1R - 398

Annual GW Mon. REPORTS

DATE:

2008

2008 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 IR-0398

Terracon Project Number A4077008

December 17, 2008

Prepared for:

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

Prepared by:

Terracon

Midland, Texas

PLAINS
ALL AMERICAN

RECEIVED
2009 MAR 24 AM 10 14

March 19, 2009

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

Re: Plains All American – 2008 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

Jason Henry
Remediation Coordinator
Plains All American

CC: Larry Johnson, NMOCD, Hobbs, NM

Enclosures

December 17, 2008

Terracon
Consulting Engineers & Scientists

Terracon Consultants, Inc.
24 Smith Road, Suite 261
Midland, Texas 79705
Phone 432.684.9600
Fax 432.684.9608
www.terracon.com

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: 2008 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 IR – 0398
Plains Pipeline, L.P. SRS Number 2001-11005
Terracon Project Number A4077008

Dear Mr. Henry:

Terracon is pleased to submit four copies of the 2008 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:

Catharine London, P. G.
Senior Project Manager

Reviewed by:

Barrett W. Bole, P. G.
Office Manager

TABLE OF CONTENTS

Terracon

Page No.

LIST OF APPENDICES

2008 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 IR – 0398

Terracon Project Number A4077008

1.0 INTRODUCTION

1.1 Site Description

Site Name	Livingston Ridge to Hugh - P. Sims
Site Location	Approximately 5 miles north-northeast of Eunice, Lea County, New Mexico on Loop 207
General Site Description	Pipeline right-of-way surrounded by native pasture land, in close proximity of the 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 a 2006 Annual Groundwater Monitoring and Soil Closure Status Reports and a 2007 Annual Groundwater Monitoring Report for submittal to the NMOCD. Four quarterly groundwater monitoring and sampling events were conducted during 2007 by Terracon. The events were performed on February 29, 2008, May 28, 2008, August 21, 2008 and November 8, 2008 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) (quarterly), and total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAHs), (annually). TPH and PAH samples were collected from all sixteen of the wells on February 29, 2008.

At the direction of the NMOCD, Plains began conducting annual sampling of all monitor wells, even wells containing PSH, for TPH, BTEX and PAHs annually in 2008 and BTEX for the remainder of the three quarterly sampling events.

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 29, 2008, May 28, 2008, August 21, 2008 and November 8, 2008 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 phase separated hydrocarbons (PSH). Based on the gauging data, PSH was present during

2008 in temporary monitor well TMW-1 at thicknesses ranging from a 0.02 feet to 1.74 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 2008 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 2008. Prior to sample collection, each of these monitor wells was purged with a disposable bailer until three well volumes of water were removed, or the well failed to recharge. Following purging, a groundwater sample was collected using the disposable bailer.

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 Environmental Lab of Texas, a 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 and TPH using EPA SW-846 Method 8015M and PAHs using EPA SW-846 Method 8270C in February 2008.

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 2008 indicated the general groundwater gradient was consistent with previous sampling events:

- The gradient/direction during the February 2008 sampling event was 0.002 ft/ft and toward the southeast;
- The gradient/direction during the May 2008 sampling event was 0.002 ft/ft and toward the southeast;
- The gradient/direction during the August 2008 sampling event was 0.002 ft/ft and toward the southeast; and
- The gradient/direction during the November 2008 sampling event was 0.003 ft/ft and toward the southeast.

Groundwater flow direction remained relatively consistent throughout 2008, to the southeast. Water level measurement data is summarized in Table 1 in Appendix B.

Groundwater elevations in 2008 declined approximately ½ foot in all monitor wells at the site. In order to enhance recovery at the site, Oxygen Release Compound (ORC™) socks were installed in monitor wells MW-4, MW-7, MW-8 and MW-9 in May 2008. At this time, Terracon began monitoring natural attenuation parameters in select wells at the site on a monthly basis. Natural attenuation parameters can be found in Table 4 in Appendix B of this report.

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 during the first quarter on February 29, 2008. The first quarter results are summarized below:

- TPH was not detected above laboratory reporting limits in the groundwater samples obtained from monitor wells MW-3, MW-4, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, and MW-15.

- TPH was detected in the groundwater samples collected from monitor wells MW-1 (at 7.12 mg/l), MW-2 (at 6.66 mg/l), MW-5 (at 21.16 mg/l) and TMW-1 (at 23.66 mg/l); however, the NMWQCC has not established a groundwater standard for TPH;

- Benzene constituents were not detected at concentrations above the laboratory reporting limit and/or NMWQCC groundwater standard in the groundwater samples collected from monitor wells MW-1, MW-2, MW-3, and MW-5 through MW-15;

- Benzene was detected in the groundwater samples collected from monitor wells MW-4 (at 0.0578 mg/l) and TMW-1 (at 3.004 mg/l), which exceeded the NMWQCC groundwater standard of 0.01 mg/l for benzene;

- Ethylbenzene was detected at a concentration of 1.046 mg/l and total xylenes were detected at a concentration of 1.838 mg/l, in the groundwater sample collected from TMW-1, which exceeded their respective NMWQCC groundwater standards of 0.75 mg/l and 0.62 mg/l. Toluene was not detected above the laboratory reporting limit in the groundwater sample collected from TMW-1;

- Toluene, ethylbenzene and total xylenes were not detected above their respective laboratory reporting limits and/or the NMWQCC groundwater standards in the remainder of the groundwater samples collected from the monitor wells (MW-1 through MW-15) at the site;

- PAH constituents were not detected at concentrations above their respective laboratory reporting limits and/or NMWQCC groundwater standards in the groundwater samples collected from monitor wells MW-1 through MW-4, and MW-6 through MW-15; and,

- Naphthalene was detected in the groundwater samples collected from monitor wells MW-5 (at 0.031 mg/l) and TMW-1 (at 0.069 mg/l), concentrations which exceeded the NMWQCC groundwater standard of 0.03 mg/l for naphthalene. Other PAH constituents were not detected in the groundwater samples collected from monitor wells MW-5 and TMW-1 at concentrations exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standards.

2nd Quarter

Groundwater samples were collected during the second quarter on May 28, 2008. The second quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in May 2008 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 2008;

- The groundwater samples collected from monitor wells MW-6 and 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 any of the groundwater samples collected from the monitor wells at concentrations exceeding their respective laboratory reporting limits and/or the NMWQCC groundwater standards.

3rd Quarter

Groundwater samples were collected during the third quarter on August 21, 2008. The third quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in August 2008 as they are on a sample reduction schedule. These wells are groundwater monitor wells MW-2, MW-3, MW-7 and MW-8;

- Groundwater monitor wells MW-1 and TMW-1 were not sampled during August 2008, due to the presence of PSH in the wells;

- The groundwater samples collected from monitor wells MW-6, MW-9, MW-10, MW-11, MW-13, MW-14 and MW-15 did not contain benzene at concentrations exceeding the laboratory reporting limit and/or NMWQCC groundwater standard;

- Benzene was detected in the groundwater samples collected from MW-4 (at 0.0232 mg/l), MW-5 (at 0.0107 mg/l) and MW-12 (at 0.0518 mg/l), at concentrations which exceed the NMWQCC groundwater standard; and,

- Toluene, ethylbenzene and total xylenes were not detected at concentrations exceeding their respectively laboratory reporting limits and/or NMWQCC groundwater standards in any of the groundwater samples collected from monitor wells at the site.

4th Quarter

Groundwater samples for the fourth quarter event were collected on November 8, 2008. Results of the fourth quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in November 2008 as they are on a sample reduction schedule. These wells are groundwater monitor wells MW-2, MW-3, MW-7 and MW-8;

- Groundwater monitor wells MW-1 and TMW-1 were not sampled during November 2008, due to the presence of PSH in the wells;

- Benzene was not detected in the groundwater samples collected from monitor wells MW-6 and MW-9 through MW-15 at concentrations which exceeded the laboratory reporting limit and/or their NMWQCC groundwater standard for benzene;

- The groundwater samples collected from monitor wells MW-4 (at 0.0374 mg/l) and MW-5 (at 0.2551 mg/l) contained benzene at concentrations exceeding the NMWQCC groundwater standard for benzene; and,

- Toluene, ethylbenzene and total xylenes were not detected at concentrations exceeding their respectively laboratory reporting limits and/or NMWQCC groundwater standards in any of the groundwater samples collected from monitor wells at the site.

3.3 Historical Data Comparisons

Measurable PSH has not been present in the groundwater monitor wells MW-2 and MW-6 through MW-15 since they were installed at the site. Monitor wells that historically contained PSH (MW-1, MW-4, MW-5) have had PSH present as a sheen in 2008. 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 5.45 feet. The PSH has diminished in this well since it was installed and in 2008 the thickest PSH measurement was at 1.74 feet in July 2008.

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 at concentrations exceeding their respectively laboratory reporting limits and/or NMWQCC groundwater standards in any of the groundwater samples collected from monitor wells at the site in 2008.

At the direction of the NMOCD, TPH was sampled for the first time in the groundwater samples collected from all monitor wells in February 2008. Groundwater samples collected from monitor wells MW-3, MW-4, and MW-6 through MW-15 did not contain TPH at concentrations exceeding the laboratory reporting limit. TPH was detected in the groundwater samples collected from monitor wells MW-1, MW-2, MW-5 and TMW-1 at concentrations exceeding laboratory reporting limits; however, the NMWQCC has not established a groundwater standard for TPH.

4.0 FINDINGS AND RECOMMENDATION

4.1 Findings

The annual groundwater report presents the results of four groundwater monitoring and sampling events for the 2008 calendar year.

- Measurable PSH was detected in temporary monitor well TMW-1 in during 2008, at thicknesses ranging from 0.02 feet to 1.74 feet;

- PSH was detected periodically as a sheen in monitor wells MW-1, MW-4 and MW-5 in 2008;

- The groundwater gradient during each quarterly sampling event for 2008, indicate a relatively consistent southeast groundwater flow direction;

- Four groundwater monitor wells (MW-2, MW-3, MW-7 and MW-8) are on a sample reduction program and are sampled annually in February for TPH, PAHs and BTEX constituents;

- The groundwater samples collected from monitor wells MW-2, MW-3, MW-6, MW-7 and MW-8 have not contained TPH, PAHs or BTEX constituents above their respective laboratory reporting limits and/or their NMWQCC groundwater standards since they were installed in September 2002 at the site;

- The groundwater samples collected from monitor wells MW-1, MW-2, MW-5 and TMW-1 contained TPH in February 2008 at concentrations exceeding the laboratory reporting limit; however, the NMWQCC has no established groundwater standard for TPH. The remainder of the groundwater samples collected in February 2008 did not contain TPH above the laboratory reporting limit;

- The groundwater sample collected from monitor well MW-5 contained naphthalene at a concentrations exceeding the NMWQCC groundwater standard for naphthalene. The remainder of the groundwater samples collected in February 2008 did not contain PAH constituents exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standards;

- Groundwater samples collected from monitor wells MW-1, MW-6, MW-9, MW-10, MW-11, MW-13, MW-14 and MW-15 have not contained benzene concentrations exceeding the laboratory reporting limit and/or NMWQCC groundwater standard in 2008;

- Groundwater samples collected from monitor wells MW-4 (February 2008, August 2008 and November 2008); MW-5 (August 2008 and November 2008); MW-12 (August 2008), and TMW-1 (February 2008) contained benzene at concentrations exceeding the NMWQCC groundwater standard;

- Ethylbenzene, and m,p-xylenes were detected in the groundwater sample collected from monitor well TMW-1 in February 2008 at concentrations which exceeded their respective NMWQCC groundwater standards;

- Toluene, ethylbenzene and total xylenes were not detected in any of the remainder of the groundwater samples collected in 2008, at concentrations exceeding their respective laboratory reporting limits and/or their NMWQCC groundwater standards; and

- The extent of the PSH plume and the dissolved phase plume exceeding the NMWQCC groundwater standards have been defined. Detected concentrations of BTEX and PAHs have demonstrated a decreasing trend since groundwater sampling activities were initiated.

5.2 RECOMMENDATIONS

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

- Continue PSH recovery purging groundwater from select wells at the site on a weekly schedule to enhance recovery at the site;
- Continue annual groundwater sampling for BTEX, TPH and PAHs for all groundwater monitor wells at the site in February 2009; and,
- Continue quarterly groundwater sampling for BTEX in groundwater for all monitor wells not containing PSH in May, August and November 2009; and,
- Submit an annual report to the NMOCD detailing the 2009 site activities.

DISTRIBUTION

Copy 1: Mr. Edward J. Hansen, Hydrologist
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Copy 2: Mr. Larry Johnson
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 1
1625 French Drive
Hobbs, New Mexico 88240

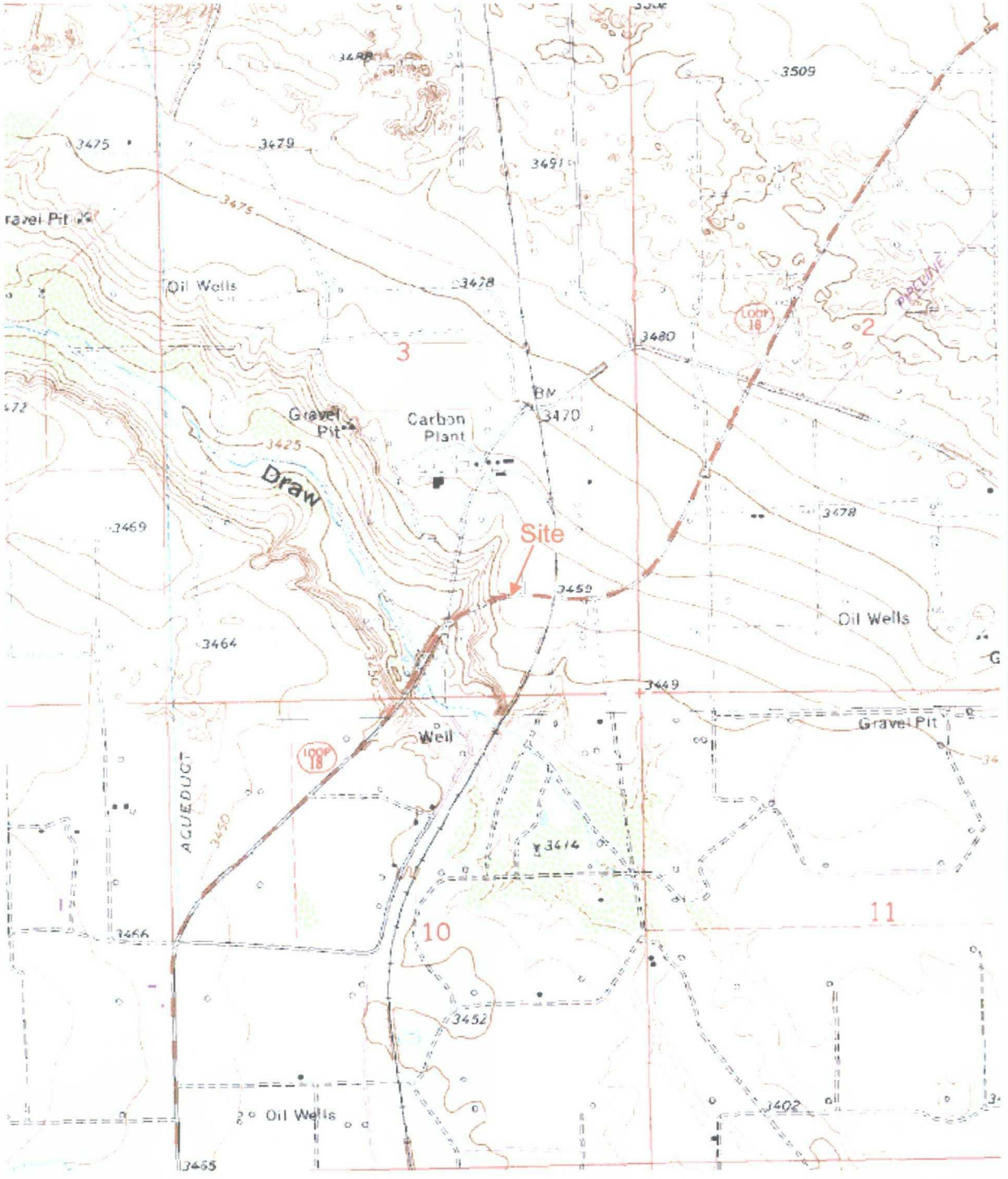
Copy 3: Mr. Jason Henry
Plains Marketing, L.P.
2530 State Highway 214
Denver City, Texas 79323
jhenry@paalp.com

Copy 4: Mr. Jeff Dann
Plains Marketing, L.P.
333 Clay Street, Suite 1600
Houston, Texas 77002
jpdann@paalp.com

