	50.00
MW-4	09/17/10			32.65	0.00	3,340.08	0.00	50.00
MW-4	10/05/10			32.70	0.00	3,340.03	0.00	20.00
MW-4	11/10/10			32.73	0.00	3,340.00	0.00	20.00
MW-4	12/15/10			32.71	0.00	3,340.02	0.00	20.00
MW-4	12/29/10			32.68	0.00	3,340.05	0.00	30.00
MW-4	02/18/11			32.76	0.00	3,339.97	0.00	0.00
MW-4	03/02/11			32.74	0.00	3,339.99	0.00	25.00
MW-4	03/16/11			32.73	0.00	3,340.00	0.00	20.00
MW-4	03/29/11			32.70	0.00	3,340.03	0.00	25.00
MW-4	04/15/11			32.88	0.00	3,339.85	0.00	30.00
MW-4	04/18/11			32.85	0.00	3,339.88	0.00	30.00
MW-4	04/29/11			32.85	0.00	3,339.88	0.00	30.00
MW-4	05/06/11			32.91	0.00	3,339.82	0.00	25.00
MW-4	05/20/11			32.98	0.00	3,339.75	0.00	25.00
MW-4	05/25/11			33.00	0.00	3,339.73	0.00	0.00
MW-4	06/01/11			32.95	0.00	3,339.78	0.00	20.00
MW-4	07/30/11			33.53	0.00	3,339.20	0.00	20.00
MW-4	09/20/11		33.94	33.95	0.01	3,338.79	0.00	0.00
MW-4	10/03/11		34.06	34.10	0.04	3,338.66	0.00	0.00
MW-4	10/28/11		34.12	34.23	0.11	3,338.59	0.00	0.00
MW-4	11/10/11		34.12	34.30	0.18	3,338.58	0.00	20.00
MW-4	12/09/11		34.21	34.38	0.17	3,338.49	0.00	20.00
MW-5	12/27/07	3,370.92		29.29	0.00	3,341.63	0.10	0.00
MW-5	01/18/08			29.40	0.00	3,341.52	0.00	0.00
MW-5	02/20/08			29.43	0.00	3,341.49	0.00	0.00
MW-5	02/29/08			29.43	0.00	3,341.49	0.00	0.00
MW-5	03/11/08			29.87	0.00	3,341.05	0.00	0.00
MW-5	04/30/08			29.45	0.00	3,341.47	0.00	0.00
MW-5	05/28/08			29.55	0.00	3,341.37	0.00	0.00
MW-5	06/25/08			29.70	0.00	3,341.22	0.00	0.00
MW-5	07/02/08			29.75	0.00	3,341.17	0.00	20.00
MW-5	07/07/08			28.83	0.00	3,342.09	0.00	10.00
MW-5	07/14/08			29.82	0.00	3,341.10	0.00	25.00
MW-5	07/22/08			29.87	0.00	3,341.05	0.00	10.00
MW-5	07/30/08			29.93	0.00	3,340.99	0.00	15.00
MW-5	08/05/08			29.94	0.00	3,340.98	0.00	15.00
MW-5	08/14/08			30.06	0.00	3,340.86	0.00	5.00
MW-5	08/21/08			29.83	0.00	3,341.09	0.00	0.00
MW-5	08/27/08			29.69	0.00	3,341.23	0.00	25.00

Table 1

GROUNDWATER ELEVATION AND PSH 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
Terracon Project Number A4117008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW-5	09/03/08							25.00
MW-5	09/20/08			29.75	0.00	3,341.17	0.00	30.00
MW-5	09/29/08			29.74	0.00	3,341.18	0.00	40.00
MW-5	11/06/08			29.75	0.00	3,341.17	0.00	0.00
MW-5	11/15/08			29.89	0.00	3,341.03	0.00	50.00
MW-5	11/24/08			29.76	0.00	3,341.16	0.00	25.00
MW-5	11/26/08			29.74	0.00	3,341.18	0.00	25.00
MW-5	12/20/08			29.79	0.00	3,341.13	0.00	50.00
MW-5	01/16/09			29.84	0.00	3,341.08	0.00	0.00
MW-5	02/09/09			29.78	0.00	3,341.14	0.00	0.00
MW-5	02/25/09				0.00		0.00	50.00
MW-5	03/05/09				0.00		0.00	50.00
MW-5	03/11/09				0.00		0.00	50.00
MW-5	03/19/09				0.00		0.00	50.00
MW-5	04/08/09			29.91	0.00	3,341.01	0.00	50.00
MW-5	04/16/09			29.90	0.00	3,341.02	0.00	45.00
MW-5	04/22/09			30.02	0.00	3,340.90	0.00	30.00
MW-5	04/29/08			29.92	0.00	3,341.00	0.00	50.00
MW-5	05/06/09				0.00		0.00	50.00
MW-5	05/14/09			30.06	0.00	3,340.86	0.00	0.00
MW-5	07/08/09			30.19	0.00	3,340.73	0.00	30.00
MW-5	07/24/09			30.23	0.00	3,340.69	0.00	0.00
MW-5	08/04/09			30.28	0.00	3,340.64	0.00	55.00
MW-5	08/12/09			29.30	0.00	3,341.62	0.00	0.00
MW-5	08/19/09			30.31	0.00	3,340.61	0.00	42.00
MW-5	09/01/09			30.39	0.00	3,340.53	0.00	52.30
MW-5	09/22/09		30.48	30.49	0.01	3,340.44	0.00	10.00
MW-5	10/12/09			30.54	0.00	3,340.38	0.00	23.00
MW-5	10/30/09			29.63	0.00	3,341.29	0.00	0.00
MW-5	11/10/09			30.61	0.00	3,340.31	0.00	30.00
MW-5	01/08/10			30.62	0.00	3,340.30	0.00	5.00
MW-5	01/22/10		30.55	30.56	0.01	3,340.37	0.00	10.00
MW-5	01/26/10		30.68	0.00	0.00	3,370.92	0.00	0.00
MW-5	02/03/10			30.75	0.00	3,340.17	0.00	0.00
MW-5	02/10/10			30.66	0.00	3,340.26	0.00	30.00
MW-5	02/22/10			30.60	0.00	3,340.32	0.00	30.00
MW-5	03/09/10			30.56	0.00	3,340.36	0.00	30:00
MW-5	03/24/10			30.60	0.00	3,340.32	0.00	30.00
MW-5	04/12/10			30.60	0.00	3,340.32	0.00	30.00
MW-5	04/27/10			30.61	0.00	3,340.31	0.00	30.00
MW-5	05/27/10			30.90	0.00	3,340.02	0.00	0.00
MW-5	06/21/10			30.85	0.00	3,340.07	0.00	18.00
MW-5	07/07/10			30.75	0.00	3,340.17	0.00	20.00
MW-5	07/20/10			30.67	0.00	3,340.25	0.00	50.00
MW-5	08/03/10			30.85	0.00	3,340.07	0.00	20.00
MW-5	08/16/10			30.94	0.00	3,339.98	0.00	20.00

Table 1

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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
Terracon Project Number A4117008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW-5	09/02/10			30.97	0.00	3,339.95	0.00	30.00
MW-5	09/17/10			31.03	0.00	3,339.89	0.00	30.00
MW-5	10/05/10			31.13	0.00	3,339.79	0.00	25.00
MW-5	11/11/10			31.12	0.00	3,339.80	0.00	20.00
MW-5	12/15/10			31.00	0.00	3,339.92	0.00	30.00
MW-5	12/29/10			31.08	0.00	3,339.84	0.00	20.00
MW-5	02/18/11			31.16	0.00	3,339.76	0.00	0.00
MW-5	03/02/11			31.12	0.00	3,339.80	0.00	30.00
MW-5	03/16/11			31.31	0.00	3,339.61	0.00	20.00
MW-5	03/29/11			31.15	0.00	3,339.77	0.00	30.00
MW-5	04/15/11			31.23	0.00	3,339.69	0.00	20.00
MW-5	04/18/11			31.11	0.00	3,339.81	0.00	20.00
MW-5	04/29/11			31.16	0.00	3,339.76	0.00	20.00
MW-5	05/06/11			31.17	0.00	3,339.75	0.00	25.00
MW-5	05/20/11			31.26	0.00	3,339.66	0.00	25.00
MW-5	05/25/11			31.30	0.00	3,339.62	0.00	0.00
MW-5	06/01/11			31.34	0.00	3,339.58	0.00	25.00
MW-5	08/18/11			32.05	0.00	3,338.87	0.00	0.00
MW-5	09/20/11			32.23	0.00	3,338.69	0.00	0.00
MW-5	10/03/11			32.35	0.00	3,338.57	0.00	0.00
MW-5	10/28/11			32.45	0.00	3,338.47	0.00	0.00
MW-5	11/10/11			32.42	0.00	3,338.50	0.00	20.00
MW-5	12/09/11			32.50	0.00	3,338.42	0.00	20.00
MW-6	11/16/07	3,377.02		35.22	0.00	3,341.80	0.00	0.00
MW-6	02/29/08			35.36	0.00	3,341.66	0.00	0.00
MW-6	03/11/08			35.37	0.00	3,341.65	0.00	0.00
MW-6	05/28/08			35.46	0.00	3,341.56	0.00	0.00
MW-6	08/21/08			35.99	0.00	3,341.03	0.00	0.00
MW-6	11/06/08			35.94	0.00	3,341.08	0.00	0.00
MW-6	02/09/09			35.91	0.00	3,341.11	0.00	0.00
MW-6	05/14/09			35.96	0.00	3,341.06	0.00	0.00
MW-6	08/12/09			36.53	0.00	3,340.49	0.00	0.00
MW-6	11/10/09			36.77	0.00	3,340.25	0.00	0.00
MW-6	02/03/10			36.77	0.00	3,340.25	0.00	0.00
MW-6	05/27/10			36.83	0.00	3,340.19	0.00	0.00
MW-6	08/16/10			37.12	0.00	3,339.90	0.00	0.00
MW-6	11/11/10			37.29	0.00	3,339.73	0.00	0.00
MW-6	02/18/11			37.61	0.00	3,339.41	0.00	0.00
MW-6	05/25/11			37.51	0.00	3,339.51	0.00	0.00
MW-6	08/18/11			38.25	0.00	3,338.77	0.00	0.00
MW-6	09/20/11			38.40	0.00	3,338.62	0.00	0.00
MW-6	10/03/11			38.54	0.00	3,338.48	0.00	0.00
MW-6	10/28/11			38.60	0.00	3,338.42	0.00	0.00
MW-6	11/10/11			38.60	0.00	3,338.42	0.00	0.00
MW-6	12/09/11			38.70	0.00	3,338.32	0.00	0.00

Table 1

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Terracon Project Number A4117008

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WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW-7	11/16/07	3,369.47		27.26	0.00	3,342.21	0.00	0.00
MW-7	02/29/08			27.43	0.00	3,342.04	0.00	0.00
MW-7	05/28/08			27.54	0.00	3,341.93	0.00	0.00
MW-7	08/21/08			28.09	0.00	3,341.38	0.00	0.00
MW-7	11/06/08			27.89	0.00	3,341.58	0.00	0.00
MW-7	02/09/09			27.97	0.00	3,341.50	0.00	0.00
MW-7	05/14/09			28.29	0.00	3,341.18	0.00	0.00
MW-7	08/13/09			28.46	0.00	3,341.01	0.00	0.00
MW-7	11/10/09			28.80	0.00	3,340.67	0.00	0.00
MW-7	02/03/10			28.80	0.00	3,340.67	0.00	0.00
MW-7	05/27/10			28.87	0.00	3,340.60	0.00	0.00
MW-7	08/16/10			29.12	0.00	3,340.35	0.00	0.00
MW-7	11/11/10			29.31	0.00	3,340.16	0.00	0.00
MW-7	02/18/11			29.33	0.00	3,340.14	0.00	0.00
MW-7	05/25/11			29.58	0.00	3,339.89	0.00	0.00
MW-7	09/20/11			30.56	0.00	3,338.91	0.00	0.00
MW-7	10/03/11			30.66	0.00	3,338.81	0.00	0.00
MW-7	10/28/11			30.73	0.00	3,338.74	0.00	0.00
MW-7	11/10/11			30.74	0.00	3,338.73	0.00	0.00
MW-7	12/09/11			30.77	0.00	3,338.70	0.00	0.00
MW-8	11/16/07	3,373.77		31.58	0.00	3,342.19	0.00	0.00
MW-8	02/29/08			31.72	0.00	3,342.05	0.00	0.00
MW-8	05/28/08			31.96	0.00	3,341.81	0.00	0.00
MW-8	08/21/08			32.33	0.00	3,341.44	0.00	0.00
MW-8	11/06/08			32.19	0.00	3,341.58	0.00	0.00
MW-8	02/09/09			32.27	0.00	3,341.50	0.00	0.00
MW-8	05/14/09			32.52	0.00	3,341.25	0.00	0.00
MW-8	08/12/09			32.78	0.00	3,340.99	0.00	0.00
MW-8	11/10/09			33.09	0.00	3,340.68	0.00	0.00
MW-8	02/03/10			33.09	0.00	3,340.68	0.00	0.00
MW-8	05/27/10			33.16	0.00	3,340.61	0.00	0.00
MW-8	08/16/10			33.39	0.00	3,340.38	0.00	0.00
MW-8	11/11/10			33.59	0.00	3,340.18	0.00	0.00
MW-8	02/18/11			33.63	0.00	3,340.14	0.00	0.00
MW-8	05/25/11			33.85	0.00	3,339.92	0.00	0.00
MW-8	09/20/11			34.80	0.00	3,338.97	0.00	0.00
MW-8	10/03/11			34.92	0.00	3,338.85	0.00	0.00
MW-8	10/28/11			35.00	0.00	3,338.77	0.00	0.00
MW-8	11/10/11			35.30	0.00	3,338.47	0.00	0.00
MW-8	12/09/11			35.10	0.00	3,338.67	0.00	0.00
MW-9	11/16/07	3,375.92		34.02	0.00	3,341.90	0.00	0.00
MW-9	02/29/08			34.18	0.00	3,341.74	0.00	0.00
MW-9	05/28/08			34.45	0.00	3,341.47	0.00	0.00