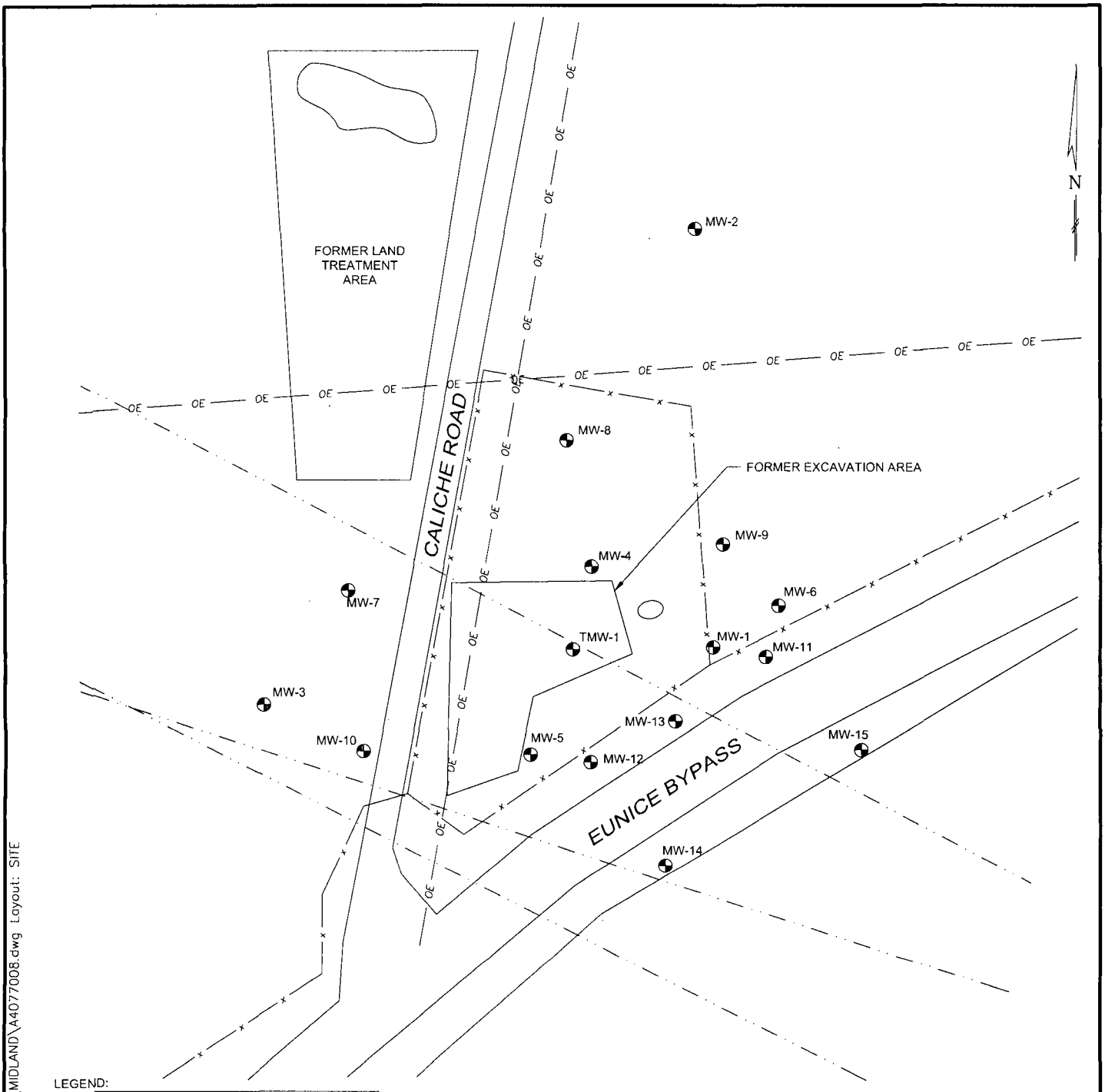
Copy 5: Ms. Catharine London
Terracon Consultants
24 Smith Road, Suite 261
Midland, Texas 79705
chlondon@terracon.com

APPENDIX A

Figure 1 – Topographic Map
Figure 2 – Site Plan
Figure 3 – Groundwater Gradient Map (02/29/08)
Figure 4 – Groundwater Gradient Map (05/28/08)
Figure 5 – Groundwater Gradient Map (08/21/08)
Figure 6 – Groundwater Gradient Map (11/06/08)
Figure 7 – Groundwater Contaminant Concentration Map (02/29/08)
Figure 8 – Groundwater Contaminant Concentration Map (05/28/08)
Figure 9 – Groundwater Contaminant Concentration Map (08/21/08)
Figure 10 – Groundwater Contaminant Concentration Map (11/08/08)



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	
PROJECT NO. A4077008			**FIGURE 1: TOPOGRAPHIC MAP**



Date: 02/15/08 O:\HBC\MIDLAND\A4077008.dwg Layout: SITE

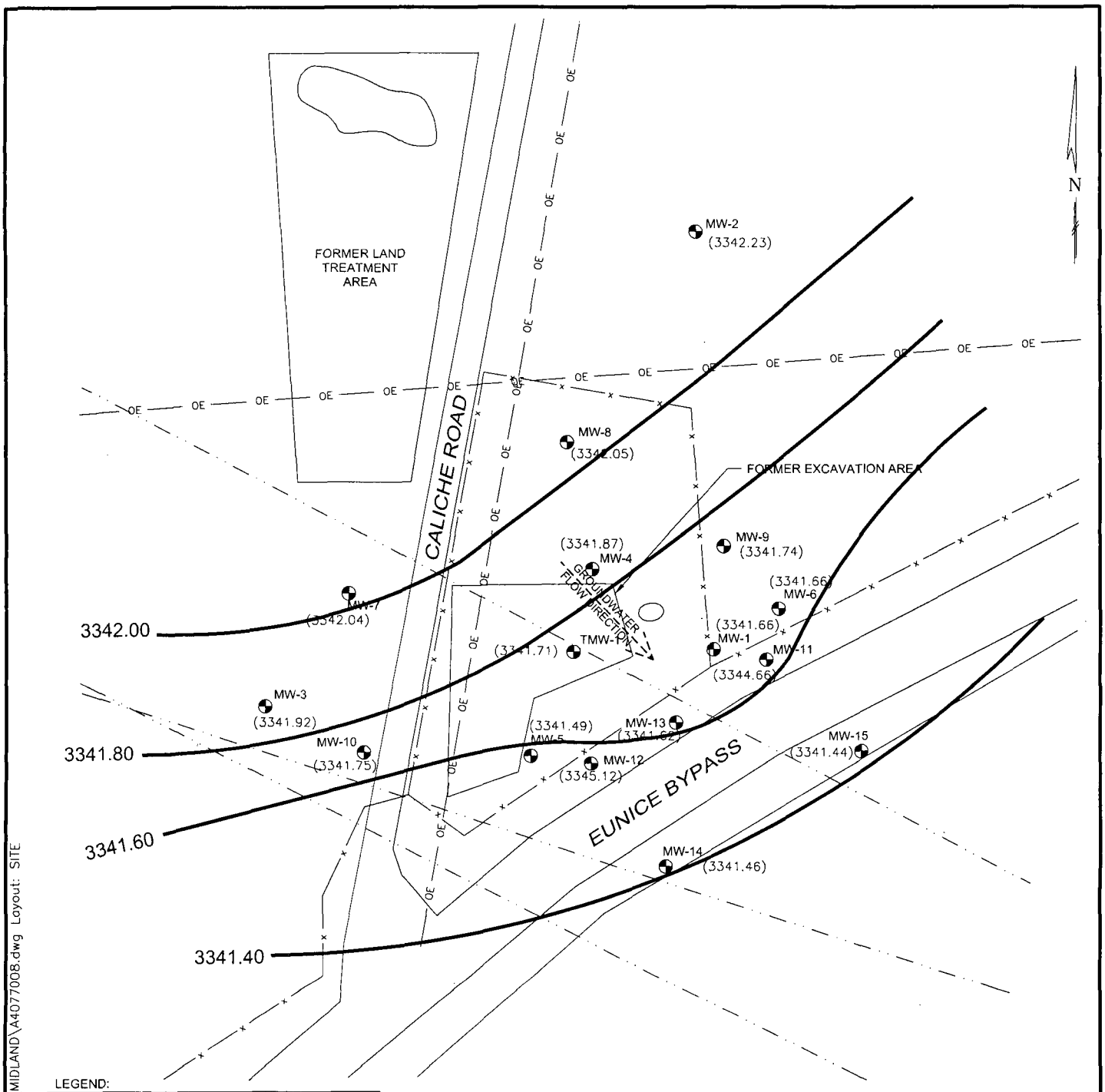
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

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



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OE — OVERHEAD ELECTRIC LINE
- (3341.92) GROUNDWATER ELEVATION
- 3342.00 GROUNDWATER ELEVATION CONTOUR LINE

MW-11 THE GROUNDWATER ELEVATIONS FOR MW-12 THESE WELLS WERE NOT USED DUE TO THE DIFFERENCE IN DEPTH WITH RESPECT TO THE OTHER WELLS

Date: 03/28/08 O:\HBC\MIDLAND\A4077008.dwg Layout: SITE

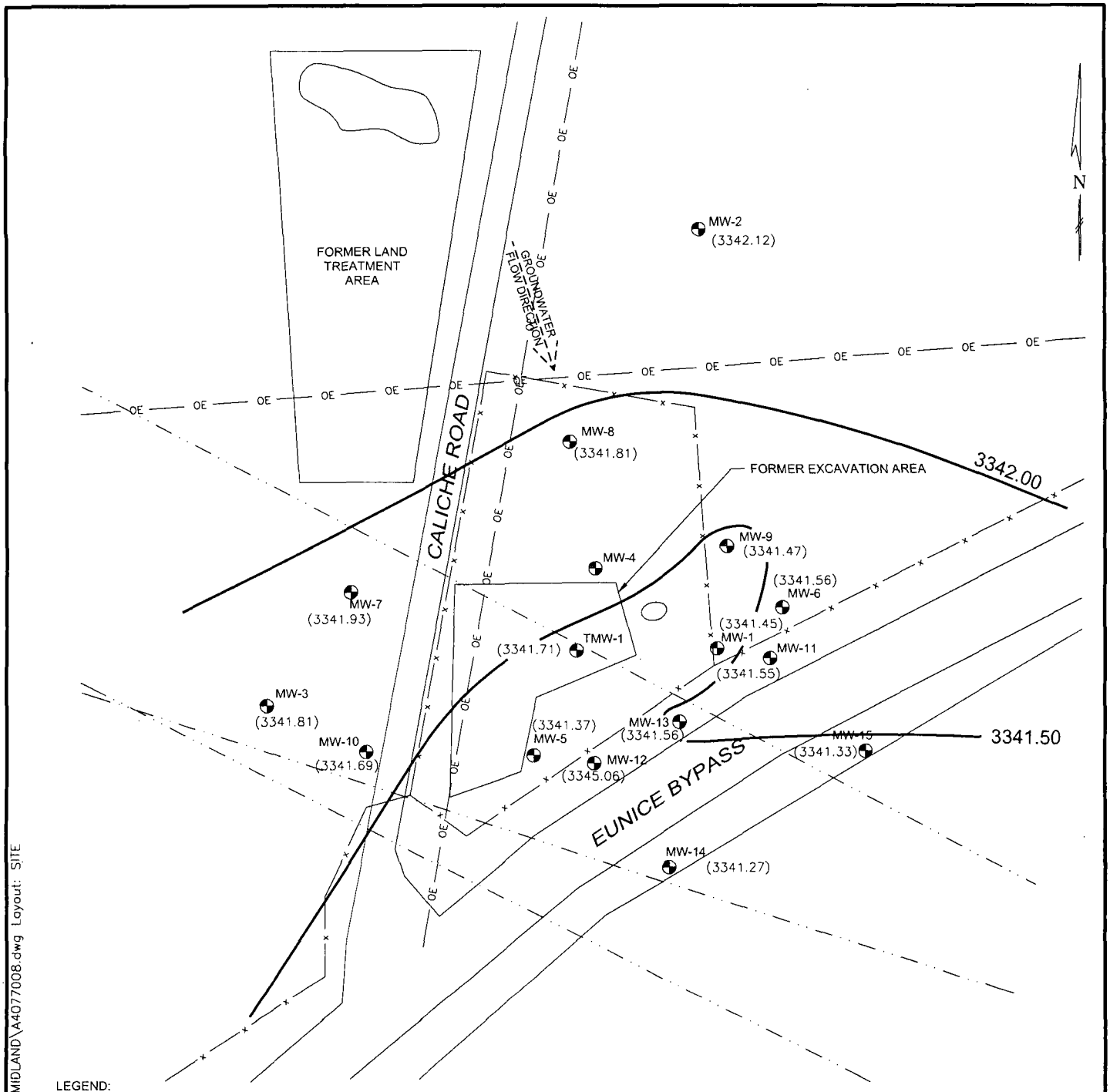
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

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 3: GROUNDWATER GRADIENT MAP (02/29/08)



Date: 06/06/08 O:\HBC\MIDLAND\A4077008.dwg Layout: SITE

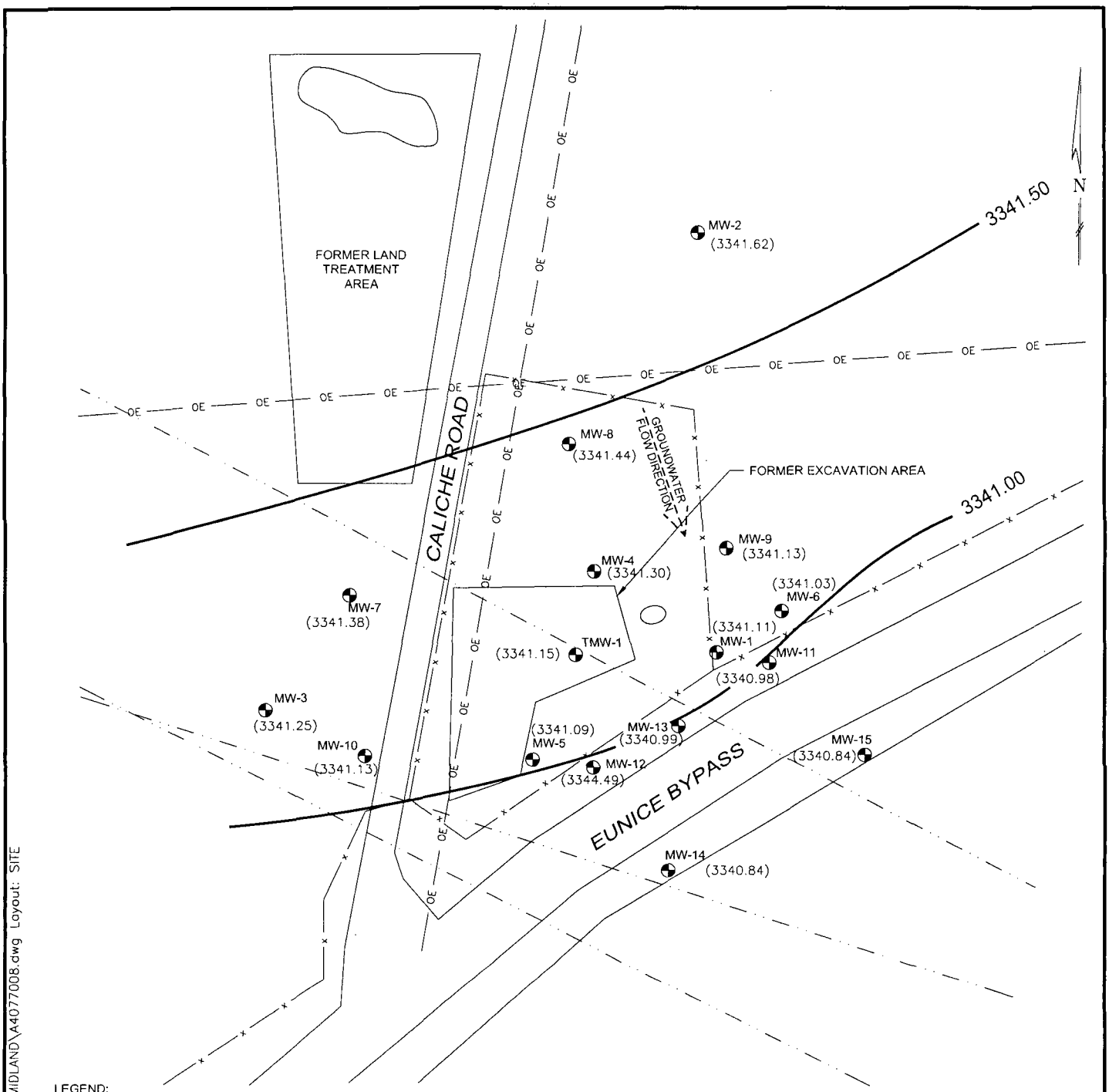
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

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 4: GROUNDWATER GRADIENT MAP (05/28/08)



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OVERHEAD ELECTRIC LINE
- (3341.11) GROUNDWATER ELEVATION
- 3341.00 GROUNDWATER ELEVATION CONTOUR LINE

MW-12 THE GROUNDWATER ELEVATION FOR THIS WELL WAS NOT USED DUE TO THE DIFFERENCE IN DEPTH WITH RESPECT TO THE OTHER WELLS

Date: 11/14/08 O:\HBC\MIDLAND\A4077008.dwg Layout: SITE

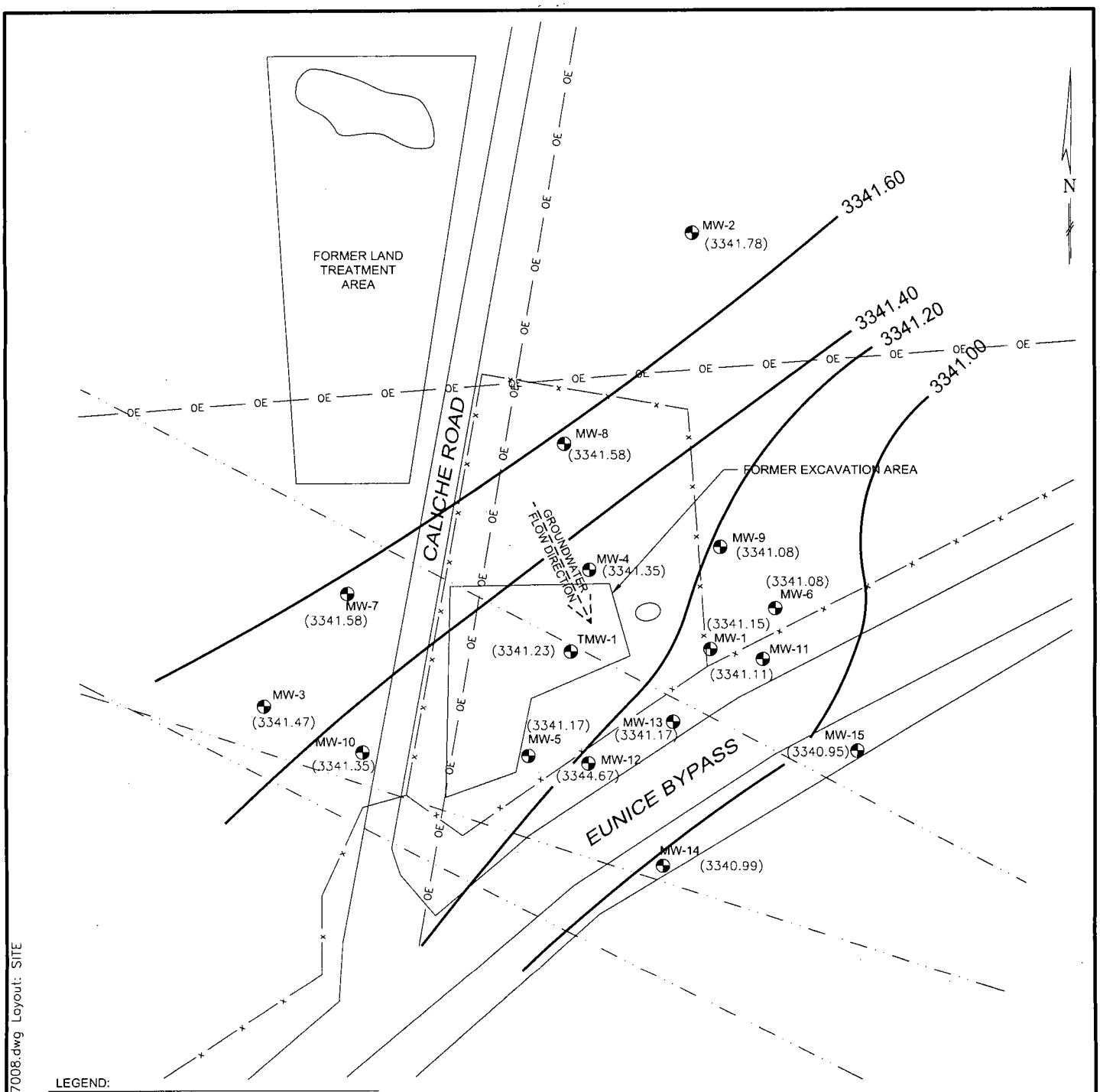
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