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Terracon Project Number A4117008

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WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW-9	08/21/08			34.79	0.00	3,341.13	0.00	0.00
MW-9	11/06/08			34.84	0.00	3,341.08	0.00	0.00
MW-9	02/09/09			34.71	0.00	3,341.21	0.00	0.00
MW-9	05/14/09			34.23	0.00	3,341.69	0.00	0.00
MW-9	08/12/09			35.16	0.00	3,340.76	0.00	0.00
MW-9	11/10/09			35.51	0.00	3,340.41	0.00	0.00
MW-9	02/03/10			35.51	0.00	3,340.41	0.00	0.00
MW-9	05/27/10			35.58	0.00	3,340.34	0.00	0.00
MW-9	08/16/10			35.03	0.00	3,340.89	0.00	0.00
MW-9	11/11/10			35.98	0.00	3,339.94	0.00	0.00
MW-9	02/18/11							
MW-9	05/25/11			36.35	0.00	3,339.57	0.00	0.00
MW-9	08/18/11			36.95	0.00	3,338.97	0.00	0.00
MW-9	09/20/11			37.20	0.00	3,338.72	0.00	0.00
MW-9	10/03/11			37.33	0.00	3,338.59	0.00	0.00
MW-9	10/28/11			37.38	0.00	3,338.54	0.00	0.00
MW-9	11/10/11			37.40	0.00	3,338.52	0.00	0.00
MW-9	12/09/11			37.48	0.00	3,338.44	0.00	0.00
MW-10	11/16/07	3,370.17		28.20	0.00	3,341.97	0.00	0.00
MW-10	02/29/08			28.42	0.00	3,341.75	0.00	0.00
MW-10	05/28/08			28.48	0.00	3,341.69	0.00	0.00
MW-10	08/21/08			29.04	0.00	3,341.13	0.00	0.00
MW-10	11/06/08			28.82	0.00	3,341.35	0.00	0.00
MW-10	02/09/09			28.91	0.00	3,341.26	0.00	0.00
MW-10	05/14/09			29.07	0.00	3,341.10	0.00	0.00
MW-10	08/12/09			29.34	0.00	3,340.83	0.00	0.00
MW-10	11/10/09			29.77	0.00	3,340.40	0.00	0.00
MW-10	02/03/10			29.75	0.00	3,340.42	0.00	0.00
MW-10	05/27/10			29.82	0.00	3,340.35	0.00	0.00
MW-10	08/16/10			30.06	0.00	3,340.11	0.00	0.00
MW-10	11/11/10			30.32	0.00	3,339.85	0.00	0.00
MW-10	02/18/11			30.30	0.00	3,339.87	0.00	0.00
MW-10	05/25/11			30.51	0.00	3,339.66	0.00	0.00
MW-10	08/18/11			32.05	0.00	3,338.12	0.00	0.00
MW-10	09/20/11			31.50	0.00	3,338.67	0.00	0.00
MW-10	10/03/11			31.61	0.00	3,338.56	0.00	0.00
MW-10	10/28/11			31.66	0.00	3,338.51	0.00	0.00
MW-10	11/10/11			31.66	0.00	3,338.51	0.00	0.00
MW-10	12/09/11			31.69	0.00	3,338.48	0.00	0.00
MW-11	11/16/07	3,373.96		29.69	0.00	3,344.27	0.00	0.00
MW-11	02/29/08			29.30	0.00	3,344.66	0.00	0.00
MW-11	05/28/08			32.41	0.00	3,341.55	0.00	0.00
MW-11	08/21/08			32.98	0.00	3,340.98	0.00	0.00
MW-11	11/06/08			32.85	0.00	3,341.11	0.00	0.00

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Terracon Project Number A4117008

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WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW-11	02/09/09			32.91	0.00	3,341.05	0.00	0.00
MW-11	05/14/09			33.01	0.00	3,340.95	0.00	0.00
MW-11	08/12/09			33.35	0.00	3,340.61	0.00	0.00
MW-11	11/10/09			33.71	0.00	3,340.25	0.00	0.00
MW-11	02/03/10			33.74	0.00	3,340.22	0.00	0.00
MW-11	05/27/10			33.78	0.00	3,340.18	0.00	0.00
MW-11	08/16/10			34.11	0.00	3,339.85	0.00	0.00
MW-11	11/11/10			34.19	0.00	3,339.77	0.00	0.00
MW-11	02/18/11			34.26	0.00	3,339.70	0.00	0.00
MW-11	05/25/11			34.51	0.00	3,339.45	0.00	0.00
MW-11	08/18/11			35.25	0.00	3,338.71	0.00	0.00
MW-11	10/03/11			35.55	0.00	3,338.41	0.00	0.00
MW-11	10/28/11			35.58	0.00	3,338.38	0.00	0.00
MW-11	11/10/11			35.65	0.00	3,338.31	0.00	0.00
MW-11	12/09/11			35.70	0.00	3,338.26	0.00	0.00
MW-12	11/16/07	3,372.41		33.32	0.00	3,339.09	0.00	0.00
MW-12	02/29/08			27.29	0.00	3,345.12	0.00	0.00
MW-12	05/28/08			27.35	0.00	3,345.06	0.00	0.00
MW-12	08/21/08			27.92	0.00	3,344.49	0.00	0.00
MW-12	11/06/08			27.74	0.00	3,344.67	0.00	0.00
MW-12	02/09/09			27.83	0.00	3,344.58	0.00	0.00
MW-12	05/14/09			27.96	0.00	3,344.45	0.00	0.00
MW-12	08/13/09			28.26	0.00	3,344.15	0.00	0.00
MW-12	11/10/09			28.66	0.00	3,343.75	0.00	0.00
MW-12	02/03/10			28.69	0.00	3,343.72	0.00	0.00
MW-12	05/27/10			28.71	0.00	3,343.70	0.00	0.00
MW-12	08/16/10			28.95	0.00	3,343.46	0.00	0.00
MW-12	11/11/10			32.69	0.00	3,339.72	0.00	0.00
MW-12	02/18/11			29.16	0.00	3,343.25	0.00	0.00
MW-12	05/25/11			32.92	0.00	3,339.49	0.00	0.00
MW-12	08/18/11			33.67	0.00	3,338.74	0.00	0.00
MW-12	10/03/11			35.45	0.00	3,336.96	0.00	0.00
MW-12	10/28/11			34.10	0.00	3,338.31	0.00	0.00
MW-12	11/10/11			34.23	0.00	3,338.18	0.00	0.00
MW-12	12/09/11			34.32	0.00	3,338.09	0.00	0.00
MW-13	11/16/07	3,368.91		27.11	0.00	3,341.80	0.00	0.00
MW-13	02/29/08			30.80	0.00	3,338.11	0.00	0.00
MW-13	05/28/08			30.28	0.00	3,338.63	0.00	0.00
MW-13	08/21/08			31.43	0.00	3,337.48	0.00	0.00
MW-13	11/06/08			31.26	0.00	3,337.65	0.00	0.00
MW-13	02/09/09			31.36	0.00	3,337.55	0.00	0.00
MW-13	05/14/09			31.51	0.00	3,337.40	0.00	0.00
MW-13	08/12/09			31.81	0.00	3,337.10	0.00	0.00
MW-13	11/10/09			32.17	0.00	3,336.74	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH 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
Terracon Project Number A4117008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW- 13	02/03/10			33.19	0.00	3,335.72	0.00	0.00
MW- 13	05/27/10			33.23	0.00	3,335.68	0.00	0.00
MW- 13	08/16/10			32.47	0.00	3,336.44	0.00	0.00
MW- 13	11/11/10			29.14	0.00	3,339.77	0.00	0.00
MW- 13	02/18/11			32.71	0.00	3,336.20	0.00	0.00
MW- 13	05/25/11			29.40	0.00	3,339.51	0.00	0.00
MW- 13	08/18/11			30.15	0.00	3,338.76	0.00	0.00
MW- 13	10/03/11			34.00	0.00	3,334.91	0.00	0.00
MW- 13	10/28/11			30.57	0.00	3,338.34	0.00	0.00
MW- 13	11/10/11			30.62	0.00	3,338.29	0.00	0.00
MW- 13	12/09/11			30.75	0.00	3,338.16	0.00	0.00
MW- 14	11/16/07	3,371.54		29.94	0.00	3,341.60	0.00	0.00
MW- 14	02/29/08			30.08	0.00	3,341.46	0.00	0.00
MW- 14	05/28/08			30.27	0.00	3,341.27	0.00	0.00
MW- 14	08/21/08			30.70	0.00	3,340.84	0.00	0.00
MW- 14	11/06/08			30.55	0.00	3,340.99	0.00	0.00
MW- 14	02/09/09			30.65	0.00	3,340.89	0.00	0.00
MW- 14	05/14/09			30.75	0.00	3,340.79	0.00	0.00
MW- 14	08/12/09			31.11	0.00	3,340.43	0.00	0.00
MW- 14	11/10/09			31.46	0.00	3,340.08	0.00	0.00
MW- 14	02/03/10			31.48	0.00	3,340.06	0.00	0.00
MW- 14	05/27/10			31.52	0.00	3,340.02	0.00	0.00
MW- 14	08/16/10			31.76	0.00	3,339.78	0.00	0.00
MW- 14	11/11/10			31.97	0.00	3,339.57	0.00	0.00
MW- 14	02/18/11			31.99	0.00	3,339.55	0.00	0.00
MW- 14	05/25/11			32.20	0.00	3,339.34	0.00	0.00
MW- 14	08/18/11			32.95	0.00	3,338.59	0.00	0.00
MW- 14	10/03/11			33.30	0.00	3,338.24	0.00	0.00
MW- 14	10/28/11			33.32	0.00	3,338.22	0.00	0.00
MW- 14	11/10/11			33.53	0.00	3,338.01	0.00	0.00
MW- 14	12/09/11			33.82	0.00	3,337.72	0.00	0.00
MW- 15	11/16/07	3,377.64		36.09	0.00	3,341.55	0.00	0.00
MW- 15	02/29/08			36.20	0.00	3,341.44	0.00	0.00
MW- 15	05/28/08			36.31	0.00	3,341.33	0.00	0.00
MW- 15	08/21/08			36.80	0.00	3,340.84	0.00	0.00
MW- 15	11/06/08			36.69	0.00	3,340.95	0.00	0.00
MW- 15	02/09/09			36.77	0.00	3,340.87	0.00	0.00
MW- 15	05/14/09			36.91	0.00	3,340.73	0.00	0.00
MW- 15	08/12/09			37.21	0.00	3,340.43	0.00	0.00
MW- 15	11/10/09			37.57	0.00	3,340.07	0.00	0.00
MW- 15	02/03/10			37.60	0.00	3,340.04	0.00	0.00
MW- 15	05/27/10			37.61	0.00	3,340.03	0.00	0.00
MW- 15	08/16/10			37.87	0.00	3,339.77	0.00	0.00
MW- 15	11/11/10			38.09	0.00	3,339.55	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH 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
Terracon Project Number A4117008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW-15	02/18/11			38.08	0.00	3,339.56	0.00	0.00
MW-15	05/25/11			38.35	0.00	3,339.29	0.00	0.00
MW-15	08/18/11			39.06	0.00	3,338.58	0.00	0.00
MW-15	10/03/11			39.38	0.00	3,338.26	0.00	0.00
MW-15	10/28/11			39.42	0.00	3,338.22	0.00	0.00
MW-15	11/10/11			39.47	0.00	3,338.17	0.00	0.00
MW-15	12/09/11			39.43	0.00	3,338.21	0.00	0.00
TMW-1	12/27/07	3372.24	30.28	30.60	0.32	3,341.91	2.00	0.00
TMW-1	01/18/08		30.51	30.59	0.08	3,341.72	0.10	0.00
TMW-1	02/20/08		30.59	30.78	0.19	3,341.62	0.50	0.00
TMW-1	02/29/08		30.53	30.55	0.02	3,341.71	0.00	0.00
TMW-1	03/11/08		30.56	30.66	0.10	3,341.67	0.10	0.00
TMW-1	04/30/08		30.42	30.93	0.51	3,341.74	0.20	0.00
TMW-1	05/28/08		30.83	31.07	0.24	3,341.37	0.00	0.00
TMW-1	06/25/08		30.84	31.22	0.38	3,341.34	1.10	0.00
TMW-1	07/02/08		29.90	31.64	1.74	3,342.08	0.10	20.00
TMW-1	07/07/08		31.24	31.32	0.08	3,340.99	0.10	10.00
TMW-1	07/14/08		31.00	32.00	1.00	3,341.09	1.00	25.00
TMW-1	07/22/08		31.00	31.28	0.28	3,341.20	0.50	10.00
TMW-1	07/30/08		31.03	31.43	0.40	3,341.15	0.10	10.00
TMW-1	08/05/08		31.24	31.50	0.26	3,340.96	0.10	15.00
TMW-1	08/14/08		31.18	31.58	0.40	3,341.00	0.25	5.00
TMW-1	08/21/08		31.00	31.61	0.61	3,341.15	0.00	0.00
TMW-1	08/27/08		31.06	31.39	0.33	3,341.13	0.25	25.00
TMW-1	09/03/08							25.00
TMW-1	09/20/08		30.91	31.43	0.52	3,341.25	0.50	30.00
TMW-1	09/29/08		30.88	31.55	0.67	3,341.26	0.50	40.00
TMW-1	11/06/08		30.84	32.00	1.16	3,341.23	0.00	0.00
TMW-1	11/15/08		30.94	31.82	0.88	3,341.17	0.50	50.00
TMW-1	11/24/08		30.93	31.30	0.37	3,341.25	0.10	25.00
TMW-1	11/26/08		30.91	31.43	0.52	3,341.25	0.10	25.00
TMW-1	12/20/08			31.45	0.00	3,340.79	0.50	50.00
TMW-1	01/16/09		30.96	31.70	0.74	3,341.17	0.00	0.00
TMW-1	02/09/09		30.85	32.15	1.30	3,341.20	0.00	0.00
TMW-1	02/25/09						2.00	50.00
TMW-1	03/05/09						2.00	50.00
TMW-1	03/11/09						1.00	50.00
TMW-1	03/19/09		0.00	0.00	0.00		1.00	50.00
TMW-1	04/08/09		31.10	31.80	0.70	3,341.04	0.50	50.00
TMW-1	04/16/09		30.92	31.99	1.07	3,341.16	1.00	50.00
TMW-1	04/22/09		31.01	31.80	0.79	3,341.11	0.50	50.00
TMW-1	04/29/08		31.01	32.02	1.01	3,341.08	0.30	50.00
TMW-1	05/06/09							40.00
TMW-1	05/14/09		31.56	32.09	0.53	3,340.60	0.00	0.00
TMW-1	07/08/09		31.14	33.46	2.32	3,340.75	1.50	48.50
TMW-1	07/24/09		31.35	32.35	1.00	3,340.74	1.00	49.00
TMW-1	08/04/09		31.42	32.18	0.76	3,340.71	1.00	55.00