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 5: GROUNDWATER GRADIENT MAP (08/21/08)



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OVERHEAD ELECTRIC LINE
- (3341.15) GROUNDWATER ELEVATION
- 3341.00 GROUNDWATER ELEVATION CONTOUR LINE

MW-12 THE GROUNDWATER ELEVATION FOR THIS WELL WAS NOT USED DUE TO THE DIFFERENCE IN DEPTH WITH RESPECT TO THE OTHER WELLS

Date: 12/03/08 O:\A4077008.dwg Layout: SITE

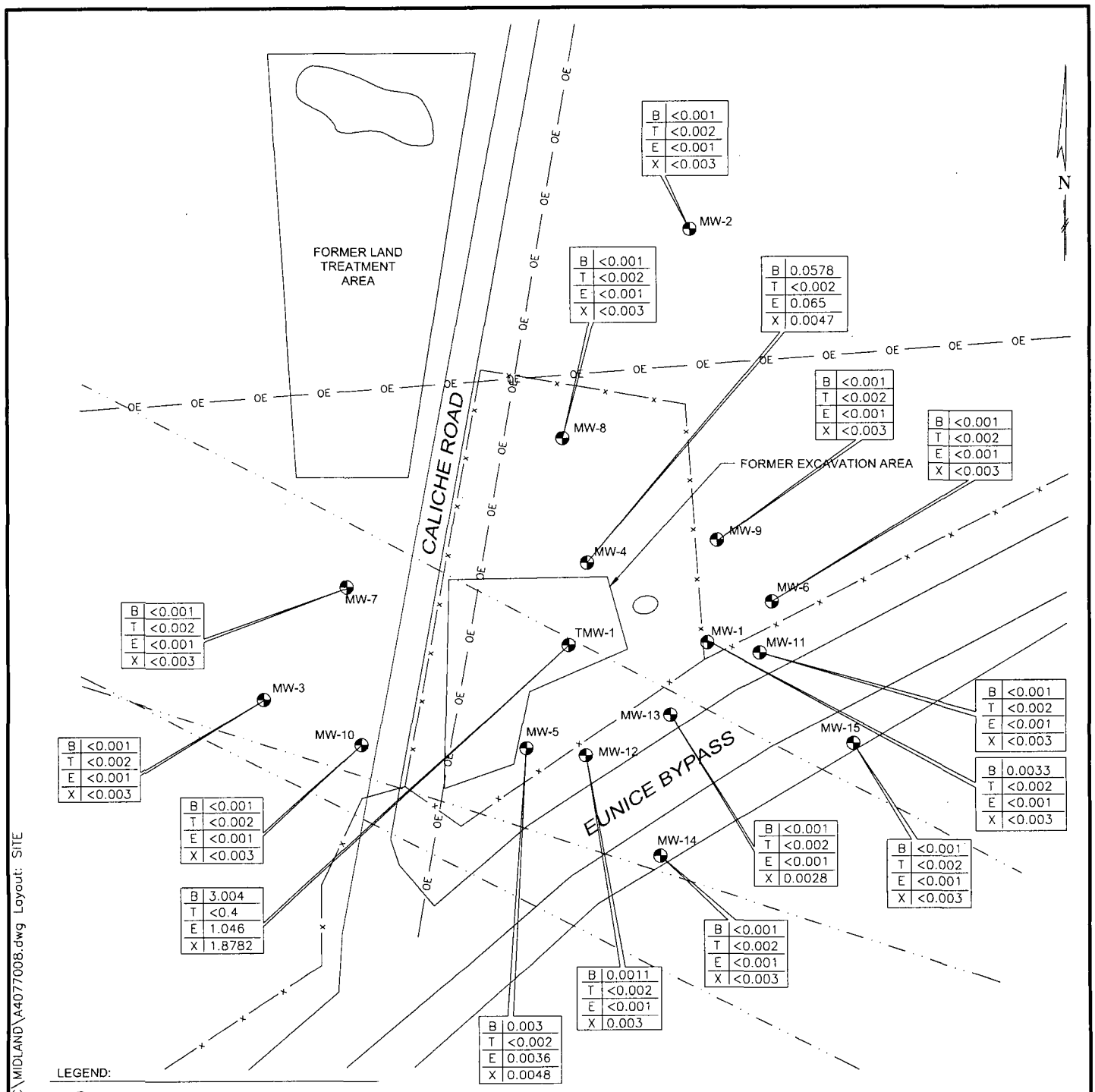
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

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 6: GROUNDWATER GRADIENT MAP (11/06/08)



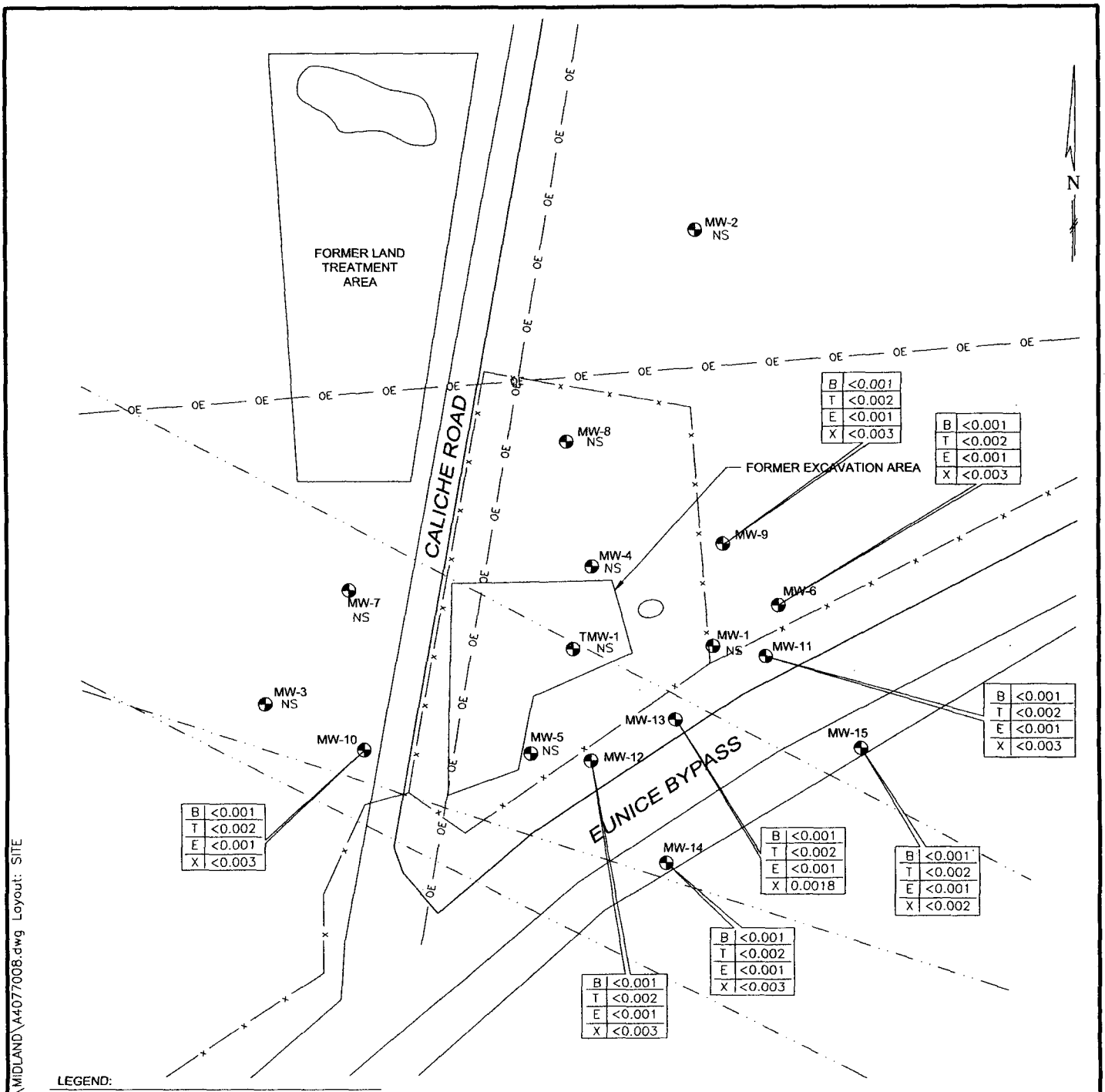
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

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 7: GROUNDWATER CONTAMINANT CONCENTRATION MAP (02/29/08)



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OE — OVERHEAD ELECTRIC LINE
- B — BENZENE
- T — TOLUENE
- E — ETHYLBENZENE
- X — TOTAL XYLENES
- NS — NOT SAMPLED

CONCENTRATIONS ARE IN mg/L

Date: 12/18/08 O:\HBC\MIDLAND\A4077008.dwg Layout: SITE

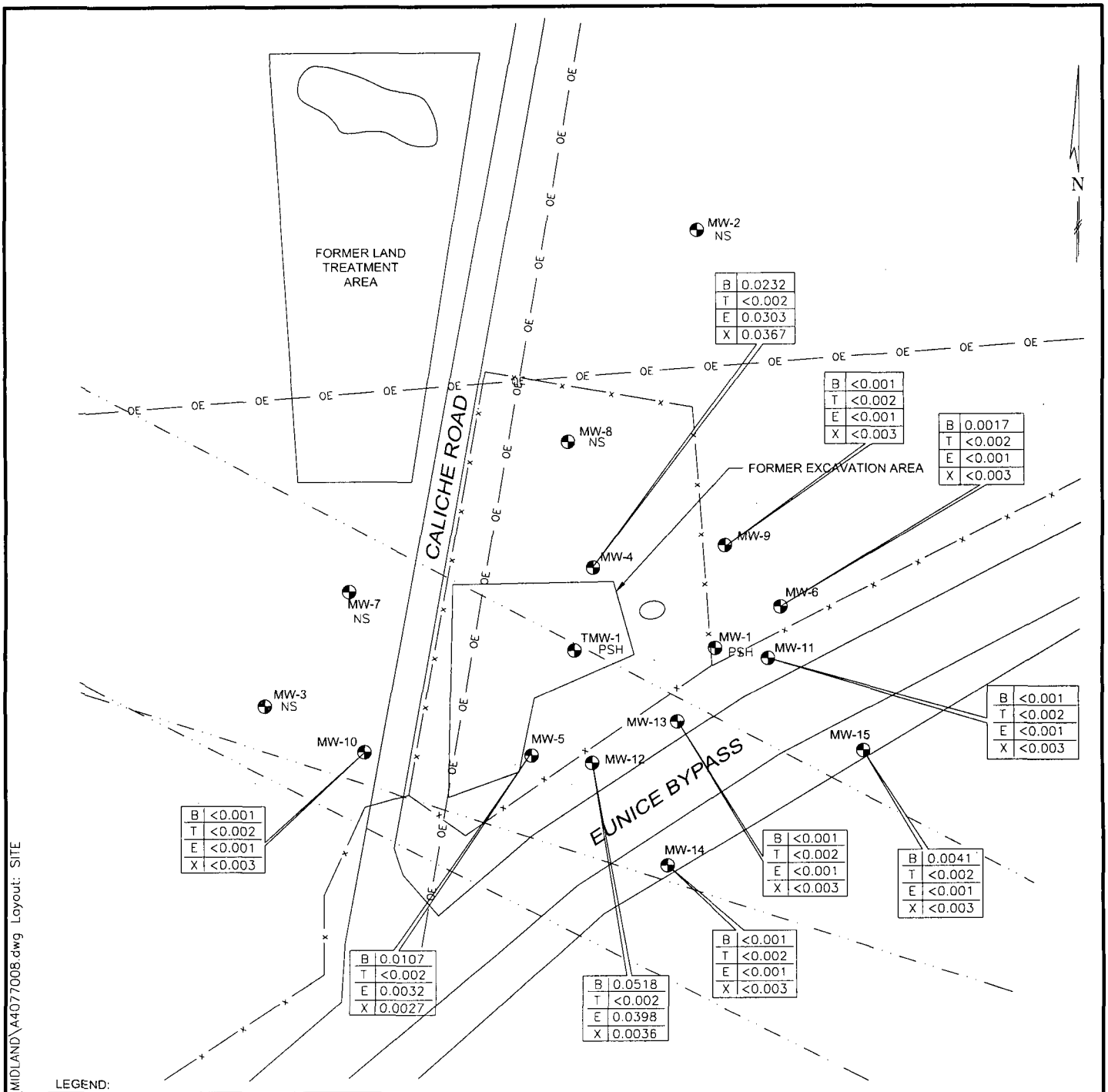
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

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 8: GROUNDWATER CONTAMINANT CONCENTRATION MAP (05/28/08)



LEGEND:

- MONITOR WELL LOCATION
- PSH PHASE SEPARATED HYDROCARBONS
- FENCE
- OIL PIPELINE
- OE OVERHEAD ELECTRIC LINE
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X TOTAL XYLENES
- NS NOT SAMPLED

CONCENTRATIONS ARE IN mg/L

Date: 11/14/08 O:\HBC\MIDLAND\A4077008.dwg Layout: SITE

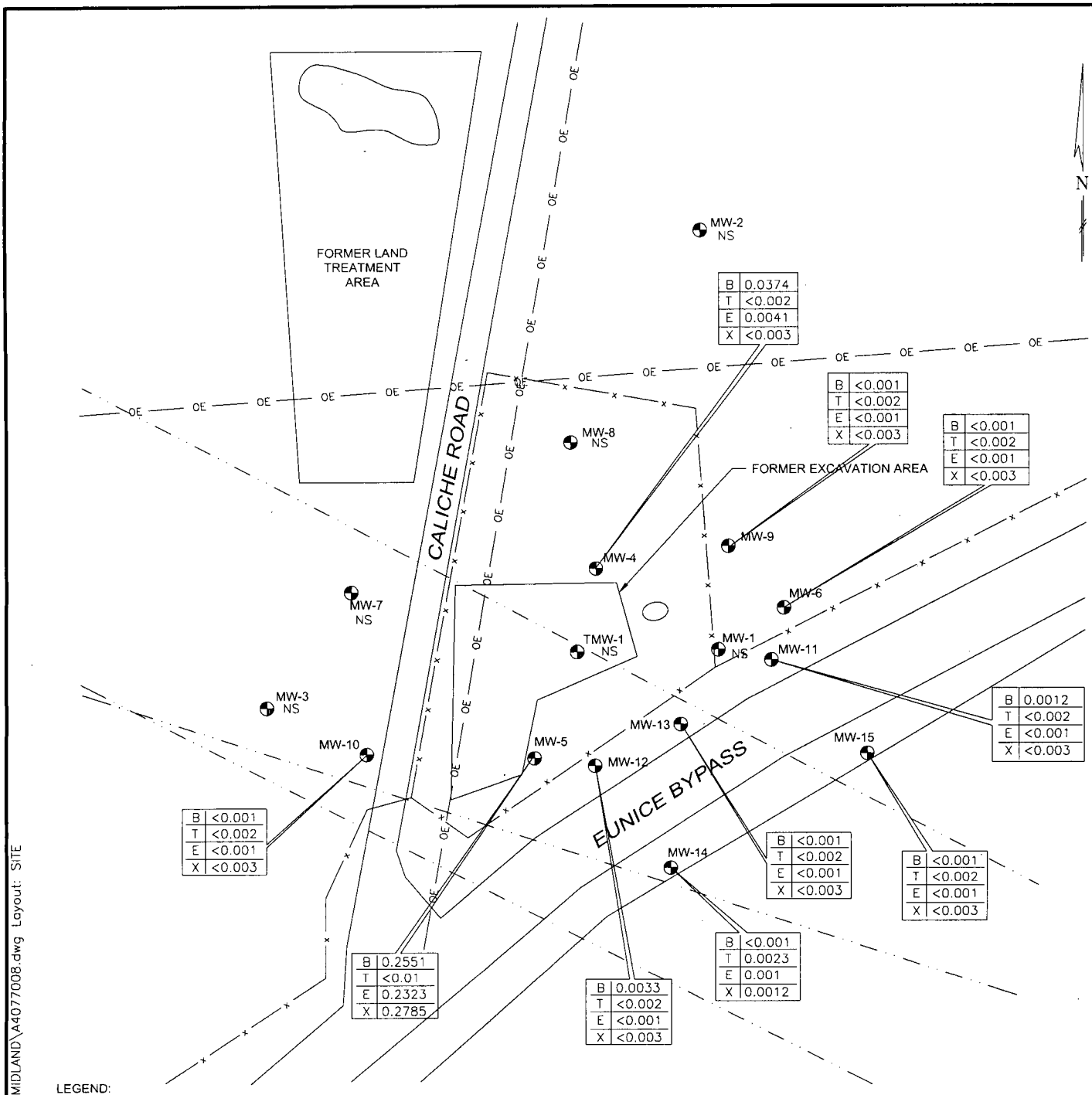
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

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 9: GROUNDWATER CONTAMINANT CONCENTRATION MAP (08/21/08)



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OVERHEAD ELECTRIC LINE
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X TOTAL XYLENES
- NS NOT SAMPLED

CONCENTRATIONS ARE IN mg/L

Date: 12/04/08 O:\HBC\MIDLAND\A4077008.dwg Layout: SITE

THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

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 10: GROUNDWATER CONTAMINANT CONCENTRATION MAP (11/08/08)

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 A4077008

All elevations are measured in feet above mean sea level

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED	Volume Purged
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 - 2	11/16/07	3,378.27	0.00	35.88	0.00	3,342.39	0.00	0.00
MW - 2	02/29/08		0.00	36.04	0.00	3,342.23	0.00	0.00
MW - 2	05/28/08		0.00	36.15	0.00	3,342.12	0.00	0.00
MW - 2	08/21/08		0.00	36.65	0.00	3,341.62	0.00	0.00
MW - 2	11/06/08		0.00	36.49	0.00	3,341.78	0.00	0.00
MW - 3	11/16/07	3,367.36	0.00	25.28	0.00	3,342.08	0.00	0.00
MW - 3	02/29/08		0.00	25.44	0.00	3,341.92	0.00	0.00
MW - 3	05/28/08		0.00	25.55	0.00	3,341.81	0.00	0.00
MW - 3	08/21/08		0.00	26.11	0.00	3,341.25	0.00	0.00
MW - 3	11/06/08		0.00	25.89	0.00	3,341.47	0.00	0.00
MW - 4	12/27/07	3,372.73	0.00	30.69	0.00	3,342.04	0.00	0.00
MW - 4	01/18/08		0.00	30.78	0.00	3,341.95	0.00	0.00
MW - 4	02/20/08		0.00	31.83	0.00	3,340.90	0.00	0.00
MW - 4	02/29/08		0.00	30.86	0.00	3,341.87	0.00	0.00
MW - 4	04/30/08		0.00	30.82	0.00	3,341.91	0.00	0.00
MW - 4	05/28/08		0.00	31.09	0.00	3,341.64	0.00	0.00
MW - 4	06/25/08		0.00	37.66	0.00	3,335.07	0.00	0.00
MW - 4	07/02/08		0.00	31.28	0.00	3,341.45	0.00	20.00
MW - 4	07/07/08		0.00	31.34	0.00	3,341.39	0.00	10.00
MW - 4	07/14/08		0.00	34.51	0.00	3,338.22	0.00	25.00
MW - 4	07/22/08		0.00	31.39	0.00	3,341.34	0.00	10.00
MW - 4	07/30/08		0.00	31.40	0.00	3,341.33	0.00	10.00

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 A4077008

All elevations are measured in feet above mean sea level

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED	Volume Purged
MW - 4	08/05/08		0.00	31.50	0.00	3,341.23	0.00	10.00
MW - 4	08/14/08		0.00	31.55	0.00	3,341.18	0.00	5.00
MW - 4	08/21/08		0.00	31.43	0.00	3,341.30	0.00	0.00
MW - 4	08/27/08		0.00	31.42	0.00	3,341.31	0.00	25.00
MW - 4	09/03/08							25.00
MW - 4	09/20/08		0.00	31.34	0.00	3,341.39	0.00	30.00
MW - 4	09/29/08		0.00	31.34	0.00	3,341.39	0.00	40.00
MW - 4	11/06/08		0.00	31.38	0.00	3,341.35	0.00	0.00
MW - 4	11/15/08		0.00	31.40	0.00	3,341.33	0.00	50.00
MW - 5	12/27/07	3,370.92	0.00	29.29	0.00	3,341.63	0.10	0.00
MW - 5	01/18/08		0.00	29.40	0.00	3,341.52	0.00	0.00
MW - 5	02/20/08		0.00	29.43	0.00	3,341.49	0.00	0.00
MW - 5	02/29/08		0.00	29.43	0.00	3,341.49	0.00	0.00
MW - 5	03/11/08		0.00	29.87	0.00	3,341.05	0.00	0.00
MW - 5	04/30/08		0.00	29.45	0.00	3,341.47	0.00	0.00
MW - 5	05/28/08		0.00	29.55	0.00	3,341.37	0.00	0.00
MW - 5	06/25/08		0.00	29.70	0.00	3,341.22	0.00	0.00
MW - 5	07/02/08		0.00	29.75	0.00	3,341.17	0.00	20.00
MW - 5	07/07/08		0.00	28.83	0.00	3,342.09	0.00	10.00
MW - 5	07/14/08		0.00	29.82	0.00	3,341.10	0.00	25.00
MW - 5	07/22/08		0.00	29.87	0.00	3,341.05	0.00	10.00
MW - 5	07/30/08		0.00	29.93	0.00	3,340.99	0.00	15.00
MW - 5	08/05/08		0.00	29.94	0.00	3,340.98	0.00	15.00
MW - 5	08/14/08		0.00	30.06	0.00	3,340.86	0.00	5.00
MW - 5	08/21/08		0.00	29.83	0.00	3,341.09	0.00	0.00
MW - 5	08/27/08		0.00	29.69	0.00	3,341.23	0.00	25.00
MW - 5	09/03/08							25.00
MW - 5	09/20/08		0.00	29.75	0.00	3,341.17	0.00	30.00
MW - 5	09/29/08		0.00	29.74	0.00	3,341.18	0.00	40.00
MW - 5	11/06/08		0.00	29.75	0.00	3,341.17	0.00	0.00
MW - 5	11/15/08		0.00	29.89	0.00	3,341.03	0.00	50.00
MW - 6	11/16/07	3,377.02	0.00	35.22	0.00	3,341.80	0.00	0.00
MW - 6	02/29/08		0.00	35.36	0.00	3,341.66	0.00	0.00
MW - 6	03/11/08		0.00	35.37	0.00	3,341.65	0.00	0.00
MW - 6	05/28/08		0.00	35.46	0.00	3,341.56	0.00	0.00
MW - 6	08/21/08		0.00	35.99	0.00	3,341.03	0.00	0.00
MW - 6	11/06/08		0.00	35.94	0.00	3,341.08	0.00	0.00
MW - 7	11/16/07	3,369.47	0.00	27.26	0.00	3,342.21	0.00	0.00
MW - 7	02/29/08		0.00	27.43	0.00	3,342.04	0.00	0.00
MW - 7	05/28/08		0.00	27.54	0.00	3,341.93	0.00	0.00
MW - 7	08/21/08		0.00	28.09	0.00	3,341.38	0.00	0.00
MW - 7	11/06/08		0.00	27.89	0.00	3,341.58	0.00	0.00
MW - 8	11/16/07	3,373.77	0.00	31.58	0.00	3,342.19	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 A4077008

All elevations are measured in feet above mean sea level

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED	Volume Purged
MW - 8	02/29/08		0.00	31.72	0.00	3,342.05	0.00	0.00
MW - 8	05/28/08		0.00	31.96	0.00	3,341.81	0.00	0.00
MW - 8	08/21/08		0.00	32.33	0.00	3,341.44	0.00	0.00
MW - 8	11/06/08		0.00	32.19	0.00	3,341.58	0.00	0.00
MW - 9	11/16/07	3,375.92	0.00	34.02	0.00	3,341.90	0.00	0.00
MW - 9	02/29/08		0.00	34.18	0.00	3,341.74	0.00	0.00
MW - 9	05/28/08		0.00	34.45	0.00	3,341.47	0.00	0.00
MW - 9	08/21/08		0.00	34.79	0.00	3,341.13	0.00	0.00
MW - 9	11/06/08		0.00	34.84	0.00	3,341.08	0.00	0.00
MW - 10	11/16/07	3,370.17	0.00	28.20	0.00	3,341.97	0.00	0.00
MW - 10	02/29/08		0.00	28.42	0.00	3,341.75	0.00	0.00
MW - 10	05/28/08		0.00	28.48	0.00	3,341.69	0.00	0.00
MW - 10	08/21/08		0.00	29.04	0.00	3,341.13	0.00	0.00
MW - 10	11/06/08		0.00	28.82	0.00	3,341.35	0.00	0.00
MW-11	11/16/07	3,373.96	0.00	29.69	0.00	3,344.27	0.00	0.00
MW-11	02/29/08		0.00	29.30	0.00	3,344.66	0.00	0.00
MW-11	05/28/08		0.00	32.41	0.00	3,341.55	0.00	0.00
MW-11	08/21/08		0.00	32.98	0.00	3,340.98	0.00	0.00
MW-11	11/06/08		0.00	32.85	0.00	3,341.11	0.00	0.00
MW- 12	11/16/07	3,372.41	0.00	33.32	0.00	3,339.09	0.00	0.00
MW- 12	02/29/08		0.00	27.29	0.00	3,345.12	0.00	0.00
MW- 12	05/28/08		0.00	27.35	0.00	3,345.06	0.00	0.00
MW- 12	08/21/08		0.00	27.92	0.00	3,344.49	0.00	0.00
MW- 12	11/06/08		0.00	27.74	0.00	3,344.67	0.00	0.00
MW- 13	11/16/07	3,368.91	0.00	27.11	0.00	3,335.59	0.00	0.00
MW- 13	02/29/08		0.00	30.80	0.00	3,341.62	0.00	0.00
MW- 13	05/28/08		0.00	30.28	0.00	3,341.56	0.00	0.00
MW- 13	08/21/08		0.00	31.43	0.00	3,340.99	0.00	0.00
MW- 13	11/06/08		0.00	31.26	0.00	3,341.17	0.00	0.00
MW- 14	11/16/07	3,371.54	0.00	29.94	0.00	3,341.60	0.00	0.00
MW- 14	02/29/08		0.00	30.08	0.00	3,341.46	0.00	0.00
MW- 14	05/28/08		0.00	30.27	0.00	3,341.27	0.00	0.00
MW- 14	08/21/08		0.00	30.70	0.00	3,340.84	0.00	0.00
MW- 14	11/06/08		0.00	30.55	0.00	3,340.99	0.00	0.00
MW- 15	11/16/07	3,377.64	0.00	36.09	0.00	3,341.55	0.00	0.00
MW- 15	02/29/08		0.00	36.20	0.00	3,341.44	0.00	0.00
MW- 15	05/28/08		0.00	36.31	0.00	3,341.33	0.00	0.00
MW- 15	08/21/08		0.00	36.80	0.00	3,340.84	0.00	0.00
MW- 15	11/06/08		0.00	36.69	0.00	3,340.95	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 A4077008

All elevations are measured in feet above mean sea level

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED	Volume Purged
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
							13.20	Total Gallons
							0.31	Total Barrels

Elevations are based on the North American Vertical Datum of 1929.
PSH - Phase Separated Hydrocarbons
ND - PSH not detected
Note: Heavy rains April 3, 4 & 5, 2004;
* - denotes excavation flooded 3 weeks
(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					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C_6-C_{12}	Diesel >C_{12}-C_{28}	Oil >C_{28}-C_{35}	Total C_6-C_{35}
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-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-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

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					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C_6-C_{12}	Diesel >C_{12}-C_{28}	Oil >C_{28}-C_{35}	Total C_6-C_{35}
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-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
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-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

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					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C_6-C_{12}	Diesel >C_{12}-C_{28}	Oil >C_{28}-C_{35}	Total C_6-C_{35}
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-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
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-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								

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					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C_6-C_{12}	Diesel >C_{12}-C_{28}	Oil >C_{28}-C_{35}	Total C_6-C_{35}
MW-7	11/08/08	Not Sampled Due to Sample Reduction								
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-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
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

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					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C_6-C_{12}	Diesel >C_{12}-C_{28}	Oil >C_{28}-C_{35}	Total C_6-C_{35}
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-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

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					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C_6-C_{12}	Diesel $>C_{12}$-C_{28}	Oil $>C_{28}$-C_{35}	Total C_6-C_{35}
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
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-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

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					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C_6-C_{12}	Diesel >C_{12}-C_{28}	Oil >C_{28}-C_{35}	Total C_6-C_{35}
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-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
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
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								

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					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C_6-C_{12}	Diesel >C_{12}-C_{28}	Oil >C_{28}-C_{35}	Total C_6-C_{35}
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								
EB-1	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
NMWQCC Groundwater Standards		**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

TABLE 3

CONCENTRATIONS OF PAHs IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number: 1R-0398
Plains Pipeline, L. P. SRS Number 2001-11005
Terracon Project Number A4077008

All concentrations are in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C and 3510																	
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,I) perylene	Benzo(j,k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	2-Methylnaphthalene	Benzo(k) fluoranthene	1-Methylnaphtalene
MW - 1	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00229	<0.00005	0.0000136	0.00399	<0.00005	NA	NA	NA
MW - 1	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	0.001	<0.001	0.017	0.012	<0.001	0.028	<0.001	NA
MW - 1	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008
MW - 2	06/18/03	0.000118	<0.00005	0.000061	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000056	0.000078	<0.00005	<0.00005	<0.00005	0.000121	NA	NA	NA
MW - 2	03/22/05	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 2	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 2	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 2	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 3	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 3	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 3	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	NA
MW - 3	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 4	06/18/03	0.000156	0.000144	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000498	<0.00005	0.000167	0.000891	<0.00005	NA	NA	NA
MW - 4	11/02/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0002	<0.00005	0.0025	0.000227	<0.00005	NA	NA	NA
MW - 4	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000068	<0.00005	<0.00005	0.000251	<0.00005	0.00492	0.000312	<0.00005	NA	NA	NA
MW - 4	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	0.001	<0.001	0.034	0.006	<0.001	0.042	<0.001	NA
MW - 4	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 5	06/18/03	0.000732	0.000856	0.00507	0.000459	0.00025	0.000129	<0.00005	0.00007	0.000328	<0.00005	0.000087	0.00268	<0.00005	**0.0403**	<0.00005	0.000284	NA	NA	NA
MW - 5	08/24/04	0.000092	0.00007	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00006	0.000114	<0.00005	<0.00005	0.000419	<0.00005	0.00768	0.000898	<0.00005	NA	NA	NA
MW - 5	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000115	<0.00005	<0.00005	0.000306	<0.00005	0.00136	0.000427	<0.00005	NA	NA	NA
MW - 5	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	0.606	<0.001	0.019	<0.001	<0.001	0.022	<0.001	NA
MW - 5	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	**0.031**	<0.005	<0.005	0.024	<0.005	0.028
MW - 6	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 6	11/02/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 6	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000126	<0.00005	<0.00005	0.000063	<0.00005	NA	NA	NA
MW - 6	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	NA
MW - 6	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 7	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 7	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 7	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 7	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 8	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 8	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 8	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 8	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

TABLE 3

CONCENTRATIONS OF PAHs IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number: 1R-0398
Plains Pipeline, L. P. SRS Number 2001-11005
Terracon Project Number A4077008

All concentrations are in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C and 3510																		
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,I) perylene	Benzo(j,k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	2-Methylnaphthalene	Benzo(k) fluoranthene	1-Methylnaphtalene
MW - 9	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 9	03/22/05	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000084	<0.00005	0.000544	0.000058	<0.00005	NA	NA	NA
MW - 9	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 9	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 9	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 10	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 10	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 10	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 10	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 11	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 11	08/18/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000075	<0.00005	0.0014	0.000154	<0.00005	NA	NA	NA
MW - 11	03/22/05	0.000068	0.000055	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00008	<0.00005	0.00167	0.000296	<0.00005	NA	NA	NA
MW - 11	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 11	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 11	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 12	11/06/02	0.00007	0.000151	0.000096	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000662	<0.00005	0.000198	0.000722	0.000071	NA	NA	NA
MW - 12	08/18/04	0.000079	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000078	<0.00005	0.000262	0.000246	<0.00005	NA	NA	NA
MW - 12	03/22/05	0.0011	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000166	<0.00005	0.000107	0.000285	<0.00005	NA	NA	NA
MW - 12	02/16/06	0.000055	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000053	<0.00005	<0.00005	0.000174	<0.00005	NA	NA	NA
MW - 12	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 12	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 13	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000232	<0.00005	<0.00005	NA	NA	NA
MW - 13	08/18/04	0.000139	0.000086	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000141	<0.00005	0.00234	0.000702	<0.00005	NA	NA	NA
MW - 13	03/22/05	0.000105	0.000072	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000366	<0.00005	0.000746	0.000426	<0.00005	NA	NA	NA
MW - 13	02/16/06	0.000079	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000079	<0.00005	0.000064	0.000132	<0.00005	NA	NA	NA
MW - 13	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 13	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 14	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 14	08/18/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00119	0.000079	<0.00005	NA	NA	NA
MW - 14	03/22/05	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000071	<0.00005	<0.00005	NA	NA	NA
MW - 14	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 14	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.001	<0.001	NA
MW - 14	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 15	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 15	08/24/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 15	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0033	<0.00005	<0.00005	NA	NA	NA
MW - 15	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 15	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TMW - 1	02/16/06	0.00146	0.00147	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00221	<0.00005	<0.00005	0.00818	<0.00005	**0.0886**	0.0149	0.000788	NA	NA	NA
TMW - 1	05/11/07	<0.002	<0.002	<0.004	<0.002	<0.003	<0.002	<0.006	NA	<0.002	<0.001	<0.002	0.008	<0.003	**0.062**	<0.002	<0.002	0.197	<0.002	NA
TMW - 1	02/29/08	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NA	<0.025	<0.025	<0.025	<0.025	<0.025	**0.069**	<0.025	<0.025	0.04	<0.025	0.042
NMWQCC Standards		**NE**	**NE**	**NE**	**NE**	**0.0007**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**0.03**	**NE**	**NE**	**NE**	**NE**	**NE**

PAHs - Polycyclic Aromatic Hydrocarbons
NMWQCC - New Mexico Water Quality Control Commission
NE - Stardards for these constituents has not been established by the NMWQCC