Table 1

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Lea County, New Mexico
NMOCD File Number 1R-0398
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Terracon Project Number A4117008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
TMW-1	08/12/09		31.41	32.36	0.95	3,340.69	0.00	0.00
TMW-1	08/19/09		31.41	32.55	1.14	3,340.66	3.00	15.00
TMW-1	09/01/09		32.23	32.83	0.60	3,339.92	11.00	47.00
TMW-1	09/22/09		31.52	33.27	1.75	3,340.46	10.00	0.00
TMW-1	10/12/09		31.64	32.42	0.78	3,340.48	4.00	41.00
TMW-1	10/30/09		31.78	31.80	0.02	3,340.46	0.25	0.00
TMW-1	11/10/09		31.96	32.06	0.10	3,340.27	1.00	25.00
TMW-1	01/08/10		31.86	32.49	0.63	3,340.29	1.00	15.00
TMW-1	01/22/10		31.70	32.55	0.85	3,340.41	8.00	5.00
TMW-1	01/26/10		32.65	32.80	0.15	3,339.57	0.10	10.00
TMW-1	02/03/10		31.75	32.49	0.74	3,340.38	0.10	10.00
TMW-1	02/10/10		31.75	32.77	1.02	3,340.34	0.10	20.00
TMW-1	02/22/10		31.64	33.07	1.43	3,340.39	4.00	50.00
TMW-1	03/09/10		31.65	32.87	1.22	3,340.41	4.00	50.00
TMW-1	03/09/10		31.65	32.87	1.22	3,340.41	4.00	50.00
TMW-1	03/24/10		31.65	33.07	1.42	3,340.38	4.00	30.00
TMW-1	04/12/10		31.57	33.61	2.04	3,340.36	4.00	30.00
TMW-1	04/27/10		31.66	33.02	1.36	3,340.38	4.00	50.00
TMW-1	05/27/10		31.70	33.45	1.75	3,340.28	0.00	0.00
TMW-1	06/21/10		31.70	34.24	2.54	3,340.16	2.50	50.00
TMW-1	07/07/10		31.87	32.96	1.09	3,340.21	0.00	50.00
TMW-1	07/20/10		31.81	32.94	1.13	3,340.26	0.00	50.00
TMW-1	08/03/10		32.00	33.09	1.09	3,340.08	0.00	0.00
TMW-1	08/16/10		32.02	33.61	1.59	3,339.98	2.00	30.00
TMW-1	09/02/10		32.02	33.74	1.72	3,339.96	2.00	50.00
TMW-1	09/17/10		32.15	33.24	1.09	3,339.93	2.00	50.00
TMW-1	10/05/10		32.12	33.94	1.82	3,339.85	2.00	30.00
TMW-1	11/11/10		32.23	33.39	1.16	3,339.84	0.00	30.00
TMW-1	12/15/10		32.16	33.56	1.40	3,339.87	0.00	0.00
TMW-1	12/29/10		32.05	33.93	1.88	3,339.91	0.00	30.00
TMW-1	02/18/11		32.12	34.10	1.98	3,339.82	0.00	0.00
TMW-1	03/02/11		31.16	34.68	3.52	3,340.55	0.00	30.00
TMW-1	03/16/11		32.14	33.12	0.98	3,339.95	0.00	30.00
TMW-1	03/29/11		32.05	34.55	2.50	3,339.82	0.00	25.00
TMW-1	04/15/11		31.96	36.09	4.13	3,339.66	0.00	0.00
TMW-1	04/18/11		31.92	36.08	4.16	3,339.70	4.00	30.00
TMW-1	04/29/11		31.85	31.87	0.02	3,340.39	0.00	20.00
TMW-1	05/06/11		31.93	36.40	4.47	3,339.64	5.00	20.00
TMW-1	05/20/11		32.26	34.97	2.71	3,339.57	5.00	20.00
TMW-1	05/25/11		32.30	34.95	2.65	3,339.54	2.50	0.00
TMW-1	06/01/11		32.43	34.20	1.77	3,339.54	5.00	20.00
TMW-1	06/14/11		32.56	34.16	1.60	3,339.44	5.00	0.00
TMW-1	06/30/11		32.65	34.49	1.84	3,339.31	5.00	0.00
TMW-1	07/30/11		32.79	35.75	2.96	3,339.01	4.00	40.00
TMW-1	09/20/11		33.53	34.00	0.47	3,338.64	0.00	0.00
TMW-1	09/23/11		33.53	34.50	0.97	3,338.56	0.00	0.00
TMW-1	10/03/11		33.41	35.71	2.30	3,338.49	0.00	0.00
TMW-1	10/28/11		33.25	37.20	3.95	3,338.40	5.00	0.00
TMW-1	11/10/11		33.20	37.50	4.30	3,338.40	5.00	20.00

Table 1

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Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4117008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
TMW-1	12/09/11		33.33	37.43	4.10	3,338.30	5.00	20.00
							119.20	Total Gallons
							2.84	Total Barrels

Elevations are based on the North American Vertical Datum of 1929.
PSH - Phase Separated Hydrocarbons
ND - PSH not detected
(1) Well extended to ground surface, resurveyed on September 7, 2007.