Table 4

Enhanced Bioremediation Parameters for Selected Groundwater Monitor Wells

Plains Pipeline, L.P.
Livingston Ridge-HP Sims
Lea County, NM
Plains Pipeline, L.P. Leak Number 2001-11005
Terracon Project Number 94047445

Measurments are noted in the table

Monitor Well	Date	Temperature (°C)	Conductivity (mS/cm)	DO (%)	DO (mg/l)	pH (pH units)	ORP (mV)
MW-4	05/22/08	20.56	21.23	73.2	6.53	7.20	-39
MW-4	06/24/08	20.28	2.953	42.3	3.79	7.24	-140
MW-4	07/26/08	20.39	2.494	9.7	0.86	6.89	-169
MW-4	08/15/08	20.38	3.055	3.6	0.33	7.13	-177
MW-4	09/24/08	20.27	4.532	4.3	0.41	6.82	-21
MW-4	10/22/08	20.18	4.176	12.1	1.08	7.45	-111
MW-4	11/11/08	19.67	3.875	15.5	1.37	7.21	-192
MW-9	05/22/08	20.21	5.238	211.4	18.8	10.81	70
MW-9	06/24/08	20.24	5.518	113.7	10.13	8.27	143
MW-9	07/26/08	21.74	0.064	77.5	6.72	6.98	307
MW-9	08/15/08	20.37	5.142	27.4	2.43	8.62	182
MW-9	09/24/08	20.13	5.135	40.7	3.54	7.14	144
MW-9	10/22/08	19.84	5.059	64.8	5.8	7.76	151
MW-9	11/11/08	19.41	6.283	79.3	7.15	7.43	137
MW-11	05/22/08	20.62	3.434	5.2	0.46	6.88	-109
MW-11	06/24/08	20.14	3.71	49.5	4.5	6.90	-51
MW-11	07/26/08	20.64	3.177	9	0.8	6.71	20
MW-11	08/15/08	20.58	3.687	4.1	0.37	6.87	58.3
MW-11	09/24/08	20.90	2.598	6.2	0.53	6.71	-131
MW-11	10/22/08	19.65	3.201	11.4	0.98	7.14	-112
MW-11	11/11/08	19.30	4.193	15.3	1.37	6.98	-42

Parameters were collected after monitor wells stabilized (approximately five minutes per well)

APPENDIX C

Laboratory Data Sheets

Analytical Report 298800

for

PLAINS ALL AMERICAN EH&S

Project Manager: Camille Reynolds

Livingston Ridge - HP Sims

2001-11005

10-MAR-08

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

10-MAR-08

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

Reference: XENCO Report No: **298800**
Livingston Ridge - HP Sims
Project Address:

Camille Reynolds:

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 298800. 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. 298800 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 298800

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge - HP Sims

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-11	W	Feb-29-08 11:33		298800-001
MW-13	W	Feb-29-08 12:04		298800-002
MW-12	W	Feb-29-08 12:32		298800-003
MW-14	W	Feb-29-08 12:55		298800-004
MW-15	W	Feb-29-08 13:26		298800-005
MW-10	W	Feb-29-08 14:25		298800-006
MW-3	W	Feb-29-08 14:46		298800-007
MW-7	W	Feb-29-08 15:06		298800-008
MW-2	W	Feb-29-08 15:43		298800-009
MW-9	W	Feb-29-08 16:07		298800-010
MW-6	W	Feb-29-08 16:36		298800-011
MW-8	W	Feb-29-08 17:03		298800-012
MW-5	W	Feb-29-08 17:34		298800-013
MW-4	W	Feb-29-08 18:00		298800-014
MW-1	W	Feb-29-08 18:24		298800-015
Decon	W	Feb-29-08 18:38		298800-016
TMW-1	W	Feb-29-08 18:50		298800-017

Certificate of Analysis Summary 298800
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005 **Date Received in Lab:** Mar-03-08 05:00 pm
Contact: Camille Reynolds **Report Date:** 10-MAR-08
Project Location: **Project Manager:** Brent Barron, II

Analysis Requested		298800-001		298800-002		298800-003		298800-004	
	Field Id:	MW-11		MW-13		MW-12		MW-14	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-29-08 11:33		Feb-29-08 12:04		Feb-29-08 12:32		Feb-29-08 12:55	
BTEX by EPA 8021B	*Extracted:*	Mar-04-08 15:00		Mar-04-08 15:00		Mar-04-08 15:00		Mar-04-08 15:00	
	Analyzed:	Mar-04-08 19:03		Mar-04-08 19:21		Mar-04-08 19:39		Mar-04-08 19:57	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	0.0011	0.0010	ND	0.0010
Toluene		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
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	0.0028	0.0010	0.0030	0.0010	ND	0.0010
Xylenes, Total		ND		0.0028		0.003		ND	
Total BTEX		ND		0.0028		0.0041		ND	
SVOA PAHs List by EPA 8270C	*Extracted:*	Mar-05-08 09:56		Mar-05-08 09:58		Mar-05-08 10:00		Mar-05-08 10:02	
	Analyzed:	Mar-06-08 14:34		Mar-06-08 15:18		Mar-06-08 16:03		Mar-06-08 16:48	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Acenaphthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Acenaphthylene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(b)fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(k)fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(g,h,i)perylene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chrysene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Dibenz(a,h)Anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluorene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Indeno(1,2,3-c,d)Pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
1-Methylnaphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
2-Methylnaphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Naphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Phenanthrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 298800
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005
Contact: Camille Reynolds
Project Location:

Date Received in Lab: Mar-03-08 05:00 pm
Report Date: 10-MAR-08
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	298800-001		298800-002		298800-003		298800-004	
	Field Id:	MW-11		MW-13		MW-12		MW-14	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-29-08 11:33		Feb-29-08 12:04		Feb-29-08 12:32		Feb-29-08 12:55	
TPH By SW8015 Mod	*Extracted:*	Mar-04-08 14:56		Mar-04-08 14:58		Mar-04-08 15:00		Mar-04-08 15:02	
	Analyzed:	Mar-05-08 00:56		Mar-05-08 01:23		Mar-05-08 01:50		Mar-05-08 02:17	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
C12-C28 Diesel Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
C28-C35 Oil Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
Total TPH		ND		ND		ND		ND	

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 298800
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005 **Date Received in Lab:** Mar-03-08 05:00 pm
Contact: Camille Reynolds **Report Date:** 10-MAR-08
Project Location: **Project Manager:** Brent Barron, II

Analysis Requested		*Lab Id:*	298800-005		298800-006		298800-007		298800-008	
		Field Id:	MW-15		MW-10		MW-3		MW-7	
		Depth:								
		Matrix:	WATER		WATER		WATER		WATER	
		Sampled:	Feb-29-08 13:26		Feb-29-08 14:25		Feb-29-08 14:46		Feb-29-08 15:06	
BTEX by EPA 8021B		*Extracted:*	Mar-04-08 15:00		Mar-04-08 15:00		Mar-04-08 15:00		Mar-04-08 15:00	
		Analyzed:	Mar-04-08 20:15		Mar-04-08 20:33		Mar-04-08 20:52		Mar-04-08 21:10	
		Units/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
Toluene			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
m,p-Xylenes			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
Xylenes, Total			ND		ND		ND		ND	
Total BTEX			ND		ND		ND		ND	
SVOA PAHs List by EPA 8270C		*Extracted:*	Mar-05-08 10:04		Mar-05-08 10:06		Mar-05-08 10:08		Mar-05-08 10:10	
		Analyzed:	Mar-06-08 17:32		Mar-06-08 18:17		Mar-06-08 19:01		Mar-06-08 19:45	
		Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Acenaphthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Acenaphthylene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(b)fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(k)fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(g,h,i)perylene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chrysene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Dibenz(a,h)Anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluorene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Indeno(1,2,3-c,d)Pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
1-Methylnaphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
2-Methylnaphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Naphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Phenanthrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 298800
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005 **Date Received in Lab:** Mar-03-08 05:00 pm

Contact: Camille Reynolds **Report Date:** 10-MAR-08

Project Location: **Project Manager:** Brent Barron, II

Analysis Requested									
	Lab Id:	298800-005		298800-006		298800-007		298800-008	
	Field Id:	MW-15		MW-10		MW-3		MW-7	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-29-08 13:26		Feb-29-08 14:25		Feb-29-08 14:46		Feb-29-08 15:06	
TPH By SW8015 Mod	*Extracted:*	Mar-04-08 15:04		Mar-04-08 15:06		Mar-04-08 15:08		Mar-04-08 15:10	
	Analyzed:	Mar-05-08 02:44		Mar-05-08 03:11		Mar-05-08 03:38		Mar-05-08 04:05	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
C12-C28 Diesel Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
C28-C35 Oil Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
Total TPH		ND		ND		ND		ND	

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 298800
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005 **Date Received in Lab:** Mar-03-08 05:00 pm
Contact: Camille Reynolds **Report Date:** 10-MAR-08
Project Location: **Project Manager:** Brent Barron, II

Analysis Requested		*Lab Id:*	298800-009		298800-010		298800-011		298800-012	
		Field Id:	MW-2		MW-9		MW-6		MW-8	
		Depth:								
		Matrix:	WATER		WATER		WATER		WATER	
		Sampled:	Feb-29-08 15:43		Feb-29-08 16:07		Feb-29-08 16:36		Feb-29-08 17:03	
BTEX by EPA 8021B	*Extracted:*		Mar-04-08 15:00		Mar-04-08 15:00		Mar-05-08 14:00		Mar-05-08 14:00	
	Analyzed:		Mar-04-08 21:28		Mar-04-08 21:47		Mar-05-08 20:56		Mar-05-08 21:14	
	Units/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
Toluene			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
m,p-Xylenes			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
Xylenes, Total			ND		ND		ND		ND	
Total BTEX			ND		ND		ND		ND	
SVOA PAHs List by EPA 8270C	*Extracted:*		Mar-05-08 10:12		Mar-05-08 10:14		Mar-05-08 14:38		Mar-05-08 14:42	
	Analyzed:		Mar-06-08 20:30		Mar-06-08 21:15		Mar-07-08 14:49		Mar-07-08 12:47	
	Units/RL:		mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Acenaphthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Acenaphthylene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(b)fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(k)fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(g,h,i)perylene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chrysene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Dibenz(a,h)Anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluorene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Indeno(1,2,3-c,d)Pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
1-Methylnaphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
2-Methylnaphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Naphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Phenanthrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 298800
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005
Contact: Camille Reynolds
Project Location:

Date Received in Lab: Mar-03-08 05:00 pm
Report Date: 10-MAR-08
Project Manager: Brent Barron, II

Analysis Requested									
	Lab Id:	298800-009		298800-010		298800-011		298800-012	
	Field Id:	MW-2		MW-9		MW-6		MW-8	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-29-08 15:43		Feb-29-08 16:07		Feb-29-08 16:36		Feb-29-08 17:03	
TPH By SW8015 Mod	*Extracted:*	Mar-04-08 15:12		Mar-04-08 15:14		Mar-04-08 15:24		Mar-04-08 15:26	
	Analyzed:	Mar-05-08 09:17		Mar-05-08 09:44		Mar-05-08 13:37		Mar-05-08 14:02	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
C12-C28 Diesel Range Hydrocarbons		3.51	1.50	ND	1.50	ND	1.50	ND	1.50
C28-C35 Oil Range Hydrocarbons		3.15	1.50	ND	1.50	ND	1.50	ND	1.50
Total TPH		6.66		ND		ND		ND	

Brent Barron
Odessa Laboratory Director

ENVIRONMENTAL LAB OF

Certificate of Analysis Summary 298800
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005
Contact: Camille Reynolds
Project Location:

Date Received in Lab: Mar-03-08 05:00 pm
Report Date: 10-MAR-08
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	298800-013		298800-014		298800-015		298800-016
	Field Id:	MW-5		MW-4		MW-1		Decon
	Depth:							
	Matrix:	WATER		WATER		WATER		WATER
	Sampled:	Feb-29-08 17:34		Feb-29-08 18:00		Feb-29-08 18:24		Feb-29-08 18:38
BTEX by EPA 8021B	*Extracted:*	Mar-05-08 14:00		Mar-05-08 14:00		Mar-05-08 14:00		
	Analyzed:	Mar-05-08 21:32		Mar-05-08 21:51		Mar-05-08 22:09		
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	
Benzene		0.0030	0.0010	0.0578	0.0010	0.0033	0.0010	
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	
Ethylbenzene		0.0036	0.0010	0.0650	0.0010	ND	0.0010	
m,p-Xylenes		0.0030	0.0020	0.0047	0.0020	ND	0.0020	
o-Xylene		0.0018	0.0010	ND	0.0010	ND	0.0010	
Xylenes, Total		0.0048		0.0047		ND		
Total BTEX		0.0114		0.1275		0.0033		
SVOA PAHs List by EPA 8270C	*Extracted:*	Mar-05-08 14:46		Mar-05-08 14:50		Mar-05-08 14:54		
	Analyzed:	Mar-07-08 10:33		Mar-07-08 13:32		Mar-07-08 11:18		
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	
Acenaphthene		ND	0.005	ND	0.005	ND	0.005	
Acenaphthylene		ND	0.005	ND	0.005	ND	0.005	
Anthracene		ND	0.005	ND	0.005	ND	0.005	
Benzo(a)anthracene		ND	0.005	ND	0.005	ND	0.005	
Benzo(a)pyrene		ND	0.005	ND	0.005	ND	0.005	
Benzo(b)fluoranthene		ND	0.005	ND	0.005	ND	0.005	
Benzo(k)fluoranthene		ND	0.005	ND	0.005	ND	0.005	
Benzo(g,h,i)perylene		ND	0.005	ND	0.005	ND	0.005	
Chrysene		ND	0.005	ND	0.005	ND	0.005	
Dibenz(a,h)Anthracene		ND	0.005	ND	0.005	ND	0.005	
Fluoranthene		ND	0.005	ND	0.005	ND	0.005	
Fluorene		ND	0.005	ND	0.005	ND	0.005	
Indeno(1,2,3-c,d)Pyrene		ND	0.005	ND	0.005	ND	0.005	
1-Methylnaphthalene		0.028	0.005	ND	0.005	0.008	0.005	
2-Methylnaphthalene		0.024	0.005	ND	0.005	ND	0.005	
Naphthalene		0.031	0.005	ND	0.005	ND	0.005	
Phenanthrene		ND	0.005	ND	0.005	ND	0.005	
Pyrene		ND	0.005	ND	0.005	ND	0.005	

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 298800
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005
Contact: Camille Reynolds
Project Location:

Date Received in Lab: Mar-03-08 05:00 pm
Report Date: 10-MAR-08
Project Manager: Brent Barron, II

Analysis Requested									
	Lab Id:	298800-013		298800-014		298800-015		298800-016	
	Field Id:	MW-5		MW-4		MW-1		Decon	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-29-08 17:34		Feb-29-08 18:00		Feb-29-08 18:24		Feb-29-08 18:38	
TPH By SW8015 Mod	***Extracted:***	Mar-04-08 15:28		Mar-04-08 15:30		Mar-04-08 15:32		Mar-04-08 15:34	
	Analyzed:	Mar-05-08 14:27		Mar-05-08 14:52		Mar-05-08 15:17		Mar-05-08 15:42	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons		9.46	1.50	ND	1.50	3.68	1.50	ND	1.50
C12-C28 Diesel Range Hydrocarbons		11.7	1.50	ND	1.50	3.44	1.50	ND	1.50
C28-C35 Oil Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
Total TPH		21.16		ND		7.12		ND	

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 298800
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005
Contact: Camille Reynolds
Project Location:

Date Received in Lab: Mar-03-08 05:00 pm
Report Date: 10-MAR-08
Project Manager: Brent Barron, II

Analysis Requested						
	Lab Id:	298800-017				
	Field Id:	TMW-1				
	Depth:					
	Matrix:	WATER				
	Sampled:	Feb-29-08 18:50				
BTEX by EPA 8021B	***Extracted:***	Mar-06-08 10:53				
	Analyzed:	Mar-06-08 16:27				
	Units/RL:	mg/L	RL			
Benzene		3.004	0.0200			
Toluene		ND	0.0400			
Ethylbenzene		1.046	0.0200			
m,p-Xylenes		1.838	0.0400			
o-Xylene		0.0402	0.0200			
Xylenes, Total		1.8782				
Total BTEX		5.9282				
SVOA PAHs List by EPA 8270C	***Extracted:***	Mar-05-08 14:58				
	Analyzed:	Mar-07-08 15:34				
	Units/RL:	mg/L	RL			
Acenaphthene		ND	0.025			
Acenaphthylene		ND	0.025			
Anthracene		ND	0.025			
Benzo(a)anthracene		ND	0.025			
Benzo(a)pyrene		ND	0.025			
Benzo(b)fluoranthene		ND	0.025			
Benzo(k)fluoranthene		ND	0.025			
Benzo(g,h,i)perylene		ND	0.025			
Chrysene		ND	0.025			
Dibenz(a,h)Anthracene		ND	0.025			
Fluoranthene		ND	0.025			
Fluorene		ND	0.025			
Indeno(1,2,3-c,d)Pyrene		ND	0.025			
1-Methylnaphthalene		0.042	0.025			
2-Methylnaphthalene		0.040	0.025			
Naphthalene		0.069	0.025			
Phenanthrene		ND	0.025			
Pyrene		ND	0.025			

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 298800
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005
Contact: Camille Reynolds
Project Location:

Date Received in Lab: Mar-03-08 05:00 pm
Report Date: 10-MAR-08
Project Manager: Brent Barron, II

Analysis Requested						
	Lab Id:	298800-017				
	Field Id:	TMW-1				
	Depth:					
	Matrix:	WATER				
	Sampled:	Feb-29-08 18:50				
TPH By SW8015 Mod	*Extracted:*	Mar-04-08 15:36				
	Analyzed:	Mar-05-08 16:07				
	Units/RL:	mg/L	RL			
C6-C12 Gasoline Range Hydrocarbons		16.6	1.50			
C12-C28 Diesel Range Hydrocarbons		7.06	1.50			
C28-C35 Oil Range Hydrocarbons		ND	1.50			
Total TPH		23.66				

Brent Barron
Odessa Laboratory Director

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(PQL) and above the SQL(MDL).

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.