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzen	m, p-	o-Xylene	Gasoline	Diesel	Oil	Total
MW-1	11/02/04	**0.725**	0.321	**0.995**	**1.68**	**0.537**	NA	NA	NA	NA
MW-1	03/22/05	Not Sampled Due to Sample Reduction								
MW-1	05/17/05	Not Sampled Due to Sample Reduction								
MW-1	08/15/05	Not Sampled Due to Sample Reduction								
MW-1	11/18/05	**0.104**	<0.001	0.0328	0.0347	0.00736	NA	NA	NA	NA
MW-1	02/16/06	**1.08**	<0.001	0.4	0.37	0.0838	NA	NA	NA	NA
MW-1	05/22/06	**1.06**	<0.005	1.1	1.07	0.0732	NA	NA	NA	NA
MW-1	08/07/06	**1.15**	<0.001	0.323	0.336	0.0276	NA	NA	NA	NA
MW-1	11/21/06	Not Sampled								
MW-1	02/28/07	**0.714**	<0.02	0.439	0.498		NA	NA	NA	NA
MW-1	05/11/07	**0.966**	0.0309	0.288	0.396	0.0397	NA	NA	NA	NA
MW-1	08/10/07	**1.031**	<0.05	0.167	0.1945	<0.05	NA	NA	NA	NA
MW-1	11/15/07	Not Sampled Due to the Presence of PSH								
MW-1	02/29/08	0.0033	<0.002	<0.001	<0.002	<0.001	3.68	3.44	<1.5	7.12
MW-1	05/28/08	Not Sampled Due to the Presence of PSH								
MW-1	08/21/08	Not Sampled Due to the Presence of PSH								
MW-1	11/08/08	Not Sampled Due to the Presence of PSH								
MW-1	02/10/09	**0.4048**	0.0022	0.0436	0.0166	<0.001	3.71	<2.5	<2.5	3.71
MW-1	05/15/09	**0.5686**	<0.002	0.0719	0.0561	<0.001	NA	NA	NA	NA
MW-1	0813/09	**0.2665**	<0.02	0.0628	0.0341	<0.1	NA	NA	NA	NA
MW-1	11/11/09	Not Sampled Due to the Presence of PSH								
MW-1	02/05/10	**0.6889**	0.0139	0.0796	0.0556	0.0278	NA	NA	NA	NA
MW-1	05/27/10	Not Sampled Due to the Presence of PSH								
MW-1	08/16/10	Not Sampled Due to the Presence of PSH								
MW-1	11/11/10	Not Sampled Due to the Presence of PSH								
MW-2	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-2	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-2	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-2	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-2	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-2	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-2	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-2	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-2	08/18/04	Well placed in annual sampling program								
MW-2	03/22/05	Not Sampled Due to Sample Reduction								
MW-2	05/17/05	Not Sampled Due to Sample Reduction								
MW-2	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-2	11/18/05	Not Sampled Due to Sample Reduction								
MW-2	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-2	05/22/06	Not Sampled								
MW-2	08/07/06	Not Sampled								
MW-2	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-2	05/11/07	Not Sampled Due to Sample Reduction								
MW-2	08/10/07	Not Sampled Due to Sample Reduction								
MW-2	11/15/07	Not Sampled Due to Sample Reduction								
MW-2	02/29/08	<0.001	<0.002	0.001	<0.002	<0.001	<1.5	3.51	3.15	6.66
MW-2	05/28/08	Not Sampled Due to Sample Reduction								
MW-2	08/21/08	Not Sampled Due to Sample Reduction								
MW-2	11/08/08	Not Sampled Due to Sample Reduction								
MW-2	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-2	05/14/09	Not Sampled Due to Sample Reduction								
MW-2	08/12/09	Not Sampled Due to Sample Reduction								
MW-2	11/11/09	Not Sampled Due to Sample Reduction								
MW-2	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-2	05/27/10	Not Sampled Due to Sample Reduction								
MW-2	08/16/10	Not Sampled Due to Sample Reduction								
MW-2	11/11/10	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzen	m, p-	o-Xylene	Gasoline	Diesel	Oil	Total
MW-2	11/17/11	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	11/10/03	0.005	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	11/25/03	0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	08/18/04	Well placed in annual sampling program								
MW-3	03/22/05	Not Sampled Due to Sample Reduction								
MW-3	05/17/05	Not Sampled Due to Sample Reduction								
MW-3	08/15/05	0.00976	0.00189	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	11/18/05	Not Sampled Due to Sample Reduction								
MW-3	02/16/06	0.00816	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	05/22/06	Not Sampled								
MW-3	08/07/06	Not Sampled								
MW-3	11/21/06	Not Sampled								
MW-3	02/28/07	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	05/11/07	Not Sampled Due to Sample Reduction								
MW-3	08/10/07	Not Sampled Due to Sample Reduction								
MW-3	11/15/07	Not Sampled Due to Sample Reduction								
MW-3	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-3	05/28/08	Not Sampled Due to Sample Reduction								
MW-3	08/21/08	Not Sampled Due to Sample Reduction								
MW-3	11/08/08	Not Sampled Due to Sample Reduction								
MW-3	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-3	05/14/09	Not Sampled Due to Sample Reduction								
MW-3	08/12/09	Not Sampled Due to Sample Reduction								
MW-3	11/11/09	Not Sampled Due to Sample Reduction								
MW-3	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-3	05/27/10	Not Sampled Due to Sample Reduction								
MW-3	08/16/10	Not Sampled Due to Sample Reduction								
MW-3	11/11/10	Not Sampled Due to Sample Reduction								
MW-4	09/30/02	**2.43**	0.74	0.466	**0.946**	**0.284**	NA	NA	NA	NA
MW-4	11/06/02	**3.96**	0.015	0.174	**0.58**	**0.108**	NA	NA	NA	NA
MW-4	02/27/03	Not Sampled Due to the Presence of PSH								
MW-4	05/12/03	**1.88**	0.004	0.723	0.548	0.056	NA	NA	NA	NA
MW-4	08/20/03	Not Sampled Due to the Presence of PSH								
MW-4	11/10/03	**0.408**	0.001	0.011	0.011	0.001	NA	NA	NA	NA
MW-4	02/17/04	**0.069**	0.001	0.003	0.004	0.001	NA	NA	NA	NA
MW-4	05/06/04	**0.549**	0.213	0.394	0.296	0.194	NA	NA	NA	NA
MW-4	08/18/04	Not Sampled Due to the Presence of PSH								
MW-4	11/02/04	**0.745**	<0.001	0.00856	0.00648	0.00364	NA	NA	NA	NA
MW-4	03/22/05	Not Sampled Due to Sample Reduction								
MW-4	05/17/05	Not Sampled Due to Sample Reduction								
MW-4	08/15/05	0.00375	<0.001	0.02	0.0412	0.00844	NA	NA	NA	NA
MW-4	11/18/05	**0.103**	<0.001	0.0909	0.0727	<0.001	NA	NA	NA	NA
MW-4	02/16/06	**0.0282**	<0.001	0.122	0.11	<0.001	NA	NA	NA	NA
MW-4	05/22/06	**0.0854**	<0.001	0.355	0.224	<0.001	NA	NA	NA	NA
MW-4	08/07/06	**0.0331**	<0.001	0.139	0.112	<0.001	NA	NA	NA	NA
MW-4	11/21/06	**0.0361**	<0.005	0.252	0.105	<0.005	NA	NA	NA	NA
MW-4	02/28/07	**0.0221**	<0.001	0.0142	0.116		NA	NA	NA	NA
MW-4	05/11/07	**0.039**	0.00629	0.336	0.187	0.00725	NA	NA	NA	NA
MW-4	08/10/07	**0.0171**	<0.01	0.3113	0.1332	<0.01	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzen	m, p-	o-Xylene	Gasoline	Diesel	Oil	Total
MW-4	11/15/07	**0.0108**	<0.002	<0.001	<0.002	0.0031	NA	NA	NA	NA
MW-4	02/29/08	**0.0578**	<0.002	0.065	0.0047	<0.001	<1.5	<1.5	<1.5	<1.5
MW-4	05/28/08	Not Sampled Due to the Presence of PSH								
MW-4	08/21/08	**0.0232**	<0.002	0.0303	0.022	0.0147	NA	NA	NA	NA
MW-4	11/08/08	**0.0374**	<0.002	0.0041	<0.002	<0.001	NA	NA	NA	NA
MW-4	02/10/09	**0.0539**	<0.002	0.0206	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-4	05/15/09	**0.0632**	0.0043	0.1016	0.0232	<0.001	NA	NA	NA	NA
MW-4	08/12/09	**0.0322**	<0.002	0.035	0.0024	0.0025	NA	NA	NA	NA
MW-4	11/11/09	**0.0725**	<0.002	0.0414	0.0074	<0.001	NA	NA	NA	NA
MW-4	02/05/10	**0.0198**	<0.002	0.0175	<0.002	<0.001	NA	NA	NA	NA
MW-4	05/27/10	**0.0787**	<0.002	0.0595	0.0083	<0.001	NA	NA	NA	NA
MW-4	08/16/10	**0.208**	<0.1	0.135	<0.1	<0.05	NA	NA	NA	NA
MW-4	11/11/10	**0.0335**	<0.002	0.0196	0.0029	<0.001	NA	NA	NA	NA
MW-5	09/30/02	Not Sampled Due to the Presence of PSH								
MW-5	11/06/02	Not Sampled Due to the Presence of PSH								
MW-5	02/27/03	Not Sampled Due to the Presence of PSH								
MW-5	05/12/03	**0.226**	0.01	0.399	**0.704**	**0.567**	NA	NA	NA	NA
MW-5	08/20/03	Not Sampled Due to the Presence of PSH								
MW-5	11/10/03	**0.511**	<0.001	**1.07**	**0.625**	**0.02**	NA	NA	NA	NA
MW-5	02/17/04	**0.445**	0.048	**3.33**	**3.01**	**0.153**	NA	NA	NA	NA
MW-5	05/06/04	**0.0744**	0.0207	0.222	0.273	0.148	NA	NA	NA	NA
MW-5	08/24/04	**0.156**	0.00385	0.232	0.161	0.124	NA	NA	NA	NA
MW-5	11/02/04	**0.371**	<0.001	0.0209	0.0407	0.00102	NA	NA	NA	NA
MW-5	03/22/05	Not Sampled Due to Sample Reduction								
MW-5	05/17/05	Not Sampled Due to Sample Reduction								
MW-5	08/15/05	Not Sampled Due to Sample Reduction								
MW-5	11/18/05	**0.0886**	<0.001	0.0448	0.0394	0.018	NA	NA	NA	NA
MW-5	02/16/06	**0.0108**	<0.001	0.00861	0.002	0.00202	NA	NA	NA	NA
MW-5	05/22/06	<0.001	<0.001	0.00152	<0.002	<0.001	NA	NA	NA	NA
MW-5	08/07/06	**0.0386**	<0.001	0.0619	0.0669	0.0204	NA	NA	NA	NA
MW-5	11/21/06	Not Sampled								
MW-5	02/28/07	**0.36**	<0.005	0.412	**5.04**		NA	NA	NA	NA
MW-5	05/11/07	**0.397**	0.0141	0.387	0.291	0.196	NA	NA	NA	NA
MW-5	08/10/07	**0.2765**	<0.025	0.2858	0.2025	0.1315	NA	NA	NA	NA
MW-5	11/15/07	0.0039	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-5	02/29/08	0.003	<0.002	0.0036	0.003	0.0018	9.46	11.7	<1.5	21.16
MW-5	05/28/08	Not Sampled Due to the Presence of PSH								
MW-5	08/21/08	**0.0107**	<0.002	0.0032	<0.002	0.0027	NA	NA	NA	NA
MW-5	11/08/08	**0.2551**	<0.01	0.2323	0.164	0.1145	NA	NA	NA	NA
MW-5	02/10/09	**0.2425**	<0.01	0.2885	0.1932	0.117	4.47	<2.5	<2.5	4.47
MW-5	05/15/09	**0.2339**	0.0234	0.1006	0.1087	0.0782	NA	NA	NA	NA
MW-5	08/12/09	**0.2247**	<0.01	0.2958	0.1891	0.1264	NA	NA	NA	NA
MW-5	11/11/09	Not Sampled Due to the Presence of PSH								
MW-5	02/05/10	**0.7078**	<0.01	0.4458	0.4786	0.1105	NA	NA	NA	NA
MW-5	05/27/10	Not Sampled Due to the Presence of PSH								
MW-5	08/16/10	Not Sampled Due to the Presence of PSH								
MW-5	11/11/10	**0.226**	<0.001	0.2402	0.1391	0.1087	NA	NA	NA	NA
MW-5	02/17/11	**0.165**	<0.001	0.202	0.103	0.0906	NA	NA	NA	NA
MW-5	08/18/11	**0.128**	0.00336	0.162	0.032	0.0413	NA	NA	NA	NA
MW-6	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzen	m, p-	o-Xylene	Gasoline	Diesel	Oil	Total
MW-6	05/06/04	0.00426	<0.001	<0.001	0.00254	0.0013	NA	NA	NA	NA
MW-6	08/18/04	Well placed in annual sampling program								
MW-6	11/02/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	03/22/05	Not Sampled Due to Sample Reduction								
MW-6	05/17/05	Not Sampled Due to Sample Reduction								
MW-6	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/18/05	Not Sampled Due to Sample Reduction								
MW-6	02/16/06	0.00133	<0.001	0.00298	<0.002	<0.001				
MW-6	05/22/06	Not Sampled								
MW-6	08/07/06	Not Sampled								
MW-6	11/21/06	Not Sampled								
MW-6	02/28/07	<0.001	<0.001	<0.001	0.0027		NA	NA	NA	NA
MW-6	05/11/07	0.0007 (J)	0.000698 (J	0.00211	0.000687 (J)	0.00672	NA	NA	NA	NA
MW-6	08/10/07	0.0012	<0.001	0.0059	<0.002	0.0014	NA	NA	NA	NA
MW-6	11/15/07	<0.001	<0.002	0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-6	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	08/21/08	0.0017	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-6	05/15/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	08/13/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	08/16/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	05/25/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	08/18/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-7	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-7	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-7	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-7	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-7	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	08/18/04	Well placed in annual sampling program								
MW-7	03/22/05	Not Sampled Due to Sample Reduction								
MW-7	05/17/05	Not Sampled Due to Sample Reduction								
MW-7	08/15/05	0.0059	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	11/18/05	Not Sampled Due to Sample Reduction								
MW-7	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	05/22/06	Not Sampled								
MW-7	08/07/06	Not Sampled								
MW-7	11/21/06	Not Sampled					NA	NA	NA	NA
MW-7	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-7	05/11/07	Not Sampled Due to Sample Reduction								
MW-7	08/10/07	Not Sampled Due to Sample Reduction								
MW-7	11/15/07	Not Sampled Due to Sample Reduction								
MW-7	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-7	05/28/08	Not Sampled Due to Sample Reduction								
MW-7	08/21/08	Not Sampled Due to Sample Reduction								
MW-7	11/08/08	Not Sampled Due to Sample Reduction								
MW-7	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzen	m, p-	o-Xylene	Gasoline	Diesel	Oil	Total
MW-7	05/14/09	Not Sampled Due to Sample Reduction								
MW-7	08/12/09	Not Sampled Due to Sample Reduction								
MW-7	11/11/09	Not Sampled Due to Sample Reduction								
MW-7	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-7	05/27/10	Not Sampled Due to Sample Reduction								
MW-7	08/16/10	Not Sampled Due to Sample Reduction								
MW-7	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	11/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-8	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-8	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-8	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-8	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-8	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	08/18/04	Well placed in annual sampling program								
MW-8	03/22/05	Not Sampled Due to Sample Reduction								
MW-8	05/17/05	Not Sampled Due to Sample Reduction								
MW-8	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	11/18/05	Not Sampled Due to Sample Reduction								
MW-8	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	05/22/06	Not Sampled								
MW-8	08/07/06	Not Sampled								
MW-8	11/21/06	Not Sampled								
MW-8	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-8	05/11/07	Not Sampled Due to Sample Reduction								
MW-8	08/10/07	Not Sampled Due to Sample Reduction								
MW-8	11/15/07	Not Sampled Due to Sample Reduction								
MW-8	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-8	05/28/08	Not Sampled Due to Sample Reduction								
MW-8	08/21/08	Not Sampled Due to Sample Reduction								
MW-8	11/08/08	Not Sampled Due to Sample Reduction								
MW-8	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-8	05/14/09	Not Sampled Due to Sample Reduction								
MW-8	08/12/09	Not Sampled Due to Sample Reduction								
MW-8	11/11/09	Not Sampled Due to Sample Reduction								
MW-8	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-8	05/27/10	Not Sampled Due to Sample Reduction								
MW-8	08/16/10	Not Sampled Due to Sample Reduction								
MW-8	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	11/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	02/17/04	0.003	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	05/06/04	0.00267	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	08/18/04	Well placed in annual sampling program								
MW-9	11/02/04	**0.136**	<0.001	<0.001	0.0116	0.00951	NA	NA	NA	NA
MW-9	03/22/05	**0.0146**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	05/17/05	0.0036	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	11/18/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzen	m, p-	o-Xylene	Gasoline	Diesel	Oil	Total
MW-9	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	11/21/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-9	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	08/10/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	11/15/07	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-9	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-9	05/15/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	0813/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	02/05/10	0.0016	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	08/16/10	<0.001	<0.002	<0.001	0.0032	<0.001	NA	NA	NA	NA
MW-9	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	02/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	05/25/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	08/18/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	11/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-10	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-10	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-10	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-10	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-10	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	08/18/04	Well placed in annual sampling program								
MW-10	03/22/05	Not Sampled Due to Sample Reduction								
MW-10	05/17/05	Not Sampled Due to Sample Reduction								
MW-10	08/15/05	**0.0251**	0.0106	0.00197	0.00231	0.00102	NA	NA	NA	NA
MW-10	11/18/05	Not Sampled Due to Sample Reduction								
MW-10	02/16/06	**0.0361**	<0.001	0.00319	<0.002	<0.001	NA	NA	NA	NA
MW-10	05/22/06	**0.151**	<0.001	0.00279	<0.002	<0.001	NA	NA	NA	NA
MW-10	08/07/06	**0.0247**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/21/06	0.00557	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-10	05/11/07	0.00145	<0.001	0.000361 (J)	<0.001	<0.001	NA	NA	NA	NA
MW-10	08/10/07	0.002	<0.001	0.0028	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/15/07	0.004	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-10	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-10	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	08/16/10	0.0011	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzen	m, p-	o-Xylene	Gasoline	Diesel	Oil	Total
MW-10	02/17/11	<0.001	<0.002	0.0012	<0.002	<0.001	NA	NA	NA	NA
MW-10	05/25/11	<0.001	<0.002	0.0012	<0.002	<0.001	NA	NA	NA	NA
MW-10	08/18/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-11	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-11	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-11	08/20/03	**0.147**	<0.001	0.069	0.069	0.033	NA	NA	NA	NA
MW-11	11/10/03	**0.526**	<0.001	<0.001	0.08	0.047	NA	NA	NA	NA
MW-11	02/17/04	**0.103**	<0.001	<0.001	0.013	0.007	NA	NA	NA	NA
MW-11	05/06/04	**2.05**	<0.005	0.253	0.137	0.119	NA	NA	NA	NA
MW-11	08/18/04	**0.0973**	<0.001	<0.001	0.00263	0.00137	NA	NA	NA	NA
MW-11	11/02/04	**0.087**	<0.001	0.00163	<0.002	<0.001	NA	NA	NA	NA
MW-11	03/22/05	**0.0246**	<0.001	0.00163	<0.002	<0.001	NA	NA	NA	NA
MW-11	05/17/05	**0.0263**	<0.001	0.00353	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/15/05	**0.0127**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/18/05	0.00922	<0.001	0.00115	<0.002	<0.001	NA	NA	NA	NA
MW-11	02/16/06	0.00283	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	05/22/06	0.00173	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/21/06	0.00166	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	02/28/07	<0.001	<0.001	<0.001	0.0039		NA	NA	NA	NA
MW-11	05/11/07	0.00348	0.00089 (J)	0.000537 (J)	<0.001	0.000277 (J)	NA	NA	NA	NA
MW-11	08/10/07	<0.001	<0.001	<0.001	<0.002	0.0011	NA	NA	NA	NA
MW-11	11/15/07	0.0021	<0.002	0.0014	0.0022	0.0076	NA	NA	NA	NA
MW-11	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-11	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/08/08	0.0012	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-11	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/16/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	02/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	05/25/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/18/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	11/06/02	**2.3**	0.012	0.005	0.292	0.092	NA	NA	NA	NA
MW-12	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-12	05/12/03	**0.24**	<0.001	<0.001	0.008	0.015	NA	NA	NA	NA
MW-12	08/20/03	**0.257**	<0.001	<0.001	0.072	0.013	NA	NA	NA	NA
MW-12	11/10/03	**0.544**	<0.001	<0.001	<0.002	0.01	NA	NA	NA	NA
MW-12	02/17/04	**1.21**	<0.001	<0.001	0.009	0.002	NA	NA	NA	NA
MW-12	05/06/04	**1.17**	<0.002	0.0659	0.117	0.0304	NA	NA	NA	NA
MW-12	08/18/04	**0.0612**	<0.001	0.0222	<0.001	<0.001	NA	NA	NA	NA
MW-12	11/02/04	**0.0322**	<0.001	0.00253	<0.002	<0.001	NA	NA	NA	NA
MW-12	03/22/05	0.00545	<0.001	0.00366	<0.002	<0.001	NA	NA	NA	NA
MW-12	05/17/05	0.00103	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	11/18/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzen	m, p-	o-Xylene	Gasoline	Diesel	Oil	Total
MW-12	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	11/21/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	02/28/07	<0.001	<0.001	<0.001	0.0031		NA	NA	NA	NA
MW-12	05/11/07	0.00205	0.000858 (J	0.000546 (J)	<0.001	0.000378 (J)	NA	NA	NA	NA
MW-12	08/10/07	<0.005	<0.005	<0.005	<0.01	<0.005	NA	NA	NA	NA
MW-12	11/15/07	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	02/29/08	0.0011	<0.002	<0.001	<0.002	0.003	<1.5	<1.5	<1.5	<1.5
MW-12	05/28/08	<0.001	<0.002	<0.001	<0.002	0.002	NA	NA	NA	NA
MW-12	08/21/08	**0.0518**	<0.002	0.0398	0.0036	<0.001	NA	NA	NA	NA
MW-12	11/08/08	0.0033	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-12	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	11/11/09	0.002	<0.002	0.002	<0.002	0.0071	NA	NA	NA	NA
MW-12	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	05/27/10	0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	08/16/10	<0.001	<0.002	<0.001	<0.002	0.0017	NA	NA	NA	NA
MW-12	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	02/17/11	<0.001	<0.002	<0.001	<0.002	0.00261	NA	NA	NA	NA
MW-12	05/25/11	0.00219	<0.002	<0.001	<0.002	0.00271	NA	NA	NA	NA
MW-12	08/18/11	0.0248	<0.002	0.00744	0.00294	<0.001	NA	NA	NA	NA
MW-12	11/17/11	0.00235	<0.002	<0.001	<0.002	0.00283	NA	NA	NA	NA
MW-13	11/06/02	**0.08**	<0.001	<0.001	0.002	0.001	NA	NA	NA	NA
MW-13	02/27/03	**2.14**	0.001	0.095	**0.711**	**0.111**	NA	NA	NA	NA
MW-13	05/12/03	**1.65**	0.001	0.202	0.069	0.17	NA	NA	NA	NA
MW-13	08/20/03	**1.71**	<0.001	0.138	0.015	0.511	NA	NA	NA	NA
MW-13	11/10/03	**1.55**	<0.001	0.084	0.003	0.002	NA	NA	NA	NA
MW-13	02/17/04	**0.043**	<0.001	0.015	0.003	<0.001	NA	NA	NA	NA
MW-13	05/06/04	**0.0873**	<0.001	<0.001	0.00274	0.00242	NA	NA	NA	NA
MW-13	08/18/04	**0.0903**	<0.001	0.00982	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/02/04	**0.233**	<0.001	0.00348	0.00464	0.0038	NA	NA	NA	NA
MW-13	03/22/05	**0.18**	<0.001	0.00239	<0.002	<0.001	NA	NA	NA	NA
MW-13	05/17/05	**0.0758**	<0.001	0.00277	<0.002	<0.001	NA	NA	NA	NA
MW-13	08/15/05	0.00668	<0.001	0.00121	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/18/05	0.00134	<0.001	0.00121	<0.002	<0.001	NA	NA	NA	NA
MW-13	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	08/07/06	0.0013	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/21/06	0.00214	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	02/28/07	<0.001	0.0022	0.0049	0.112		NA	NA	NA	NA
MW-13	05/11/07	0.000684 (J	0.000352 (J	0.00293	0.000972 (J)	0.00625	NA	NA	NA	NA
MW-13	08/10/07	<0.005	<0.005	<0.005	<0.01	0.0079	NA	NA	NA	NA
MW-13	11/15/07	0.0013	<0.002	<0.001	<0.002	0.007	NA	NA	NA	NA
MW-13	02/29/08	<0.001	<0.002	<0.001	<0.002	0.0028	<1.5	<1.5	<1.5	<1.5
MW-13	05/28/08	<0.001	<0.002	<0.001	<0.002	0.0018	NA	NA	NA	NA
MW-13	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-13	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	08/16/10	0.0014	<0.002	<0.001	<0.002	0.002	NA	NA	NA	NA
MW-13	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	02/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	05/25/11	<0.001	<0.002	<0.001	<0.002	0.00365	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzen	m, p-	o-Xylene	Gasoline	Diesel	Oil	Total
MW-13	08/18/11	<0.001	<0.002	0.00143	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/17/12	0.00118	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-14	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-14	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-14	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-14	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/18/04	<0.001	<0.001	<0.001	0.0157	0.00796	NA	NA	NA	NA
MW-14	11/02/04	**0.0106**	<0.001	<0.001	0.00618	0.00537	NA	NA	NA	NA
MW-14	03/22/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	05/17/05	0.00906	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/18/05	0.00494	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/21/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-14	05/11/07	0.000836 (J	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-14	08/10/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/15/07	0.0012	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-14	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/08/08	<0.001	0.0023	0.001	<0.002	0.0012	NA	NA	NA	NA
MW-14	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-14	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/16/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	02/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	05/25/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/18/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-15	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-15	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-15	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-15	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	08/24/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/02/04	Well placed in annual sampling program								
MW-15	03/22/05	Not Sampled Due to Sample Reduction								
MW-15	05/17/05	Not Sampled Due to Sample Reduction								
MW-15	08/15/05	**0.137**	<0.001	<0.001	0.00927	0.0102	NA	NA	NA	NA
MW-15	11/18/05	Not Sampled Due to Sample Reduction								
MW-15	02/16/06	**0.0693**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	05/22/06	**0.0183**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	08/07/06	0.00957	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/21/06	0.00546	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzen	m, p-	o-Xylene	Gasoline	Diesel	Oil	Total
MW-15	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-15	05/11/07	0.000462 (J	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-15	08/10/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/15/07	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-15	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	08/21/08	0.0041	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-15	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	08/16/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	02/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	05/25/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	08/18/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/17/11	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
TMW-1	11/02/04	**4.95**	**2.78**	**1.72**	**2.71**	**0.783**	NA	NA	NA	NA
TMW-1	11/18/05	**1.86**	<0.002	**1.06**	**1.71**	**0.435**	NA	NA	NA	NA
TMW-1	02/16/06	**1.69**	<0.002	**1.03**	**2.19**	**0.604**	NA	NA	NA	NA
TMW-1	05/22/06	Not Sampled								
TMW-1	08/07/06	Not Sampled								
TMW-1	11/21/06	Not Sampled								
TMW-1	02/28/07	**1.66**	<0.05	**0.777**	**1.6**		NA	NA	NA	NA
TMW-1	05/11/07	**0.843**	0.334	**1.03**	**2.75**	**0.439**	NA	NA	NA	NA
TMW-1	08/10/07	Not Sampled Due to the Presence of PSH								
TMW-1	11/15/07	Not Sampled Due to the Presence of PSH								
TMW-1	02/29/08	**3.004**	<0.04	**1.046**	**1.838**	0.0402	16.6	7.06	<1.5	23.66
TMW-1	05/28/08	Not Sampled Due to the Presence of PSH								
TMW-1	08/21/08	Not Sampled Due to the Presence of PSH								
TMW-1	11/08/08	Not Sampled Due to the Presence of PSH								
TMW-1	02/25/09	**2.044**	**<2**	**<1**	**<2**	**<1**	32.7	44.3	4	81
TMW-1	05/14/09	Not Sampled Due to the Presence of PSH								
TMW-1	08/12/09	Not Sampled Due to the Presence of PSH								
TMW-1	11/11/09	Not Sampled Due to the Presence of PSH								
TMW-1	02/05/10	Not Sampled Due to the Presence of PSH								
TMW-1	05/27/10	Not Sampled Due to the Presence of PSH								
TMW-1	08/16/10	Not Sampled Due to the Presence of PSH								
TMW-1	11/11/10	Not Sampled Due to the Presence of PSH								
EB-1	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
NMWQCC		**0.01**	**0.75**	**0.75**	**0.62**		**NE**	**NE**	**NE**	**NE**