* Outside XENCO'S scope of NELAC Accreditation

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716209 **Sample:** 298800-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

Lab Batch #: 716209 **Sample:** 298800-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	

Lab Batch #: 716209 **Sample:** 298800-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0344	0.0300	115	80-120	
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	

Lab Batch #: 716209 **Sample:** 298800-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 716209 **Sample:** 298800-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716209 **Sample:** 298800-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

Lab Batch #: 716209 **Sample:** 298800-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0347	0.0300	116	80-120	

Lab Batch #: 716209 **Sample:** 298800-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0340	0.0300	113	80-120	

Lab Batch #: 716209 **Sample:** 298800-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	80-120	
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 716209 **Sample:** 298800-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716209 **Sample:** 298800-010 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0343	0.0300	114	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 716209 **Sample:** 298800-010 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0343	0.0300	114	80-120	
4-Bromofluorobenzene	0.0353	0.0300	118	80-120	

Lab Batch #: 716209 **Sample:** 505449-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	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	0.0353	0.0300	118	80-120	

Lab Batch #: 716209 **Sample:** 505449-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 716209 **Sample:** 505449-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B 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	0.0319	0.0300	106	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716371 **Sample:** 298800-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	80-120	
4-Bromofluorobenzene	0.0352	0.0300	117	80-120	

Lab Batch #: 716371 **Sample:** 298800-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 716371 **Sample:** 298800-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0348	0.0300	116	80-120	
4-Bromofluorobenzene	0.0356	0.0300	119	80-120	

Lab Batch #: 716371 **Sample:** 298800-014 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0358	0.0300	119	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

Lab Batch #: 716371 **Sample:** 298800-015 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716371 **Sample:** 298874-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 716371 **Sample:** 298874-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	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	0.0358	0.0300	119	80-120	

Lab Batch #: 716371 **Sample:** 505526-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	0.0315	0.0300	105	80-120	

Lab Batch #: 716371 **Sample:** 505526-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

Lab Batch #: 716371 **Sample:** 505526-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	0.0322	0.0300	107	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716403 **Sample:** 298800-017 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0339	0.0300	113	80-120	
4-Bromofluorobenzene	0.0360	0.0300	120	80-120	

Lab Batch #: 716403 **Sample:** 298981-002 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B 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	0.0361	0.0300	120	80-120	

Lab Batch #: 716403 **Sample:** 298981-002 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	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	0.0351	0.0300	117	80-120	

Lab Batch #: 716403 **Sample:** 505546-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B 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	0.0352	0.0300	117	80-120	

Lab Batch #: 716403 **Sample:** 505546-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716403 **Sample:** 505546-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 716483 **Sample:** 298800-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.042	0.050	84	43-116	
2-Fluorophenol	0.016	0.050	32	21-100	
Nitrobenzene-d5	0.039	0.050	78	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.043	0.050	86	33-141	
2,4,6-Tribromophenol	0.047	0.050	94	10-123	

Lab Batch #: 716483 **Sample:** 298800-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.043	0.050	86	43-116	
2-Fluorophenol	0.017	0.050	34	21-100	
Nitrobenzene-d5	0.041	0.050	82	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.044	0.050	88	33-141	
2,4,6-Tribromophenol	0.047	0.050	94	10-123	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716483 **Sample:** 298800-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.041	0.050	82	43-116	
2-Fluorophenol	0.016	0.050	32	21-100	
Nitrobenzene-d5	0.038	0.050	76	35-114	
Phenol-d6	0.008	0.050	16	10-94	
Terphenyl-D14	0.042	0.050	84	33-141	
2,4,6-Tribromophenol	0.046	0.050	92	10-123	

Lab Batch #: 716483 **Sample:** 298800-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.043	0.050	86	43-116	
2-Fluorophenol	0.018	0.050	36	21-100	
Nitrobenzene-d5	0.042	0.050	84	35-114	
Phenol-d6	0.010	0.050	20	10-94	
Terphenyl-D14	0.043	0.050	86	33-141	
2,4,6-Tribromophenol	0.048	0.050	96	10-123	

Lab Batch #: 716483 **Sample:** 298800-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.036	0.050	72	43-116	
2-Fluorophenol	0.014	0.050	28	21-100	
Nitrobenzene-d5	0.035	0.050	70	35-114	
Phenol-d6	0.008	0.050	16	10-94	
Terphenyl-D14	0.039	0.050	78	33-141	
2,4,6-Tribromophenol	0.038	0.050	76	10-123	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716483 **Sample:** 298800-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.041	0.050	82	43-116	
2-Fluorophenol	0.018	0.050	36	21-100	
Nitrobenzene-d5	0.038	0.050	76	35-114	
Phenol-d6	0.010	0.050	20	10-94	
Terphenyl-D14	0.042	0.050	84	33-141	
2,4,6-Tribromophenol	0.048	0.050	96	10-123	

Lab Batch #: 716483 **Sample:** 298800-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.042	0.050	84	43-116	
2-Fluorophenol	0.018	0.050	36	21-100	
Nitrobenzene-d5	0.039	0.050	78	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.045	0.050	90	33-141	
2,4,6-Tribromophenol	0.047	0.050	94	10-123	

Lab Batch #: 716483 **Sample:** 298800-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.042	0.050	84	43-116	
2-Fluorophenol	0.018	0.050	36	21-100	
Nitrobenzene-d5	0.041	0.050	82	35-114	
Phenol-d6	0.010	0.050	20	10-94	
Terphenyl-D14	0.044	0.050	88	33-141	
2,4,6-Tribromophenol	0.050	0.050	100	10-123	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716483 **Sample:** 298800-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.040	0.050	80	43-116	
2-Fluorophenol	0.018	0.050	36	21-100	
Nitrobenzene-d5	0.039	0.050	78	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.045	0.050	90	33-141	
2,4,6-Tribromophenol	0.045	0.050	90	10-123	

Lab Batch #: 716483 **Sample:** 298800-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.041	0.050	82	43-116	
2-Fluorophenol	0.016	0.050	32	21-100	
Nitrobenzene-d5	0.040	0.050	80	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.043	0.050	86	33-141	
2,4,6-Tribromophenol	0.045	0.050	90	10-123	

Lab Batch #: 716483 **Sample:** 505542-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.045	0.050	90	43-116	
2-Fluorophenol	0.030	0.050	60	21-100	
Nitrobenzene-d5	0.039	0.050	78	35-114	
Phenol-d6	0.020	0.050	40	10-94	
Terphenyl-D14	0.047	0.050	94	33-141	
2,4,6-Tribromophenol	0.050	0.050	100	10-123	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716483 **Sample:** 505542-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.049	0.050	98	43-116	
2-Fluorophenol	0.031	0.050	62	21-100	
Nitrobenzene-d5	0.041	0.050	82	35-114	
Phenol-d6	0.019	0.050	38	10-94	
Terphenyl-D14	0.055	0.050	110	33-141	
2,4,6-Tribromophenol	0.055	0.050	110	10-123	

Lab Batch #: 716483 **Sample:** 505542-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.046	0.050	92	43-116	
2-Fluorophenol	0.030	0.050	60	21-100	
Nitrobenzene-d5	0.040	0.050	80	35-114	
Phenol-d6	0.020	0.050	40	10-94	
Terphenyl-D14	0.049	0.050	98	33-141	
2,4,6-Tribromophenol	0.051	0.050	102	10-123	

Lab Batch #: 716527 **Sample:** 298800-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.043	0.050	86	43-116	
2-Fluorophenol	0.018	0.050	36	21-100	
Nitrobenzene-d5	0.037	0.050	74	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.050	0.050	100	33-141	
2,4,6-Tribromophenol	0.045	0.050	90	10-123	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716527 **Sample:** 298800-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.041	0.050	82	43-116	
2-Fluorophenol	0.016	0.050	32	21-100	
Nitrobenzene-d5	0.039	0.050	78	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.044	0.050	88	33-141	
2,4,6-Tribromophenol	0.044	0.050	88	10-123	

Lab Batch #: 716527 **Sample:** 298800-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.042	0.050	84	43-116	
2-Fluorophenol	0.017	0.050	34	21-100	
Nitrobenzene-d5	0.038	0.050	76	35-114	
Phenol-d6	0.010	0.050	20	10-94	
Terphenyl-D14	0.042	0.050	84	33-141	
2,4,6-Tribromophenol	0.054	0.050	108	10-123	

Lab Batch #: 716527 **Sample:** 298800-014 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.044	0.050	88	43-116	
2-Fluorophenol	0.019	0.050	38	21-100	
Nitrobenzene-d5	0.041	0.050	82	35-114	
Phenol-d6	0.010	0.050	20	10-94	
Terphenyl-D14	0.046	0.050	92	33-141	
2,4,6-Tribromophenol	0.056	0.050	112	10-123	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716527 **Sample:** 298800-015 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.040	0.050	80	43-116	
2-Fluorophenol	0.015	0.050	30	21-100	
Nitrobenzene-d5	0.038	0.050	76	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.042	0.050	84	33-141	
2,4,6-Tribromophenol	0.038	0.050	76	10-123	

Lab Batch #: 716527 **Sample:** 298800-017 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.041	0.050	82	43-116	
2-Fluorophenol	0.021	0.050	42	21-100	
Nitrobenzene-d5	0.033	0.050	66	35-114	
Phenol-d6	0.010	0.050	20	10-94	
Terphenyl-D14	0.039	0.050	78	33-141	
2,4,6-Tribromophenol	0.055	0.050	110	10-123	

Lab Batch #: 716527 **Sample:** 505543-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.042	0.050	84	43-116	
2-Fluorophenol	0.027	0.050	54	21-100	
Nitrobenzene-d5	0.040	0.050	80	35-114	
Phenol-d6	0.018	0.050	36	10-94	
Terphenyl-D14	0.046	0.050	92	33-141	
2,4,6-Tribromophenol	0.048	0.050	96	10-123	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716527 **Sample:** 505543-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.043	0.050	86	43-116	
2-Fluorophenol	0.026	0.050	52	21-100	
Nitrobenzene-d5	0.041	0.050	82	35-114	
Phenol-d6	0.016	0.050	32	10-94	
Terphenyl-D14	0.048	0.050	96	33-141	
2,4,6-Tribromophenol	0.044	0.050	88	10-123	

Lab Batch #: 716527 **Sample:** 505543-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.044	0.050	88	43-116	
2-Fluorophenol	0.028	0.050	56	21-100	
Nitrobenzene-d5	0.042	0.050	84	35-114	
Phenol-d6	0.019	0.050	38	10-94	
Terphenyl-D14	0.046	0.050	92	33-141	
2,4,6-Tribromophenol	0.048	0.050	96	10-123	

Lab Batch #: 716244 **Sample:** 298799-002 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	11.9	10.0	119	70-135	
o-Terphenyl	6.23	5.00	125	70-135	

Lab Batch #: 716244 **Sample:** 298800-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	9.52	10.0	95	70-135	
o-Terphenyl	5.21	5.00	104	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716244 **Sample:** 298800-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.0	10.0	100	70-135	
o-Terphenyl	5.44	5.00	109	70-135	

Lab Batch #: 716244 **Sample:** 298800-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.0	10.0	100	70-135	
o-Terphenyl	5.49	5.00	110	70-135	

Lab Batch #: 716244 **Sample:** 298800-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	9.81	10.0	98	70-135	
o-Terphenyl	5.42	5.00	108	70-135	

Lab Batch #: 716244 **Sample:** 298800-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.0	10.0	100	70-135	
o-Terphenyl	5.48	5.00	110	70-135	

Lab Batch #: 716244 **Sample:** 298800-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	9.74	10.0	97	70-135	
o-Terphenyl	5.36	5.00	107	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716244 **Sample:** 298800-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	9.92	10.0	99	70-135	
o-Terphenyl	5.38	5.00	108	70-135	

Lab Batch #: 716244 **Sample:** 298800-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	9.50	10.0	95	70-135	
o-Terphenyl	5.17	5.00	103	70-135	

Lab Batch #: 716244 **Sample:** 298800-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.1	10.0	101	70-135	
o-Terphenyl	5.45	5.00	109	70-135	

Lab Batch #: 716244 **Sample:** 298800-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.7	10.0	107	70-135	
o-Terphenyl	5.72	5.00	114	70-135	

Lab Batch #: 716244 **Sample:** 505473-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	11.4	10.0	114	70-135	
o-Terphenyl	5.97	5.00	119	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716244 **Sample:** 505473-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	9.51	10.0	95	70-135	
o-Terphenyl	5.17	5.00	103	70-135	

Lab Batch #: 716244 **Sample:** 505473-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	11.2	10.0	112	70-135	
o-Terphenyl	5.82	5.00	116	70-135	

Lab Batch #: 716389 **Sample:** 298800-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.1	10.0	101	70-135	
o-Terphenyl	5.48	5.00	110	70-135	

Lab Batch #: 716389 **Sample:** 298800-011 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	11.6	10.0	116	70-135	
o-Terphenyl	5.96	5.00	119	70-135	

Lab Batch #: 716389 **Sample:** 298800-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.2	10.0	102	70-135	
o-Terphenyl	5.49	5.00	110	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716389 **Sample:** 298800-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.1	10.0	101	70-135	
o-Terphenyl	5.45	5.00	109	70-135	

Lab Batch #: 716389 **Sample:** 298800-014 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.1	10.0	101	70-135	
o-Terphenyl	5.42	5.00	108	70-135	

Lab Batch #: 716389 **Sample:** 298800-015 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.2	10.0	102	70-135	
o-Terphenyl	5.55	5.00	111	70-135	

Lab Batch #: 716389 **Sample:** 298800-016 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.0	10.0	100	70-135	
o-Terphenyl	5.44	5.00	109	70-135	

Lab Batch #: 716389 **Sample:** 298800-017 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.2	10.0	102	70-135	
o-Terphenyl	5.52	5.00	110	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Lab Batch #: 716389 **Sample:** 505541-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	11.3	10.0	113	70-135	
o-Terphenyl	5.93	5.00	119	70-135	

Lab Batch #: 716389 **Sample:** 505541-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	9.64	10.0	96	70-135	
o-Terphenyl	5.23	5.00	105	70-135	

Lab Batch #: 716389 **Sample:** 505541-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	11.3	10.0	113	70-135	
o-Terphenyl	6.20	5.00	124	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Analyst: SHE **Date Prepared:** 03/04/2008 **Date Analyzed:** 03/04/2008

Lab Batch ID: 716209 **Sample:** 505449-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	ND	0.1000	0.0866	87	0.1	0.0881	88	2	70-125	25	
Toluene	ND	0.1000	0.0888	89	0.1	0.0878	88	1	70-125	25	
Ethylbenzene	ND	0.1000	0.0949	95	0.1	0.0896	90	6	71-129	25	
m,p-Xylenes	ND	0.2000	0.1921	96	0.2	0.1787	89	7	70-131	25	
o-Xylene	ND	0.1000	0.1033	103	0.1	0.0957	96	8	71-133	25	

Analyst: SHE **Date Prepared:** 03/05/2008 **Date Analyzed:** 03/05/2008

Lab Batch ID: 716371 **Sample:** 505526-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	ND	0.1000	0.1097	110	0.1	0.1146	115	4	70-125	25	
Toluene	ND	0.1000	0.1099	110	0.1	0.1141	114	4	70-125	25	
Ethylbenzene	ND	0.1000	0.1131	113	0.1	0.1171	117	3	71-129	25	
m,p-Xylenes	ND	0.2000	0.2238	112	0.2	0.2319	116	4	70-131	25	
o-Xylene	ND	0.1000	0.1166	117	0.1	0.1193	119	2	71-133	25	

Relative Percent Difference RPD = 200*|(D-F)/(D+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 - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Analyst: SHE **Date Prepared:** 03/06/2008 **Date Analyzed:** 03/06/2008

Lab Batch ID: 716403 **Sample:** 505546-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	ND	0.1000	0.0933	93	0.1	0.0919	92	2	70-125	25	
Toluene	ND	0.1000	0.0948	95	0.1	0.0932	93	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1002	100	0.1	0.0978	98	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2002	100	0.2	0.1953	98	2	70-131	25	
o-Xylene	ND	0.1000	0.1075	108	0.1	0.1049	105	2	71-133	25	

Relative Percent Difference RPD = 200*|(D-F)/(D+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 - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Analyst: KRB **Date Prepared:** 03/05/2008 **Date Analyzed:** 03/06/2008

Lab Batch ID: 716483 **Sample:** 505542-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
	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	ND	0.050	0.047	94	0.05	0.047	94	0	54-114	25	
Acenaphthylene	ND	0.050	0.046	92	0.05	0.046	92	0	53-113	25	
Anthracene	ND	0.050	0.046	92	0.05	0.047	94	2	56-116	25	
Benzo(a)anthracene	ND	0.050	0.047	94	0.05	0.048	96	2	59-116	25	
Benzo(a)pyrene	ND	0.050	0.046	92	0.05	0.048	96	4	58-118	25	
Benzo(b)fluoranthene	ND	0.050	0.047	94	0.05	0.049	98	4	54-123	25	
Benzo(k)fluoranthene	ND	0.050	0.046	92	0.05	0.049	98	6	52-122	25	
Benzo(g,h,i)perylene	ND	0.050	0.048	96	0.05	0.048	96	0	47-129	25	
Chrysene	ND	0.050	0.048	96	0.05	0.048	96	0	58-116	25	
Dibenz(a,h)Anthracene	ND	0.050	0.049	98	0.05	0.051	102	4	46-131	25	
Fluoranthene	ND	0.050	0.051	102	0.05	0.052	104	2	55-120	25	
Fluorene	ND	0.050	0.047	94	0.05	0.047	94	0	56-114	25	
Indeno(1,2,3-c,d)Pyrene	ND	0.050	0.048	96	0.05	0.051	102	6	44-132	25	
1-Methylnaphthalene	ND	0.050	0.044	88	0.05	0.045	90	2	47-113	25	
2-Methylnaphthalene	ND	0.050	0.048	96	0.05	0.049	98	2	57-106	25	
Naphthalene	ND	0.050	0.044	88	0.05	0.044	88	0	53-110	25	
Phenanthrene	ND	0.050	0.048	96	0.05	0.049	98	2	56-116	25	
Pyrene	ND	0.050	0.045	90	0.05	0.047	94	4	57-119	25	

Relative Percent Difference RPD = 200*|(D-F)/(D+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 - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Analyst: TTD **Date Prepared:** 03/05/2008 **Date Analyzed:** 03/07/2008

Lab Batch ID: 716527 **Sample:** 505543-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C 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	ND	0.050	0.042	84	0.05	0.044	88	5	54-114	25	
Acenaphthylene	ND	0.050	0.041	82	0.05	0.043	86	5	53-113	25	
Anthracene	ND	0.050	0.042	84	0.05	0.043	86	2	56-116	25	
Benzo(a)anthracene	ND	0.050	0.044	88	0.05	0.045	90	2	59-116	25	
Benzo(a)pyrene	ND	0.050	0.046	92	0.05	0.047	94	2	58-118	25	
Benzo(b)fluoranthene	ND	0.050	0.051	102	0.05	0.052	104	2	54-123	25	
Benzo(k)fluoranthene	ND	0.050	0.051	102	0.05	0.053	106	4	52-122	25	
Benzo(g,h,i)perylene	ND	0.050	0.025	50	0.05	0.026	52	4	47-129	25	
Chrysene	ND	0.050	0.045	90	0.05	0.046	92	2	58-116	25	
Dibenz(a,h)Anthracene	ND	0.050	0.031	62	0.05	0.032	64	3	46-131	25	
Fluoranthene	ND	0.050	0.046	92	0.05	0.047	94	2	55-120	25	
Fluorene	ND	0.050	0.045	90	0.05	0.046	92	2	56-114	25	
Indeno(1,2,3-c,d)Pyrene	ND	0.050	0.029	58	0.05	0.030	60	3	44-132	25	
1-Methylnaphthalene	ND	0.050	0.043	86	0.05	0.045	90	5	47-113	25	
2-Methylnaphthalene	ND	0.050	0.048	96	0.05	0.049	98	2	57-106	25	
Naphthalene	ND	0.050	0.041	82	0.05	0.043	86	5	53-110	25	
Phenanthrene	ND	0.050	0.044	88	0.05	0.045	90	2	56-116	25	
Pyrene	ND	0.050	0.045	90	0.05	0.046	92	2	57-119	25	

Relative Percent Difference RPD = 200*|(D-F)/(D+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 - HP Sims

Work Order #: 298800 **Project ID:** 2001-11005

Analyst: SHE **Date Prepared:** 03/04/2008 **Date Analyzed:** 03/04/2008

Lab Batch ID: 716244 **Sample:** 505473-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
	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
C6-C12 Gasoline Range Hydrocarbons	ND	100	94.3	94	100	95.2	95	1	70-135	25	
C12-C28 Diesel Range Hydrocarbons	ND	100	96.1	96	100	96.5	97	0	70-135	25	

Analyst: SHE **Date Prepared:** 03/04/2008 **Date Analyzed:** 03/05/2008

Lab Batch ID: 716389 **Sample:** 505541-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

TPH By SW8015 Mod Analytes	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
	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
C6-C12 Gasoline Range Hydrocarbons	ND	100	95.6	96	100	94.1	94	2	70-135	25	
C12-C28 Diesel Range Hydrocarbons	ND	100	96.7	97	100	94.8	95	2	70-135	25	

Relative Percent Difference RPD = 200*|(D-F)/(D+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 - HP Sims

Work Order #: 298800

Lab Batch #: 716244 **Project ID:** 2001-11005

Date Analyzed: 03/05/2008 **Date Prepared:** 03/04/2008 **Analyst:** SHE

QC- Sample ID: 298799-002 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

TPH by SW8015 Mod	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	100	93.7	94	70-135	
C12-C28 Diesel Range Hydrocarbons	ND	100	95.2	95	70-135	

Lab Batch #: 716389

Date Analyzed: 03/05/2008 **Date Prepared:** 03/04/2008 **Analyst:** SHE

QC- Sample ID: 298800-011 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

TPH by SW8015 Mod	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	100	92.4	92	70-135	
C12-C28 Diesel Range Hydrocarbons	ND	100	93.0	93	70-135	

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

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge - HP Sims

Work Order # : 298800 **Project ID:** 2001-11005

Lab Batch ID: 716209 **QC- Sample ID:** 298800-010 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: *03/05/2008* ***Date Prepared:*** *03/04/2008* ***Analyst:*** *SHE*

Reporting Units: mg/L

BTEX by EPA 8021B 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	ND	0.1000	0.0879	88	0.1000	0.0895	90	2	70-125	25	
Toluene	ND	0.1000	0.0893	89	0.1000	0.0915	92	3	70-125	25	
Ethylbenzene	ND	0.1000	0.0944	94	0.1000	0.0971	97	3	71-129	25	
m,p-Xylenes	ND	0.2000	0.1861	93	0.2000	0.1918	96	3	70-131	25	
o-Xylene	ND	0.1000	0.0978	98	0.1000	0.1006	101	3	71-133	25	

Lab Batch ID: 716371 **QC- Sample ID:** 298874-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 03/05/2008 **Date Prepared:** 03/05/2008 **Analyst:** SHE

Reporting Units: mg/L

BTEX by EPA 8021B 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	ND	0.1000	0.0844	84	0.1000	0.0811	81	4	70-125	25	
Toluene	ND	0.1000	0.0850	85	0.1000	0.0826	83	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0882	88	0.1000	0.0881	88	0	71-129	25	
m,p-Xylenes	ND	0.2000	0.1732	87	0.2000	0.1728	86	1	70-131	25	
o-Xylene	ND	0.1000	0.0908	91	0.1000	0.0911	91	0	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

Relative Percent Difference RPD = 200*(D-G)/(D+G)

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 LAB OF

Form 3 - MS / MSD Recoveries

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: Livingston Ridge - HP Sims

Work Order # : 298800 **Project ID:** 2001-11005

Lab Batch ID: 716403 **QC- Sample ID:** 298981-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 03/06/2008 **Date Prepared:** 03/06/2008 **Analyst:** SHE

Reporting Units: mg/L

BTEX by EPA 8021B 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	ND	0.1000	0.0837	84	0.1000	0.0848	85	1	70-125	25	
Toluene	ND	0.1000	0.0856	86	0.1000	0.0861	86	0	70-125	25	
Ethylbenzene	ND	0.1000	0.0921	92	0.1000	0.0910	91	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.1813	91	0.2000	0.1789	89	2	70-131	25	
o-Xylene	ND	0.1000	0.0967	97	0.1000	0.0948	95	2	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

Relative Percent Difference RPD = 200*(D-G)/(D+G)

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: Catharine London
Sampler's Name: Chris Aubds
Sampler's Signature:

Laboratory: E. COT
Address:
Contact:
Phone:
PO/SO #: 2001-11005

ANALYSIS REQUESTED

Lab use only
Due Date:
Temp. of coolers when received (C°): 3.5
1 2 3 4 5 6
Page 1 of 4

Proj. No.: A4077008
Project Name: Livingston Ridge - HP Sims
No/Type of Containers

Matrix	Date	Time	Composite	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	TPH (8015m)	BTEX (8021B)	PAH (8270C)	Lab Sample ID (Lab Use Only)
W	2/27/08	1133		X	MW-11			4				X	X		2198800-01
		1133			MW-11				1					X	-01
		1204			MW-13			4				X	X		-02
		1204			MW-13				1					X	-02
		1232			MW-12			4				X	X		-03
		1232			MW-12				1					X	-03
		1255			MW-14			4				X	X		-04
		1255			MW-14				1					X	-04
		1326			MW-15			4				X	X		-05
		1326			MW-15				1					X	-05

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

	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	3/3/08	1700			
Relinquished by (Signature)					
Relinquished by (Signature)					
Relinquished by (Signature)			Received by: (Signature)	3/3/08	1700

NOTES: Camille Reynolds w/ Plains
w/ labels & seals

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: Catherine London
Sampler's Name: Chris Aulds
Sampler's Signature:

Laboratory: ELOT
Address:
Contact:
Phone:
PO/SO #: 2001-11005

Proj. No.: A4077008
Project Name: Livingston Ridge - HP Sims

Lab use only
Due Date:
Temp. of coolers when received (C°): 3.5
1 2 3 4 5
Page 2 of 4

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No/Type of Containers: VOA	A/G 1 Lt.	250 ml	P/O	ANALYSIS REQUESTED: TPH (8015M)	BTEX (8021B)	PAH (8270C)	Lab Sample ID (Lab Use Only) 298800
W	2/29/08	1425		X	MW-10			4				X	X		-06
		1425			MW-10				1					X	1
		1414			MW-3			4				X	X		-07
		1414			MW-3				1					X	1
		1506			MW-7			4				X	X		-08
		1506			MW-7				1					X	1
		1543			MW-2			4				X	X		-09
		1543			MW-2				1					X	1
		1607			MW-9			4				X	X		-10
		1607			MW-9				1					X	1

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

	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	3/5/08	1200			
Relinquished by (Signature)					
Relinquished by (Signature)					
Relinquished by (Signature)			Received by: (Signature) Andrea Jenn	3/3/08	1700

NOTES: Camille Reynolds w/Plains
w/labels & seals

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: Catherine London

Laboratory: ELOT
Address:
Contact:
Phone:
PO/SO #: 2001 - 11005

Sampler's Name: Chris Avilds
Sampler's Signature:

Proj. No.: A4077008
Project Name: Livingston Ridge- HP Sims
No/Type of Containers

ANALYSIS REQUESTED: TPH (8015 M), BTEX (8021B), PAH (8270C)

Lab use only
Due Date:
Temp. of coolers when received (C°): 3.5
1 2 3 4 5
Page 3 of 4

218800

Matrix	Date	Time	Composite	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	TPH	BTEX	PAH	Lab Sample ID (Lab Use Only)
W	2/29/08	1636		X	MW-6			4				X	X		-11
		1636			MW-6				1					X	1
		1703			MW-8			4				X	X		-12
		1703			MW-8				1					X	1
		1734			MW-5			4				X	X		-13
		1734			MW-5				1					X	1
		1800			MW-4			4				X	X		-14
		1800			MW-4				1					X	1
		1824			MW-1			4				X	X		-15
		1824			MW-1				1					X	1

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	2/29/08	1700			
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) Cindy Jam	Date: 3/3/08	Time: 17:05

NOTES: Camille Reynolds w/ Plains w/ labels & seals

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: Catherine London
Sampler's Name: Chris Aulds
Sampler's Signature:

Laboratory: ELOT
Address:
Contact:
Phone:
PO/SO #: 2001-11005

Lab use only
Due Date:
Temp. of coolers when received (C°): 1 2 3 4 5
Page 4 of 4

Proj. No.: A4077008
Project Name: Livingston Ridge - HP Sims

ANALYSIS REQUESTED: TPH (8015m), BTEX (8021B), PAH (8270C)

Matrix	Date	Time	# of Containers	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	TPH	BTEX	PAH	Lab Sample ID (Lab Use Only)
W	2/29/08	1838		X	Decon			2				X			-16
		1838													3306
		1850			TMW-1			4				X	X		-17
		1850			TMW-1				1					X	1

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

Relinquished by (Signature)	Date	Time	Received by: (Signature)	Date	Time
	3/3/08	1700			
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) Andrea Fann	Date 3/3/08	Time 1700

NOTES: Camille Reynolds w/ Plains w/ labels & seals

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 Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Terracon / Plains

Date/ Time: 3.3.08 17:00

Lab ID #: 298800

Initials: GL

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	3.5 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20	VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

Analytical Report 304739

for

PLAINS ALL AMERICAN EH&S

Project Manager: Camille Reynolds

Livingston Ridge-HP Sims

2001-11005

03-JUN-08

ENVIRONMENTAL LAB OF

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

03-JUN-08

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

Reference: XENCO Report No: **304739**
Livingston Ridge-HP Sims
Project Address:

Camille Reynolds:

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 304739. 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. 304739 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 304739

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	May-28-08 15:55		304739-001
MW-15	W	May-28-08 16:27		304739-002
MW-12	W	May-28-08 17:02		304739-003
MW-13	W	May-28-08 17:36		304739-004
MW-11	W	May-28-08 18:15		304739-005
MW-10	W	May-28-08 19:19		304739-006
MW-6	W	May-28-08 19:49		304739-007
MW-9	W	May-28-08 20:34		304739-008

Certificate of Analysis Summary 304739

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge-HP Sims

Project Id: 2001-11005
Contact: Camille Reynolds
Project Location:

Date Received in Lab: Thu May-29-08 09:55 am
Report Date: 03-JUN-08
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	304739-001		304739-002		304739-003		304739-004		304739-005		304739-006	
	Field Id:	MW-14		MW-15		MW-12		MW-13		MW-11		MW-10	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	May-28-08 15:55		May-28-08 16:27		May-28-08 17:02		May-28-08 17:36		May-28-08 18:15		May-28-08 19:19	
BTEX by EPA 8021B	*Extracted:*	Jun-02-08 10:00		Jun-02-08 10:00		Jun-02-08 10:00		Jun-02-08 10:00		Jun-02-08 17:48		Jun-02-08 17:48	
	Analyzed:	Jun-02-08 20:30		Jun-02-08 20:46		Jun-02-08 21:03		Jun-02-08 21:19		Jun-02-08 23:32		Jun-02-08 23:49	
	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	0.0020	0.0010	0.0018	0.0010	ND	0.0010	ND	0.0010
Total Xylenes		ND		ND		0.002		0.0018		ND		ND	
Total BTEX		ND		ND		0.002		0.0018		ND		ND	

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 304739

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge-HP Sims

Project Id: 2001-11005
Contact: Camille Reynolds
Project Location:

Date Received in Lab: Thu May-29-08 09:55 am
Report Date: 03-JUN-08
Project Manager: Brent Barron, II

Analysis Requested							
	Lab Id:	304739-007		304739-008			
	Field Id:	MW-6		MW-9			
	Depth:						
	Matrix:	WATER		WATER			
	Sampled:	May-28-08 19:49		May-28-08 20:34			
BTEX by EPA 8021B	*Extracted:*	Jun-02-08 17:48		Jun-02-08 17:48			
	Analyzed:	Jun-03-08 00:06		Jun-03-08 00:22			
	Units/RL:	mg/L	RL	mg/L	RL		
Benzene		ND	0.0010	ND	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		ND	0.0010	ND	0.0010		
Total Xylenes		ND		ND			
Total BTEX		ND		ND			

Brent Barron
Odessa Laboratory Director

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(PQL) and above the SQL(MDL).

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.

* Outside XENCO'S scope of NELAC Accreditation

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order #: 304739 **Project ID:** 2001-11005

Lab Batch #: 724179 **Sample:** 304736-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	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	0.0310	0.0300	103	80-120	

Lab Batch #: 724179 **Sample:** 304736-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	0.0306	0.0300	102	80-120	

Lab Batch #: 724179 **Sample:** 304739-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 724179 **Sample:** 304739-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	0.0300	0.0300	100	80-120	

Lab Batch #: 724179 **Sample:** 304739-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order #: 304739 **Project ID:** 2001-11005

Lab Batch #: 724179 **Sample:** 304739-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B 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	0.0317	0.0300	106	80-120	

Lab Batch #: 724179 **Sample:** 509908-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 724179 **Sample:** 509908-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

Lab Batch #: 724179 **Sample:** 509908-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 724294 **Sample:** 304739-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B 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	0.0270	0.0300	90	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order #: 304739 **Project ID:** 2001-11005

Lab Batch #: 724294 **Sample:** 304739-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 724294 **Sample:** 304739-006 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	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	0.0294	0.0300	98	80-120	

Lab Batch #: 724294 **Sample:** 304739-006 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	0.0300	0.0300	100	80-120	

Lab Batch #: 724294 **Sample:** 304739-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0319	0.0300	106	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 724294 **Sample:** 304739-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order #: 304739 **Project ID:** 2001-11005

Lab Batch #: 724294 **Sample:** 509986-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 724294 **Sample:** 509986-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 724294 **Sample:** 509986-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order #: 304739 **Project ID:** 2001-11005

Analyst: SHE **Date Prepared:** 06/02/2008 **Date Analyzed:** 06/02/2008

Lab Batch ID: 724179 **Sample:** 509908-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0892	89	0.1	0.0901	90	1	70-125	25	
Toluene	ND	0.1000	0.0904	90	0.1	0.0924	92	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0929	93	0.1	0.0950	95	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.1949	97	0.2	0.1976	99	1	70-131	25	
o-Xylene	ND	0.1000	0.1030	103	0.1	0.1039	104	1	71-133	25	

Analyst: SHE **Date Prepared:** 06/02/2008 **Date Analyzed:** 06/02/2008

Lab Batch ID: 724294 **Sample:** 509986-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1005	101	0.1	0.1065	107	6	70-125	25	
Toluene	ND	0.1000	0.1041	104	0.1	0.1095	110	5	70-125	25	
Ethylbenzene	ND	0.1000	0.1084	108	0.1	0.1142	114	5	71-129	25	
m,p-Xylenes	ND	0.2000	0.2242	112	0.2	0.2362	118	5	70-131	25	
o-Xylene	ND	0.1000	0.1149	115	0.1	0.1186	119	3	71-133	25	

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

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order # : 304739 **Project ID:** 2001-11005

Lab Batch ID: 724179 **QC- Sample ID:** 304736-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/02/2008 **Date Prepared:** 06/02/2008 **Analyst:** SHE

Reporting Units: mg/L

BTEX by EPA 8021B 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	ND	0.1000	0.0921	92	0.1000	0.1024	102	10	70-125	25	
Toluene	ND	0.1000	0.0952	95	0.1000	0.1062	106	11	70-125	25	
Ethylbenzene	0.0012	0.1000	0.0989	98	0.1000	0.1103	109	11	71-129	25	
m,p-Xylenes	ND	0.2000	0.2045	102	0.2000	0.2279	114	11	70-131	25	
o-Xylene	ND	0.1000	0.1050	105	0.1000	0.1167	117	11	71-133	25	

Lab Batch ID: 724294 **QC- Sample ID:** 304739-006 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/03/2008 **Date Prepared:** 06/02/2008 **Analyst:** SHE