BTEX - Benzene, Toluene, Ethylbenzene, and Xylenes
NMWQCC - New Mexico Water Quality Control Commission
Results in **BOLD** are above the NMWQCC Groundwater Standards
PSH - Phase Separated Hydrocarbons

APPENDIX C

Laboratory Data Sheets

Analytical Report 407527

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Line

2001-11226

28-FEB-11

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

28-FEB-11

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

Reference: XENCO Report No: **407527**
Livingston Line
Project Address:

Jason Henry:

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 407527. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 407527 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,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 407527

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Line

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-12	W	Feb-18-11 12:10		407527-001
MW-13	W	Feb-18-11 12:38		407527-002
MW-11	W	Feb-18-11 13:00		407527-003
MW-15	W	Feb-18-11 13:15		407527-004
MW-14	W	Feb-18-11 13:41		407527-005
MW-10	W	Feb-18-11 14:16		407527-006
MW-9	W	Feb-18-11 14:49		407527-007
MW-6	W	Feb-18-11 15:16		407527-008
MW-5	W	Feb-18-11 15:44		407527-009

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Livingston Line

Project ID:	*2001-11226*	*Report Date:*	*28-FEB-11*
Work Order Number:	*407527*	*Date Received:*	*02/22/2011*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-845258 BTEX by EPA 8021
m,p-xylene was detected in the blank. Samples that have no hit of m,p-xylene and one's that have a hit of 10X or higher are reported as is.

Certificate of Analysis Summary 407527

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

Project Id: 2001-11226
Contact: Jason Henry
Project Location:

Date Received in Lab: Tue Feb-22-11 03:15 pm
Report Date: 28-FEB-11
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	407527-001		407527-002		407527-003		407527-004		407527-005		407527-006	
	Field Id:	MW-12		MW-13		MW-11		MW-15		MW-14		MW-10	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Feb-18-11 12:10		Feb-18-11 12:38		Feb-18-11 13:00		Feb-18-11 13:15		Feb-18-11 13:41		Feb-18-11 14:16	
BTEX by EPA 8021	***Extracted:***	Feb-24-11 15:30		Feb-24-11 15:30		Feb-24-11 15:15		Feb-24-11 15:15		Feb-24-11 15:15		Feb-24-11 15:15	
	Analyzed:	Feb-25-11 08:28		Feb-25-11 08:51		Feb-26-11 05:59		Feb-26-11 06:22		Feb-26-11 06:45		Feb-26-11 07:08	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m_p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		0.00261	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Xylenes, Total		0.00261	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX		0.00261	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 407527

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

Project Id: 2001-11226
Contact: Jason Henry
Project Location:

Date Received in Lab: Tue Feb-22-11 03:15 pm
Report Date: 28-FEB-11
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	407527-007		407527-008		407527-009				
	Field Id:	MW-9		MW-6		MW-5				
	Depth:									
	Matrix:	WATER		WATER		WATER				
	Sampled:	Feb-18-11 14:49		Feb-18-11 15:16		Feb-18-11 15:44				
BTEX by EPA 8021	*Extracted:*	Feb-24-11 15:15		Feb-24-11 15:15		Feb-24-11 15:15				
	Analyzed:	Feb-26-11 07:30		Feb-26-11 07:53		Feb-26-11 11:42				
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL			
Benzene		ND	0.0010	ND	0.0010	0.165	0.0050			
Toluene		ND	0.0020	ND	0.0020	ND	0.0100			
Ethylbenzene		ND	0.0010	ND	0.0010	0.202	0.0050			
m_p-Xylenes		ND	0.0020	ND	0.0020	0.103	0.0100			
o-Xylene		ND	0.0010	ND	0.0010	0.0906	0.0050			
Xylenes, Total		ND	0.0010	ND	0.0010	0.194	0.0050			
Total BTEX		ND	0.0010	ND	0.0010	0.561	0.0050			

Brent Barron, II
Odessa Laboratory Manager

Flagging Criteria

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

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.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Line

Work Orders : 407527, **Project ID:** 2001-11226

Lab Batch #: 845258 **Sample:** 596518-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/24/11 22:35

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 845258 **Sample:** 596518-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/24/11 22:58

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY 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	0.0290	0.0300	97	80-120	

Lab Batch #: 845258 **Sample:** 596518-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/25/11 00:07

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 845258 **Sample:** 407479-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/25/11 04:19

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 845258 **Sample:** 407479-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/25/11 04:42

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	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 Line

Work Orders : 407527,

Project ID: 2001-11226

Lab Batch #: 845258 **Sample:** 407527-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/25/11 08:28

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
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	0.0289	0.0300	96	80-120	

Lab Batch #: 845258 **Sample:** 407527-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/25/11 08:51

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 845483 **Sample:** 596667-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 04:05

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 845483 **Sample:** 596667-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 04:28

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 845483 **Sample:** 596667-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 05:36

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	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 Line

Work Orders : 407527,

Project ID: 2001-11226

Lab Batch #: 845483 **Sample:** 407527-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 05:59

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 845483 **Sample:** 407527-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 06:22

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 845483 **Sample:** 407527-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 06:45

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 845483 **Sample:** 407527-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 07:08

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 845483 **Sample:** 407527-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 07:30

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	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 Line

Work Orders : 407527,

Project ID: 2001-11226

Lab Batch #: 845483 **Sample:** 407527-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 07:53

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 845483 **Sample:** 407527-003 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 09:47

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 845483 **Sample:** 407527-003 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 10:10

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 845483 **Sample:** 407527-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/26/11 11:42

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	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 Line

Work Order #: 407527 **Project ID:** 2001-11226

Analyst: ASA **Date Prepared:** 02/24/2011 **Date Analyzed:** 02/24/2011

Lab Batch ID: 845258 **Sample:** 596518-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0974	97	0.100	0.0973	97	0	70-125	25	
Toluene	<0.00200	0.100	0.112	112	0.100	0.103	103	8	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0993	99	0.100	0.0976	98	2	71-129	25	
m_p-Xylenes	0.00241	0.200	0.221	111	0.200	0.211	106	5	70-131	25	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.0982	98	3	71-133	25	

Analyst: ASA **Date Prepared:** 02/24/2011 **Date Analyzed:** 02/26/2011

Lab Batch ID: 845483 **Sample:** 596667-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.103	103	0.100	0.103	103	0	70-125	25	
Toluene	<0.00200	0.100	0.101	101	0.100	0.101	101	0	70-125	25	
Ethylbenzene	<0.00100	0.100	0.101	101	0.100	0.101	101	0	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.209	105	0.200	0.208	104	0	70-131	25	
o-Xylene	<0.00100	0.100	0.102	102	0.100	0.102	102	0	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 Line

Work Order # : 407527 **Project ID:** 2001-11226

Lab Batch ID: 845258 **QC- Sample ID:** 407479-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/25/2011 **Date Prepared:** 02/24/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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	0.104	104	0.100	0.102	102	2	70-125	25	
Toluene	<0.00200	0.100	0.102	102	0.100	0.100	100	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.101	101	0.100	0.0992	99	2	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.209	105	0.200	0.199	100	5	70-131	25	
o-Xylene	<0.00100	0.100	0.102	102	0.100	0.0984	98	4	71-133	25	

Lab Batch ID: 845483 **QC- Sample ID:** 407527-003 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/26/2011 **Date Prepared:** 02/24/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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	0.0956	96	0.100	0.102	102	6	70-125	25	
Toluene	<0.00200	0.100	0.0937	94	0.100	0.100	100	7	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0956	96	0.100	0.101	101	5	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.193	97	0.200	0.206	103	7	70-131	25	
o-Xylene	<0.00100	0.100	0.0946	95	0.100	0.101	101	7	71-133	25	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Midland

Project Manager: Barrett Bole

Laboratory: ELOT

Address:

Contact:

Phone:

PO/SO #: 2001-1126

Sampler's Name: Chris Aulds

Sampler's Signature:

Proj. No.: H4117007

Project Name: Livingston Line

No/Type of Containers: 18/VOA

ANALYSIS REQUESTED: BTEX (8260)

Lab use only
Due Date:

Temp. of coolers when received (C°): 1.6

1 | 2 | 3 | 4 | 5

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	BTEX (8260)	Lab Sample ID (Lab Use Only)
W	2/18/11	1210			MW-12			2				X	407527-01
"	"	1238			MW-13			"				"	02
"	"	1300			MW-11			"				"	03
"	"	1315			MW-15			"				"	04
"	"	1341			MW-14			"				"	05
"	"	1416			MW-10			"				"	06
"	"	1440			MW-9			"				"	07
"	"	1510			MW-6			"				"	08
"	"	1544			MW-5			"				"	09
													10 NF

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	2/22/11	1515	Andrea Adam	2.22.11	15:15
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES: w/labels as seals

Results to
bwbole@terracon.com
Jbwoodall@terracon.com

Jason Henry w/Plains

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

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	Document Title: Sample Receipt Checklist
XENCO Laboratories Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa	Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Terracon / Plains

Date/Time: 2.22.11 15:15

Lab ID # : 407527

Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	No	(N/A)	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	1.6 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 418009

for

PLAINS ALL AMERICAN EH&S

Project Manager: Shawn Harris

Livingston Ridge

2001-11005

03-JUN-11

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

03-JUN-11

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

Reference: XENCO Report No: **418009**
Livingston Ridge
Project Address:

Shawn Harris:

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 418009. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 418009 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,

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

Sample Cross Reference 418009

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-11	W	May-25-11 15:00		418009-001
MW-10	W	May-25-11 15:40		418009-002
MW-9	W	May-25-11 16:20		418009-003
MW-6	W	May-25-11 17:00		418009-004
MW-15	W	May-25-11 12:00		418009-005
MW-14	W	May-25-11 12:40		418009-006
MW-13	W	May-25-11 13:30		418009-007
MW-12	W	May-25-11 14:15		418009-008

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Livingston Ridge

Project ID:	*2001-11005*	*Report Date:*	*03-JUN-11*
Work Order Number:	*418009*	*Date Received:*	*05/27/2011*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 418009

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Shawn Harris
Project Location:

Date Received in Lab: Fri May-27-11 10:06 am
Report Date: 03-JUN-11
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	418009-001		418009-002		418009-003		418009-004		418009-005		418009-006	
	Field Id:	MW-11		MW-10		MW-9		MW-6		MW-15		MW-14	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	May-25-11 15:00		May-25-11 15:40		May-25-11 16:20		May-25-11 17:00		May-25-11 12:00		May-25-11 12:40	
BTEX by EPA 8021	***Extracted:***	May-31-11 17:00		May-31-11 17:00		May-31-11 17:00		May-31-11 17:00		May-31-11 17:00		May-31-11 17:00	
	Analyzed:	Jun-01-11 06:46		Jun-01-11 07:09		Jun-01-11 07:31		Jun-01-11 07:54		Jun-01-11 08:17		Jun-01-11 08:40	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m_p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Xylenes, Total		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

Certificate of Analysis Summary 418009

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Shawn Harris
Project Location:

Date Received in Lab: Fri May-27-11 10:06 am
Report Date: 03-JUN-11
Project Manager: Brent Barron, II

Analysis Requested									
	Lab Id:	418009-007		418009-008					
	Field Id:	MW-13		MW-12					
	Depth:								
	Matrix:	WATER		WATER					
	Sampled:	May-25-11 13:30		May-25-11 14:15					
BTEX by EPA 8021	***Extracted:***	May-31-11 17:00		Jun-01-11 11:34					
	Analyzed:	Jun-01-11 09:02		Jun-01-11 14:04					
	Units/RL:	mg/L	RL	mg/L	RL				
Benzene		ND	0.0010	0.00219	0.0010				
Toluene		ND	0.0020	ND	0.0020				
Ethylbenzene		ND	0.0010	ND	0.0010				
m_p-Xylenes		ND	0.0020	ND	0.0020				
o-Xylene		0.00365	0.0010	0.00271	0.0010				
Xylenes, Total		0.00365	0.0010	0.00271	0.0010				
Total BTEX		0.00365	0.0010	0.00490	0.0010				

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

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.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

LOD Limit of Detection

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 418009,

Project ID: 2001-11005

Lab Batch #: 858146 **Sample:** 604016-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/31/11 22:53

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 858146 **Sample:** 604016-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/31/11 23:16

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 858146 **Sample:** 604016-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 00:24

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY 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	0.0304	0.0300	101	80-120	

Lab Batch #: 858146 **Sample:** 417549-014 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 05:16

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 858146 **Sample:** 417549-014 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 05:38

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	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.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 418009,

Project ID: 2001-11005

Lab Batch #: 858146 **Sample:** 418009-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 06:46

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 858146 **Sample:** 418009-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 07:09

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 858146 **Sample:** 418009-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 07:31

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 858146 **Sample:** 418009-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 07:54

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 858146 **Sample:** 418009-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 08:17

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0322	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

Work Orders : 418009, **Project ID:** 2001-11005

Lab Batch #: 858146 **Sample:** 418009-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 08:40

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 858146 **Sample:** 418009-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 09:02

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 858471 **Sample:** 604212-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 12:10

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 858471 **Sample:** 604212-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 12:33

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

Lab Batch #: 858471 **Sample:** 604212-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 13:42

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	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

Work Orders : 418009,

Project ID: 2001-11005

Lab Batch #: 858471 **Sample:** 418009-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 14:04

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 858471 **Sample:** 418009-008 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/01/11 17:52

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	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 #: 418009 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 05/31/2011 **Date Analyzed:** 05/31/2011

Lab Batch ID: 858146 **Sample:** 604016-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.101	101	0.100	0.0937	94	7	70-125	25	
Toluene	<0.00200	0.100	0.103	103	0.100	0.0960	96	7	70-125	25	
Ethylbenzene	<0.00100	0.100	0.102	102	0.100	0.0945	95	8	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.221	111	0.200	0.206	103	7	70-131	25	
o-Xylene	<0.00100	0.100	0.120	120	0.100	0.113	113	6	71-133	25	

Analyst: ASA **Date Prepared:** 06/01/2011 **Date Analyzed:** 06/01/2011

Lab Batch ID: 858471 **Sample:** 604212-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.101	101	0.100	0.103	103	2	70-125	25	
Toluene	<0.00200	0.100	0.104	104	0.100	0.106	106	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.102	102	0.100	0.105	105	3	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.219	110	0.200	0.224	112	2	70-131	25	
o-Xylene	<0.00100	0.100	0.118	118	0.100	0.121	121	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 Recoveries

Project Name: Livingston Ridge

Work Order #: 418009
Lab Batch #: 858471
Project ID: 2001-11005
Date Analyzed: 06/01/2011
Date Prepared: 06/01/2011
Analyst: ASA
QC- Sample ID: 418009-008 S
Batch #: 1
Matrix: Water
Reporting Units: mg/L

BTEX by EPA 8021B	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	0.00219	0.100	0.0889	87	70-125	
Toluene	<0.00200	0.100	0.0899	90	70-125	
Ethylbenzene	<0.00100	0.100	0.0867	87	71-129	
m_p-Xylenes	<0.00200	0.200	0.182	91	70-131	
o-Xylene	0.00271	0.100	0.0997	97	71-133	

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

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order # : 418009 **Project ID:** 2001-11005

Lab Batch ID: 858146 **QC- Sample ID:** 417549-014 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/01/2011 **Date Prepared:** 05/31/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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	0.0993	99	0.100	0.101	101	2	70-125	25	
Toluene	<0.00200	0.100	0.102	102	0.100	0.103	103	1	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0986	99	0.100	0.0992	99	1	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.211	106	0.200	0.210	105	0	70-131	25	
o-Xylene	<0.00100	0.100	0.117	117	0.100	0.114	114	3	71-133	25	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Final 1.000

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: MIDLAND, TX

Project Manager: BARRETT BOLE

Laboratory: XENCO

Address:

Contact:

Phone:

PO/SO #: 2001-11005

Sampler's Name: Josh Woodall

Sampler's Signature:

Proj. No.: A4117008

Project Name: LIVINGSTON RIDGE

No/Type of Containers

ANALYSIS REQUESTED: BTEX (8021B)

Lab use only
Due Date:

Temp. of coolers when received (C°): 5.1

1	2	3	4	5

Page ____ of ____

418009
Lab Sample ID (Lab Use Only)

	Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O
001	W	5/25	1500			MW-11			2			
002			1540			MW-10						
003			1620			MW-9						
004			1700			MW-6						
005			1200			MW-15						
006			1240			MW-14						
007			1330			MW-13						
008			1415			MW-12						

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	5/27	1006			
Relinquished by (Signature)					
Relinquished by (Signature)					
Relinquished by (Signature)			Lisa Murdock	5-27-11	10:06

NOTES: Email Results to:
jbwoodall@terracon.com
bwbole@terracon.com
smharris@paalp.com

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

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

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains
Date/Time: 5-27-11 10:06
Lab ID #: 418009
Initials: KM

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	(N/A)	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	(Yes)	No	(N/A)	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	5.1 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 426216

for

PLAINS ALL AMERICAN EH&S

Project Manager: Shawn Harris

Livingston Ridge

01-SEP-11

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
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)

01-SEP-11

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

Reference: XENCO Report No: **426216**
Livingston Ridge
Project Address:

Shawn Harris:

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 426216. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 426216 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,

Brent Barron II
Odessa Laboratory Manager

Sample Cross Reference 426216

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW15	W	08-18-11 11:00		426216-001
MW14	W	08-18-11 11:30		426216-002
MW13	W	08-18-11 11:55		426216-003
MW12	W	08-18-11 12:20		426216-004
MW11	W	08-18-11 12:50		426216-005
MW10	W	08-18-11 13:30		426216-006
MW9	W	08-18-11 14:00		426216-007
MW6	W	08-18-11 14:30		426216-008
MW5	W	08-18-11 15:00		426216-009

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Livingston Ridge

Project ID:
Work Order Number: 426216

Report Date: 01-SEP-11
Date Received: 08/22/2011

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-868676 BTEX by EPA 8021
SW8021BM

Batch 868676, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 426216-009.

Certificate of Analysis Summary 426216

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id:

Contact: Shawn Harris

Project Location:

Date Received in Lab: Mon Aug-22-11 12:00 pm

Report Date: 01-SEP-11

Project Manager: Brent Barron II

Analysis Requested	*Lab Id:*	426216-001		426216-002		426216-003		426216-004		426216-005		426216-006	
	Field Id:	MW15		MW14		MW13		MW12		MW11		MW10	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Aug-18-11 11:00		Aug-18-11 11:30		Aug-18-11 11:55		Aug-18-11 12:20		Aug-18-11 12:50		Aug-18-11 13:30	
BTEX by EPA 8021	*Extracted:*	Aug-26-11 15:00		Aug-26-11 15:00		Aug-30-11 15:49		Aug-30-11 15:49		Aug-26-11 15:00		Aug-26-11 15:00	
	Analyzed:	Aug-27-11 09:04		Aug-27-11 09:27		Aug-31-11 09:14		Aug-31-11 05:49		Aug-27-11 09:50		Aug-27-11 10:12	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	ND	0.00100	0.0248	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	0.00143	0.00100	0.00744	0.00100	ND	0.00100	ND	0.00100
m_p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	0.00294	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Xylenes, Total		ND	0.00100	ND	0.00100	ND	0.00100	0.00294	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00100	ND	0.00100	0.00143	0.00100	0.0352	0.00100	ND	0.00100	ND	0.00100

Brent Barron II
Odessa Laboratory Manager

Final 1.000

Certificate of Analysis Summary 426216

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id:

Contact: Shawn Harris

Project Location:

Date Received in Lab: Mon Aug-22-11 12:00 pm

Report Date: 01-SEP-11

Project Manager: Brent Barron II

Analysis Requested	*Lab Id:*	426216-007		426216-008		426216-009				
	Field Id:	MW9		MW6		MW5				
	Depth:									
	Matrix:	WATER		WATER		WATER				
	Sampled:	Aug-18-11 14:00		Aug-18-11 14:30		Aug-18-11 15:00				
BTEX by EPA 8021	*Extracted:*	Aug-26-11 15:00		Aug-26-11 15:00		Aug-26-11 15:00				
	Analyzed:	Aug-27-11 12:29		Aug-27-11 12:52		Aug-27-11 13:15				
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL			
Benzene		ND	0.00100	ND	0.00100	0.128	0.00100			
Toluene		ND	0.00200	ND	0.00200	0.00336	0.00200			
Ethylbenzene		ND	0.00100	ND	0.00100	0.162	0.00100			
m_p-Xylenes		ND	0.00200	ND	0.00200	0.0320	0.00200			
o-Xylene		ND	0.00100	ND	0.00100	0.0413	0.00100			
Xylenes, Total		ND	0.00100	ND	0.00100	0.0733	0.00100			
Total BTEX		ND	0.00100	ND	0.00100	0.367	0.00100			

Brent Barron II
Odessa Laboratory Manager

XENCO Laboratories

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation 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.

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

+ Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 426216,

Project ID:

Lab Batch #: 868676 **Sample:** 426216-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 09:04

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 868676 **Sample:** 426216-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 09:27

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 868676 **Sample:** 426216-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 09:50

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 868676 **Sample:** 426216-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 10:12

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY 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	0.0274	0.0300	91	80-120	

Lab Batch #: 868676 **Sample:** 426216-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 12:29

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	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

Work Orders : 426216, **Project ID:**

Lab Batch #: 868676 **Sample:** 426216-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 12:52

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0266	0.0300	89	80-120	

Lab Batch #: 868676 **Sample:** 426216-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 13:15

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0236	0.0300	79	80-120	*

Lab Batch #: 868958 **Sample:** 426216-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/31/11 05:49

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 868958 **Sample:** 426216-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/31/11 09:14

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	80-120	
4-Bromofluorobenzene	0.0239	0.0300	80	80-120	

Lab Batch #: 868676 **Sample:** 610643-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 06:24

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	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

Work Orders : 426216,

Project ID:

Lab Batch #: 868958 **Sample:** 610803-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/31/11 03:10

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 868676 **Sample:** 610643-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 04:54

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 868958 **Sample:** 610803-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/31/11 01:39

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 868676 **Sample:** 610643-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 05:17

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 868958 **Sample:** 610803-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/31/11 02:02

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	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

Work Orders : 426216,

Project ID:

Lab Batch #: 868676 **Sample:** 426217-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 10:35

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 868958 **Sample:** 426488-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/31/11 07:20

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 868676 **Sample:** 426217-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/27/11 10:58

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 868958 **Sample:** 426488-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/31/11 07:43

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	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 #: 426216 **Project ID:**

Analyst: ASA **Date Prepared:** 08/26/2011 **Date Analyzed:** 08/27/2011

Lab Batch ID: 868676 **Sample:** 610643-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0974	97	0.100	0.111	111	13	70-125	25	
Toluene	<0.00200	0.100	0.0861	86	0.100	0.0974	97	12	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0921	92	0.100	0.106	106	14	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.181	91	0.200	0.208	104	14	70-131	25	
o-Xylene	<0.00100	0.100	0.0870	87	0.100	0.0988	99	13	71-133	25	

Analyst: ASA **Date Prepared:** 08/30/2011 **Date Analyzed:** 08/31/2011

Lab Batch ID: 868958 **Sample:** 610803-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.117	117	0.100	0.115	115	2	70-125	25	
Toluene	<0.00200	0.100	0.104	104	0.100	0.102	102	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.112	112	0.100	0.110	110	2	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.226	113	0.200	0.222	111	2	70-131	25	
o-Xylene	<0.00100	0.100	0.104	104	0.100	0.104	104	0	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

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order # : 426216 **Project ID:**

Lab Batch ID: 868676 **QC- Sample ID:** 426217-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 08/27/2011 **Date Prepared:** 08/26/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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	0.115	115	0.100	0.119	119	3	70-125	25	
Toluene	<0.00200	0.100	0.101	101	0.100	0.106	106	5	70-125	25	
Ethylbenzene	<0.00100	0.100	0.111	111	0.100	0.113	113	2	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.216	108	0.200	0.222	111	3	70-131	25	
o-Xylene	<0.00100	0.100	0.105	105	0.100	0.107	107	2	71-133	25	

Lab Batch ID: 868958 **QC- Sample ID:** 426488-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 08/31/2011 **Date Prepared:** 08/30/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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	0.110	110	0.100	0.117	117	6	70-125	25	
Toluene	<0.00200	0.100	0.0964	96	0.100	0.102	102	6	70-125	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.111	111	6	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.211	106	0.200	0.223	112	6	70-131	25	
o-Xylene	<0.00100	0.100	0.0998	100	0.100	0.104	104	4	71-133	25	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Final 1.000

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Midland TX

Project Manager: Barrett Bole

Laboratory: Xenco

Address:

Contact:

Phone:

PO/SO #:

Lab use only
Due Date:

Temp. of coolers when received (C°): 3.5

1 | 2 | 3 | 4 | 5

Page 1 of 1

Sampler's Name: Nesha Ty Burrow

Sampler's Signature:

Proj. No.

Project Name: Livingston Ridge

No/Type of Containers: 18 voas

ANALYSIS REQUESTED: BTEX 8021

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	8-18-11	1100		X	MW5			2				X 426216-001
W	8-18-11	1130		X	MW14			2				X 002
W	8-18-11	1155		X	MW13			2				X 003
W	8-18-11	1220		X	MW12			2				X 004
W	8-18-11	1250		X	MW11			2				X 005
W	8-18-11	1330		X	MW10			2				X 006
W	8-18-11	1400		X	MW9			2				X 007
W	8-18-11	1430		X	MW6			2				X 008
W	8-18-11	1500		X	MW5			2				X 009

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	8-22-11	1200			
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: 8-22-11	Time: 1200

NOTES: please email results to Barrett Bole, WTBurrow@Terracon Shawn Harris@Plains

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

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

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains
Date/Time: 8.22.11 12:00
Lab ID # : 426216
Initials: BB/AR

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	(N/A)	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	No	(N/A)	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	3.5 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 431805

for

PLAINS ALL AMERICAN EH&S

Project Manager: Shawn Harris

Livingston Ridge

2001-11005

01-DEC-11

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
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)

01-DEC-11

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

Reference: XENCO Report No: **431805**
Livingston Ridge
Project Address:

Shawn Harris:

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 431805. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 431805 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,

Brent Barron II
Odessa Laboratory Manager

Sample Cross Reference 431805

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-15	W	11-17-11 10:25		431805-001
MW-14	W	11-17-11 10:45		431805-002
MW-13	W	11-17-11 11:05		431805-003
MW-12	W	11-17-11 11:15		431805-004
MW-11	W	11-17-11 11:30		431805-005
MW-10	W	11-17-11 11:45		431805-006
MW-7	W	11-17-11 12:05		431805-007
MW-2	W	11-17-11 12:20		431805-008
MW-9	W	11-17-11 12:45		431805-009
MW-6	W	11-17-11 13:00		431805-010
MW-8	W	11-17-11 13:20		431805-011

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Livingston Ridge

Project ID:	*2001-11005*	*Report Date:*	*01-DEC-11*
Work Order Number:	*431805*	*Date Received:*	*11/18/2011*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-875989 BTEX by EPA 8021
SW8021BM

Batch 875989, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 431805-003.

Certificate of Analysis Summary 431805

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Shawn Harris
Project Location:

Date Received in Lab: Fri Nov-18-11 09:20 am
Report Date: 01-DEC-11
Project Manager: Brent Barron II

Analysis Requested	*Lab Id:*	431805-001		431805-002		431805-003		431805-004		431805-005		431805-006	
	Field Id:	MW-15		MW-14		MW-13		MW-12		MW-11		MW-10	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Nov-17-11 10:25		Nov-17-11 10:45		Nov-17-11 11:05		Nov-17-11 11:15		Nov-17-11 11:30		Nov-17-11 11:45	
BTEX by EPA 8021	*Extracted:*	Nov-23-11 13:15		Nov-23-11 13:15		Nov-30-11 08:07		Nov-23-11 13:15		Nov-22-11 15:15		Nov-22-11 15:15	
	Analyzed:	Nov-26-11 20:13		Nov-26-11 20:36		Nov-30-11 15:57		Nov-26-11 20:58		Nov-23-11 03:14		Nov-23-11 03:37	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	0.00118	0.00100	0.00235	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m_p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	0.00283	0.00100	ND	0.00100	ND	0.00100
Xylenes, Total		ND	0.00100	ND	0.00100	ND	0.00100	0.00283	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00100	ND	0.00100	0.00118	0.00100	0.00518	0.00100	ND	0.00100	ND	0.00100

Brent Barron II
Odessa Laboratory Manager

Final 1.000

Certificate of Analysis Summary 431805

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Shawn Harris
Project Location:

Date Received in Lab: Fri Nov-18-11 09:20 am
Report Date: 01-DEC-11
Project Manager: Brent Barron II

Analysis Requested																	
	Lab Id:	431805-007		431805-008		431805-009		431805-010		431805-011							
	Field Id:	MW-7		MW-2		MW-9		MW-6		MW-8							
	Depth:																
	Matrix:	WATER		WATER		WATER		WATER		WATER							
	Sampled:	Nov-17-11 12:05		Nov-17-11 12:20		Nov-17-11 12:45		Nov-17-11 13:00		Nov-17-11 13:20							
BTEX by EPA 8021	***Extracted:***	Nov-22-11 15:15		Nov-22-11 15:15		Nov-22-11 15:15		Nov-22-11 15:15		Nov-22-11 15:15							
	Analyzed:	Nov-23-11 03:59		Nov-23-11 04:22		Nov-23-11 04:44		Nov-23-11 05:07		Nov-23-11 06:59							
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL						
Benzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100						
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200						
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100						
m_p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200						
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100						
Xylenes, Total		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100						
Total BTEX		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100						

Brent Barron II
Odessa Laboratory Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation 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

+ Outside XENCO's scope of NELAC Accreditation. ^ NELAC or State program does not offer Accreditation at this time.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 431805,

Project ID: 2001-11005

Lab Batch #: 875908 **Sample:** 431805-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/11 03:14

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 875908 **Sample:** 431805-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/11 03:37

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 875908 **Sample:** 431805-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/11 03:59

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0244	0.0300	81	80-120	

Lab Batch #: 875908 **Sample:** 431805-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/11 04:22

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 875908 **Sample:** 431805-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/11 04:44

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	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

Work Orders : 431805, **Project ID:** 2001-11005

Lab Batch #: 875908 **Sample:** 431805-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/11 05:07

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 875908 **Sample:** 431805-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/11 06:59

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 875777 **Sample:** 431805-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/26/11 20:13

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 875777 **Sample:** 431805-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/26/11 20:36

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 875777 **Sample:** 431805-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/26/11 20:58

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	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

Work Orders : 431805, **Project ID:** 2001-11005

Lab Batch #: 875989 **Sample:** 431805-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/30/11 15:57

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0225	0.0300	75	80-120	**
4-Bromofluorobenzene	0.0249	0.0300	83	80-120	

Lab Batch #: 875908 **Sample:** 614751-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/11 01:22

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 875777 **Sample:** 614670-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/26/11 13:06

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 875989 **Sample:** 614825-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/30/11 10:13

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 875908 **Sample:** 614751-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/22/11 23:52

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	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

Work Orders : 431805, **Project ID:** 2001-11005

Lab Batch #: 875777 **Sample:** 614670-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/26/11 11:36

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY 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	0.0266	0.0300	89	80-120	

Lab Batch #: 875989 **Sample:** 614825-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/30/11 08:41

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 875908 **Sample:** 614751-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/11 00:14

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 875777 **Sample:** 614670-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/26/11 11:58

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 875989 **Sample:** 614825-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/30/11 09:04

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	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

Work Orders : 431805,

Project ID: 2001-11005

Lab Batch #: 875908 **Sample:** 431711-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/11 05:29

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 875777 **Sample:** 431795-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/26/11 17:14

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 875989 **Sample:** 431805-003 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/30/11 16:20

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 875908 **Sample:** 431711-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/23/11 05:51

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 875777 **Sample:** 431795-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/26/11 17:36

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	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

Work Orders : 431805,

Project ID: 2001-11005

Lab Batch #: 875989 **Sample:** 431805-003 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/30/11 16:43

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	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 #: 431805 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 11/23/2011 **Date Analyzed:** 11/26/2011

Lab Batch ID: 875777 **Sample:** 614670-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.104	104	0.100	0.106	106	2	70-125	25	
Toluene	<0.00200	0.100	0.103	103	0.100	0.106	106	3	70-125	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.108	108	3	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.204	102	0.200	0.210	105	3	70-131	25	
o-Xylene	<0.00100	0.100	0.105	105	0.100	0.107	107	2	71-133	25	

Analyst: ASA **Date Prepared:** 11/22/2011 **Date Analyzed:** 11/22/2011

Lab Batch ID: 875908 **Sample:** 614751-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.112	112	0.100	0.107	107	5	70-125	25	
Toluene	<0.00200	0.100	0.112	112	0.100	0.107	107	5	70-125	25	
Ethylbenzene	<0.00100	0.100	0.117	117	0.100	0.111	111	5	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.231	116	0.200	0.218	109	6	70-131	25	
o-Xylene	<0.00100	0.100	0.116	116	0.100	0.110	110	5	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

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 431805 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 11/30/2011 **Date Analyzed:** 11/30/2011

Lab Batch ID: 875989 **Sample:** 614825-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.101	101	0.100	0.106	106	5	70-125	25	
Toluene	<0.00200	0.100	0.103	103	0.100	0.107	107	4	70-125	25	
Ethylbenzene	<0.00100	0.100	0.108	108	0.100	0.113	113	5	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.214	107	0.200	0.226	113	5	70-131	25	
o-Xylene	<0.00100	0.100	0.106	106	0.100	0.113	113	6	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 # : 431805 **Project ID:** 2001-11005

Lab Batch ID: 875777 **QC- Sample ID:** 431795-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/26/2011 **Date Prepared:** 11/23/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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	0.0959	96	0.100	0.0979	98	2	70-125	25	
Toluene	<0.00200	0.100	0.0929	93	0.100	0.0964	96	4	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0904	90	0.100	0.0960	96	6	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.156	78	0.200	0.163	82	4	70-131	25	
o-Xylene	<0.00100	0.100	0.0868	87	0.100	0.0921	92	6	71-133	25	

Lab Batch ID: 875908 **QC- Sample ID:** 431711-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/23/2011 **Date Prepared:** 11/22/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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	0.111	111	0.100	0.107	107	4	70-125	25	
Toluene	<0.00200	0.100	0.112	112	0.100	0.107	107	5	70-125	25	
Ethylbenzene	<0.00100	0.100	0.113	113	0.100	0.110	110	3	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.222	111	0.200	0.215	108	3	70-131	25	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.108	108	4	71-133	25	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order # : 431805 **Project ID:** 2001-11005

Lab Batch ID: 875989 **QC- Sample ID:** 431805-003 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/30/2011 **Date Prepared:** 11/30/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
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	0.00118	0.100	0.0890	88	0.100	0.0951	94	7	70-125	25	
Toluene	<0.00200	0.100	0.0908	91	0.100	0.0984	98	8	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0964	96	0.100	0.104	104	8	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.191	96	0.200	0.207	104	8	70-131	25	
o-Xylene	<0.00100	0.100	0.0971	97	0.100	0.105	105	8	71-133	25	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Midland

Project Manager: Barrett Bole

Laboratory: Xenco

Address:

Contact:

Phone:

PO/SO #: 2001-110005

Lab use only
Due Date:

Temp. of coolers when received (C°): 5.0

1	2	3	4	5

Page 1 of 2

Sampler's Name: Michael O'Ferrall

Sampler's Signature: Michael O'Ferrall

Proj. No.: A4117008

Project Name: Livingston Ridge

No/Type of Containers: 40

ANALYSIS REQUESTED: BTEX 8021-B

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
Water	11/17/11	1025			MW-15							431805
		1045			MW-14							
		1105			MW-13							
		1115			MW-12							
		1130			MW-11							
		1145			MW-10							
		1205			MW-7							
		1220			MW-2							
		1245			MW-9							
		1302			MW-6							

Turn around time: ☑ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Michael O'Ferrall	11/18/11	9:20			
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) J. Hernandez	Date: 11/18/11	Time: 9:20

NOTES:
Email Results to
bwbole@terracon.com
wtburrow@terracon.com

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

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

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Midland

Project Manager: Barrett Bole

Laboratory: Xenco

Address:

Contact:

Phone:

PO/SO #: 2001-11005

Sampler's Name: Michael O'Ferrall

Sampler's Signature: Michael O'Ferrall

Proj. No.: A4117008

Project Name: Livingston Ridge

No/Type of Containers: 4

ANALYSIS REQUESTED: BTEX 8021-B

Lab use only
Due Date:

Temp. of coolers when received (C°): 5.0

1 | 2 | 3 | 4 | 5

Page 2 of 2

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	11/17/11	1320			MW-8			1				431805

Turn around time: ☑ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Michael O'Ferrall	11/18/11	9:20			
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) A. Hernandez	Date: 11/18/11	Time: 9:20

NOTES:
E mail results to
bwbole@terracon.com
wtburrow@terracon.com

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

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

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains
Date/Time: 11/18/11 9:20
Lab ID # : 431805
Initials: TH

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	No	(N/A)	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	5.0 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 434321

for

PLAINS ALL AMERICAN EH&S

Project Manager: Shawn Harris

Livingston Ridge

2001-11005

09-JAN-12

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
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)

09-JAN-12

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

Reference: XENCO Report No: **434321**
Livingston Ridge
Project Address:

Shawn Harris:

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 434321. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 434321 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,

Brent Barron II
Odessa Laboratory Manager

Sample Cross Reference 434321

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-5	W	12-30-11 14:00		434321-001

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Livingston Ridge

Project ID:	*2001-11005*	*Report Date:*	*09-JAN-12*
Work Order Number:	*434321*	*Date Received:*	*12/30/2011*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-878499 SVOAs by SW-846 8270C
Initial dilutions on samples due to sample matrix.

Certificate of Analysis Summary 434321

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Shawn Harris
Project Location:

Draft

Date Received in Lab: Fri Dec-30-11 03:30 pm
Report Date: 09-JAN-12
Project Manager: Brent Barron II

Analysis Requested								
	Lab Id:	434321-001						
	Field Id:	MW-5						
	Depth:							
	Matrix:	WATER						
	Sampled:	Dec-30-11 14:00						
SVOA PAHs List SUB: E871002	***Extracted:***	Jan-04-12 11:30						
	Analyzed:	Jan-05-12 17:45						
	Units/RL:	ug/L	RL					
Acenaphthene		ND	50.0					
Acenaphthylene		ND	50.0					
Anthracene		ND	50.0					
Benzo(a)anthracene		ND	50.0					
Benzo(a)pyrene		ND	50.0					
Benzo(b)fluoranthene		ND	50.0					
Benzo(k)fluoranthene		ND	50.0					
Benzo(g,h,i)perylene		ND	50.0					
Chrysene		ND	50.0					
Dibenz(a,h)anthracene		ND	50.0					
Fluoranthene		ND	50.0					
Fluorene		ND	50.0					
Indeno(1,2,3-c,d)Pyrene		ND	50.0					
1-Methylnaphthalene		ND	25.0					
2-Methylnaphthalene		ND	50.0					
Naphthalene		ND	50.0					
Phenanthrene		ND	50.0					
Pyrene		ND	50.0					

Brent Barron II
Odessa Laboratory Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation 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

+ Outside XENCO's scope of NELAC Accreditation. ^ NELAC or State program does not offer Accreditation at this time.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders: 434321, **Project ID:** 2001-11005

Lab Batch #: 878499 **Sample:** 434321-001 / SMP **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 01/05/12 17:45

SVOA PAHs List Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	31.9	50.0	64	44-117	
2-Fluorophenol	15.8	50.0	32	30-100	
Nitrobenzene-d5	31.6	50.0	63	46-111	
Phenol-d6	7.80	50.0	16	15-94	
Terphenyl-D14	39.0	50.0	78	46-126	
2,4,6-Tribromophenol	38.8	50.0	78	48-117	

Lab Batch #: 878499 **Sample:** 616181-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 01/04/12 15:23

SVOA PAHs List Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	33.8	50.0	68	44-117	
2-Fluorophenol	31.7	50.0	63	30-100	
Nitrobenzene-d5	34.6	50.0	69	46-111	
Phenol-d6	23.1	50.0	46	15-94	
Terphenyl-D14	45.5	50.0	91	46-126	
2,4,6-Tribromophenol	33.8	50.0	68	48-117	

Lab Batch #: 878499 **Sample:** 616181-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 01/04/12 15:47

SVOA PAHs List Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	35.0	50.0	70	44-117	
2-Fluorophenol	31.3	50.0	63	30-100	
Nitrobenzene-d5	32.9	50.0	66	46-111	
Phenol-d6	25.7	50.0	51	15-94	
Terphenyl-D14	36.9	50.0	74	46-126	
2,4,6-Tribromophenol	41.8	50.0	84	48-117	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders 434321,

Project ID: 2001-11005

Lab Batch #: 878499 **Sample:** 616181-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: ug/L **Date Analyzed:** 01/04/12 16:09

SVOA PAHs List Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	35.6	50.0	71	44-117	
2-Fluorophenol	30.8	50.0	62	30-100	
Nitrobenzene-d5	33.4	50.0	67	46-111	
Phenol-d6	25.6	50.0	51	15-94	
Terphenyl-D14	37.1	50.0	74	46-126	
2,4,6-Tribromophenol	40.8	50.0	82	48-117	

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

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 434321
Analyst: MCH
Lab Batch ID: 878499
Sample: 616181-1-BKS
Units: ug/L

Date Prepared: 01/04/2012
Batch #: 1

Project ID: 2001-11005
Date Analyzed: 01/04/2012
Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

SVOA PAHs List Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Acenaphthene	<10.0	50.0	36.1	72	50.0	38.8	78	7	27-132	31	
Acenaphthylene	<10.0	50.0	36.3	73	50.0	38.8	78	7	46-108	25	
Anthracene	<10.0	50.0	38.2	76	50.0	40.0	80	5	47-145	25	
Benzo(a)anthracene	<10.0	50.0	38.5	77	50.0	39.8	80	3	33-143	25	
Benzo(a)pyrene	<10.0	50.0	38.6	77	50.0	41.3	83	7	65-135	25	
Benzo(b)fluoranthene	<10.0	50.0	39.6	79	50.0	41.5	83	5	24-159	25	
Benzo(k)fluoranthene	<10.0	50.0	37.9	76	50.0	40.9	82	8	25-125	25	
Benzo(g,h,i)perylene	<10.0	50.0	37.7	75	50.0	39.1	78	4	65-135	25	
Chrysene	<10.0	50.0	39.6	79	50.0	40.9	82	3	65-135	25	
Dibenz(a,h)anthracene	<10.0	50.0	38.4	77	50.0	39.7	79	3	50-125	25	
Fluoranthene	<10.0	50.0	39.6	79	50.0	41.8	84	5	47-125	25	
Fluorene	<10.0	50.0	36.2	72	50.0	39.4	79	8	48-139	25	
Indeno(1,2,3-c,d)Pyrene	<10.0	50.0	38.7	77	50.0	40.1	80	4	27-160	25	
Naphthalene	<10.0	50.0	35.3	71	50.0	37.3	75	6	26-175	25	
Phenanthrene	<10.0	50.0	37.5	75	50.0	40.1	80	7	65-135	25	
Pyrene	<10.0	50.0	38.3	77	50.0	39.8	80	4	23-152	31	

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

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Midland

Project Manager: Barrett Bole

Laboratory: Xenco

Address:

Contact:

Phone:

PO/SO #: A4117008

Analysis Requested: 24H

Lab use only
Due Date:

Temp. of coolers when received (C°): 1.6

1	2	3	4	5

Page ____ of ____

Sampler's Name: Michael O'Farrell

Sampler's Signature: Michael O'Farrell

$66 1/3

Proj. No.: A4117008

Project Name: Livingston Ridge

No/Type of Containers: 1

Lab Sample ID (Lab Use Only): 434327-1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	12/30/11			1	MW-5							-001

Turn around time: [X] Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Michael O'Farrell	12/30/11	3:30			
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:
			A. Herrera	12/30/11	3:30

NOTES: Email results to
dw bole @ terracon com
w t burrow @ terracon . com

1 L Amber

Matrix: W - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other ____

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

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Jacobs
Date/Time: 12/30/11 15:30
Lab ID # : 434321
Initials: AH

Sample Receipt Checklist

1. Samples on ice?						Blue	(Water)	No			
2. Shipping container in good condition?						(Yes)	No	None			
3. Custody seals intact on shipping container (cooler) and bottles?						Yes	No	(N/A)			
4. Chain of Custody present?						(Yes)	No				
5. Sample instructions complete on chain of custody?						(Yes)	No				
6. Any missing / extra samples?						Yes	(No)				
7. Chain of custody signed when relinquished / received?						(Yes)	No				
8. Chain of custody agrees with sample label(s)?						(Yes)	No				
9. Container labels legible and intact?						(Yes)	No				
10. Sample matrix / properties agree with chain of custody?						(Yes)	No				
11. Samples in proper container / bottle?						(Yes)	No				
12. Samples properly preserved?						(Yes)	No	N/A			
13. Sample container intact?						(Yes)	No				
14. Sufficient sample amount for indicated test(s)?						(Yes)	No				
15. All samples received within sufficient hold time?						(Yes)	No				
16. Subcontract of sample(s)?						(Yes)	No	N/A			
17. VOC sample have zero head space?						Yes	No	(N/A)			
18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.			
lbs	16 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C		

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: client sampled, put samples on ice & brought straight to lab

Check all that apply:
- [X] Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- [ ] Initial and Backup Temperature confirm out of temperature conditions
- [ ] Client understands and would like to proceed with analysis

APPENDIX D

CD of 2011 Annual Groundwater Monitoring Report