Reporting Units: mg/L

BTEX by EPA 8021B 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	ND	0.1000	0.0892	89	0.1000	0.0856	86	3	70-125	25	
Toluene	ND	0.1000	0.0891	89	0.1000	0.0874	87	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0907	91	0.1000	0.0904	90	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.1866	93	0.2000	0.1863	93	0	70-131	25	
o-Xylene	ND	0.1000	0.0951	95	0.1000	0.0940	94	1	71-133	25	

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

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: Catharine London

Laboratory: ELOT
Address:
Contact:
Phone:
PO/SO #: 2001-11005

Sampler's Name: Chris Aulds
Sampler's Signature:

Proj. No.: A7077008
Project Name: Livingston Ridge - HPSim
No/Type of Containers: 16/VOA

ANALYSIS REQUESTED: BTEX (8021B)

Lab use only
Due Date:
Temp. of coolers when received (C°): 2.5
1 2 3 4 5
Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AG 1 Lt	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	5/28/08	1555	X		MW-14			2			X	304739-01
		1627			MW-15							
		1702			MW-12							
		1736			MW-13							
		1815			MW-11							
		1919			MW-10							
		1949			MW-6							
		2034			MW-9							

Turn around time: ☒ Normal ☐ 25% Rush ☐ 60% Rush ☐ 100% Rush

	Date	Time		Date	Time	NOTES
Relinquished by (Signature)	5/28/08	0955	Received by: (Signature)			Camille w/ Plains
Relinquished by (Signature)			Received by: (Signature)			BTEX only on all samples
Relinquished by (Signature)			Received by: (Signature)			
Relinquished by (Signature)			Received by: (Signature) Andrea Lam	5-29-08	7:50	w/ labels & seals

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; AG - 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) 268-8500 Fax (817) 268-8502
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 Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Terracon | Plains

Date/ Time: 5-29-08 9:55

Lab ID #: 304739

Initials: AL

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	2-5 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20	VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken:

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

Analytical Report 310781

for

PLAINS ALL AMERICAN EH&S

Project Manager: Camille Reynolds

Livingston Ridge

2001-11005

26-AUG-08

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215 - Odessa/Midland, TX T104704215-08-TX

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

26-AUG-08

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

Reference: XENCO Report No: **310781**
Livingston Ridge
Project Address:

Camille Reynolds:

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 310781. 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. 310781 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 310781

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	Aug-21-08 09:28		310781-001
MW-11	W	Aug-21-08 10:13		310781-002
MW-15	W	Aug-21-08 09:45		310781-003
MW-13	W	Aug-21-08 10:49		310781-004
MW-12	W	Aug-21-08 11:23		310781-005
MW-10	W	Aug-21-08 11:48		310781-006
MW-9	W	Aug-21-08 12:18		310781-007
MW-6	W	Aug-21-08 13:00		310781-008
MW-4	W	Aug-21-08 13:50		310781-009
MW-5	W	Aug-21-08 14:55		310781-010

Certificate of Analysis Summary 310781

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Camille Reynolds
Project Location:

Date Received in Lab: Fri Aug-22-08 09:45 am
Report Date: 26-AUG-08
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	310781-001		310781-002		310781-003		310781-004		310781-005		310781-006	
	Field Id:	MW-14		MW-11		MW-15		MW-13		MW-12		MW-10	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Aug-21-08 09:28		Aug-21-08 10:13		Aug-21-08 09:45		Aug-21-08 10:49		Aug-21-08 11:23		Aug-21-08 11:48	
BTEX by EPA 8021B	***Extracted:***	Aug-22-08 15:00		Aug-22-08 15:00		Aug-22-08 15:00		Aug-22-08 15:00		Aug-22-08 15:00		Aug-22-08 15:00	
	Analyzed:	Aug-23-08 01:38		Aug-23-08 03:13		Aug-23-08 03:37		Aug-23-08 04:00		Aug-23-08 05:35		Aug-23-08 04:24	
	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	0.0041	0.0010	ND	0.0010	0.0518	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	0.0398	0.0010	ND	0.0010
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	0.0036	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
Total Xylenes		ND		ND		ND		ND		0.0036		ND	
Total BTEX		ND		ND		0.0041		ND		0.0952		ND	

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 310781

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Camille Reynolds
Project Location:

Date Received in Lab: Fri Aug-22-08 09:45 am
Report Date: 26-AUG-08
Project Manager: Brent Barron, II

Analysis Requested									
	Lab Id:	310781-007		310781-008		310781-009		310781-010			
	Field Id:	MW-9		MW-6		MW-4		MW-5			
	Depth:										
	Matrix:	WATER		WATER		WATER		WATER			
	Sampled:	Aug-21-08 12:18		Aug-21-08 13:00		Aug-21-08 13:50		Aug-21-08 14:55			
BTEX by EPA 8021B	*Extracted:*	Aug-22-08 15:00		Aug-22-08 15:00		Aug-22-08 15:00		Aug-23-08 12:09			
	Analyzed:	Aug-23-08 04:48		Aug-23-08 05:12		Aug-23-08 05:59		Aug-24-08 05:27			
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL		
Benzene		ND	0.0010	0.0017	0.0010	0.0232	0.0010	0.0107	0.0010		
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020		
Ethylbenzene		ND	0.0010	ND	0.0010	0.0303	0.0010	0.0032	0.0010		
m,p-Xylenes		ND	0.0020	ND	0.0020	0.0220	0.0020	ND	0.0020		
o-Xylene		ND	0.0010	ND	0.0010	0.0147	0.0010	0.0027	0.0010		
Total Xylenes		ND		ND		0.0367		0.0027			
Total BTEX		ND		0.0017		0.0902		0.0166			

Brent Barron
Odessa Laboratory Director

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(PQL) and above the SQL(MDL).

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.

* Outside XENCO'S scope of NELAC Accreditation

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Order #: 310781 **Project ID:** 2001-11005

Lab Batch #: 732054 **Sample:** 310781-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0359	0.0300	120	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 732054 **Sample:** 310781-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY 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	0.0342	0.0300	114	80-120	

Lab Batch #: 732054 **Sample:** 310781-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B 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	0.0345	0.0300	115	80-120	

Lab Batch #: 732054 **Sample:** 310781-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0350	0.0300	117	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 732054 **Sample:** 310781-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0392	0.0300	131	80-120	**
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

** 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 Order #: 310781 **Project ID:** 2001-11005

Lab Batch #: 732054 **Sample:** 310781-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0341	0.0300	114	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 732054 **Sample:** 310781-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0361	0.0300	120	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 732054 **Sample:** 310781-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0352	0.0300	117	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 732054 **Sample:** 310781-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0368	0.0300	123	80-120	**
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 732054 **Sample:** 310781-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0398	0.0300	133	80-120	**
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

** 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 Order #: 310781 **Project ID:** 2001-11005

Lab Batch #: 732054 **Sample:** 310781-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0350	0.0300	117	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 732054 **Sample:** 514452-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 732054 **Sample:** 514452-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0349	0.0300	116	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 732054 **Sample:** 514452-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B 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	0.0310	0.0300	103	80-120	

Lab Batch #: 732194 **Sample:** 310714-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B 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	0.0328	0.0300	109	80-120	

** 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 Order #: 310781 **Project ID:** 2001-11005

Lab Batch #: 732194 **Sample:** 310714-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B 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	0.0312	0.0300	104	80-120	

Lab Batch #: 732194 **Sample:** 310781-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0364	0.0300	121	80-120	**
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 732194 **Sample:** 514543-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 732194 **Sample:** 514543-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0350	0.0300	117	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 732194 **Sample:** 514543-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

** 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 #: 310781 **Project ID:** 2001-11005

Analyst: BRB **Date Prepared:** 08/22/2008 **Date Analyzed:** 08/22/2008

Lab Batch ID: 732054 **Sample:** 514452-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	ND	0.1000	0.0733	73	0.1	0.0916	92	22	70-125	25	
Toluene	ND	0.1000	0.0768	77	0.1	0.0954	95	22	70-125	25	
Ethylbenzene	ND	0.1000	0.0874	87	0.1	0.1098	110	23	71-129	25	
m,p-Xylenes	ND	0.2000	0.1804	90	0.2	0.2239	112	22	70-131	25	
o-Xylene	ND	0.1000	0.0845	85	0.1	0.1051	105	22	71-133	25	

Analyst: BRB **Date Prepared:** 08/23/2008 **Date Analyzed:** 08/23/2008

Lab Batch ID: 732194 **Sample:** 514543-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	ND	0.1000	0.1045	105	0.1	0.1061	106	2	70-125	25	
Toluene	ND	0.1000	0.1040	104	0.1	0.1062	106	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1120	112	0.1	0.1145	115	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2284	114	0.2	0.2327	116	2	70-131	25	
o-Xylene	ND	0.1000	0.1082	108	0.1	0.1103	110	2	71-133	25	

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

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order # : 310781 **Project ID:** 2001-11005

Lab Batch ID: 732054 **QC- Sample ID:** 310781-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 08/23/2008 **Date Prepared:** 08/22/2008 **Analyst:** BRB

Reporting Units: mg/L

BTEX by EPA 8021B 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	ND	0.1000	0.0837	84	0.1000	0.0844	84	0	70-125	25	
Toluene	ND	0.1000	0.0865	87	0.1000	0.0874	87	0	70-125	25	
Ethylbenzene	ND	0.1000	0.1006	101	0.1000	0.1020	102	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.2080	104	0.2000	0.2113	106	2	70-131	25	
o-Xylene	ND	0.1000	0.0948	95	0.1000	0.0969	97	2	71-133	25	

Lab Batch ID: 732194 **QC- Sample ID:** 310714-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 08/24/2008 **Date Prepared:** 08/23/2008 **Analyst:** BRB

Reporting Units: mg/L

BTEX by EPA 8021B 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	ND	0.1000	0.1060	106	0.1000	0.0994	99	7	70-125	25	
Toluene	ND	0.1000	0.1066	107	0.1000	0.1004	100	7	70-125	25	
Ethylbenzene	ND	0.1000	0.1151	115	0.1000	0.1077	108	6	71-129	25	
m,p-Xylenes	ND	0.2000	0.2334	117	0.2000	0.2186	109	7	70-131	25	
o-Xylene	ND	0.1000	0.1107	111	0.1000	0.1033	103	7	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

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: Catharine Condon
Sampler's Name: Chris Aulds
Sampler's Signature:

Laboratory: Xenco
Address:
Contact:
Phone:
PO/SO #: 2001-11095

Lab use only
Due Date:
Temp. of coolers when received (C°): 1.6
1 2 3 4 5
Page 1 of 1

Proj. No.: A4077008
Project Name: Livingston Ridge
No/Type of Containers: 10/VOA

ANALYSIS REQUESTED: BTEX (8021B)

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	8/21/08	0928		X	mw-14			2				310781-01
		1013			mw-11							-02
		0945			mw-15							-03
		1049			mw-13							-04
		1123			mw-12							-05
		1148			mw-10							-06
		1219			mw-9							-07
		1300			mw-6							-08
		1350			mw-4							-09
		1455			mw-5							-10

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	8.21.08	945			
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) Andrea Cain	Date: 8.22.08	Time: 9:45

NOTES: Camille Bryant w/ Plains w/labels & Seals

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 Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Terracon / Plains

Date/ Time: 8.22.08 9:45

Lab ID #: 316781

Initials: AL

Sample Receipt Checklist

			not frozen	Client Initials
#1	Temperature of container/ cooler?	(Yes)	No	-1.0 °C	
#2	Shipping container in good condition?	(Yes)	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	(Not Present)	
#4	Custody Seals intact on sample bottles/ container?	(Yes)	No	Not Present	
#5	Chain of Custody present?	(Yes)	No		
#6	Sample instructions complete of Chain of Custody?	(Yes)	No		
#7	Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8	Chain of Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont / Lid	
#9	Container label(s) legible and intact?	(Yes)	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11	Containers supplied by ELOT?	(Yes)	No		
#12	Samples in proper container/ bottle?	(Yes)	No	See Below	
#13	Samples properly preserved?	(Yes)	No	See Below	
#14	Sample bottles intact?	(Yes)	No		
#15	Preservations documented on Chain of Custody?	(Yes)	No		
#16	Containers documented on Chain of Custody?	(Yes)	No		
#17	Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18	All samples received within sufficient hold time?	(Yes)	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	(Not Applicable)	
#20	VOC samples have zero headspace?	(Yes)	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

Analytical Report 317354

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Ridge

2001-11005

19-NOV-08

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215-08B - Odessa/Midland, TX T104704400-08

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

19-NOV-08

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

Reference: XENCO Report No: **317354**
Livingston Ridge
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 317354. 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. 317354 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 317354

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	Nov-08-08 13:24		317354-001
MW-15	W	Nov-08-08 13:47		317354-002
MW-11	W	Nov-08-08 14:12		317354-003
MW-13	W	Nov-08-08 14:37		317354-004
MW-12	W	Nov-08-08 15:01		317354-005
MW-10	W	Nov-08-08 15:27		317354-006
MW-9	W	Nov-08-08 15:55		317354-007
MW-6	W	Nov-08-08 16:24		317354-008
MW-4	W	Nov-08-08 16:47		317354-009
MW-5	W	Nov-08-08 17:08		317354-010

Certificate of Analysis Summary 317354

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Tue Nov-11-08 04:55 pm
Report Date: 19-NOV-08
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	317354-001		317354-002		317354-003		317354-004		317354-005		317354-006	
	Field Id:	MW-14		MW-15		MW-11		MW-13		MW-12		MW-10	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Nov-08-08 13:24		Nov-08-08 13:47		Nov-08-08 14:12		Nov-08-08 14:37		Nov-08-08 15:01		Nov-08-08 15:27	
BTEX by EPA 8021B	*Extracted:*	Nov-17-08 08:00		Nov-17-08 08:00		Nov-17-08 08:00		Nov-17-08 08:00		Nov-17-08 08:00		Nov-17-08 08:00	
	Analyzed:	Nov-17-08 17:57		Nov-17-08 18:20		Nov-17-08 18:42		Nov-17-08 19:04		Nov-17-08 19:26		Nov-17-08 19:48	
	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	0.0012	0.0010	ND	0.0010	0.0033	0.0010	ND	0.0010
Toluene		0.0023	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		0.0010	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		0.0012	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total Xylenes		0.0012	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030
Total BTEX		0.0045	0.0070	ND	0.0070	0.0012	0.0070	ND	0.0070	0.0033	0.0070	ND	0.0070

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 317354

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Tue Nov-11-08 04:55 pm
Report Date: 19-NOV-08
Project Manager: Brent Barron, II

Analysis Requested									
	Lab Id:	317354-007		317354-008		317354-009		317354-010			
	Field Id:	MW-9		MW-6		MW-4		MW-5			
	Depth:										
	Matrix:	WATER		WATER		WATER		WATER			
	Sampled:	Nov-08-08 15:55		Nov-08-08 16:24		Nov-08-08 16:47		Nov-08-08 17:08			
BTEX by EPA 8021B	***Extracted:***	Nov-17-08 08:00		Nov-17-08 08:00		Nov-18-08 10:00		Nov-17-08 16:38			
	Analyzed:	Nov-17-08 20:10		Nov-17-08 20:32		Nov-18-08 16:30		Nov-18-08 11:44			
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL		
Benzene		ND	0.0010	ND	0.0010	0.0374	0.0010	0.2551	0.0050		
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0100		
Ethylbenzene		ND	0.0010	ND	0.0010	0.0041	0.0010	0.2323	0.0050		
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	0.1640	0.0100		
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	0.1145	0.0050		
Total Xylenes		ND	0.0030	ND	0.0030	ND	0.0030	0.2785	0.0150		
Total BTEX		ND	0.0070	ND	0.0070	0.0415	0.0070	0.7659	0.0350		

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

Brent Barron
Odessa Laboratory Director

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.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 317354,

Project ID: 2001-11005

Lab Batch #: 740498 **Sample:** 317192-007 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

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

Lab Batch #: 740498 **Sample:** 317192-007 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 740498 **Sample:** 317354-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 740498 **Sample:** 317354-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 740498 **Sample:** 317354-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

** 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 : 317354, **Project ID:** 2001-11005

Lab Batch #: 740498 **Sample:** 317354-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0357	0.0300	119	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 740498 **Sample:** 317354-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0368	0.0300	123	80-120	**
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 740498 **Sample:** 317354-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 740498 **Sample:** 317354-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 740498 **Sample:** 317354-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

** 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 : 317354,

Project ID: 2001-11005

Lab Batch #: 740498 **Sample:** 519424-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY 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	0.0270	0.0300	90	80-120	

Lab Batch #: 740498 **Sample:** 519424-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0334	0.0300	111	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 740498 **Sample:** 519424-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B 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	0.0279	0.0300	93	80-120	

Lab Batch #: 740568 **Sample:** 317354-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 740568 **Sample:** 317382-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY 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	0.0281	0.0300	94	80-120	

** 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 : 317354,

Project ID: 2001-11005

Lab Batch #: 740568 **Sample:** 317382-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	0.0290	0.0300	97	80-120	

Lab Batch #: 740568 **Sample:** 519471-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	0.0280	0.0300	93	80-120	

Lab Batch #: 740568 **Sample:** 519471-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 740568 **Sample:** 519471-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	0.0279	0.0300	93	80-120	

Lab Batch #: 740722 **Sample:** 317354-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0341	0.0300	114	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

** 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 : 317354,

Project ID: 2001-11005

Lab Batch #: 740722 **Sample:** 519579-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B 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	0.0268	0.0300	89	80-120	

Lab Batch #: 740722 **Sample:** 519579-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0341	0.0300	114	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 740722 **Sample:** 519579-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

** 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 #: 317354 **Project ID:** 2001-11005

Analyst: BRB **Date Prepared:** 11/17/2008 **Date Analyzed:** 11/17/2008

Lab Batch ID: 740498 **Sample:** 519424-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	ND	0.1000	0.1070	107	0.1	0.1063	106	1	70-125	25	
Toluene	ND	0.1000	0.0999	100	0.1	0.1002	100	0	70-125	25	
Ethylbenzene	ND	0.1000	0.0993	99	0.1	0.1010	101	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2014	101	0.2	0.2052	103	2	70-131	25	
o-Xylene	ND	0.1000	0.0934	93	0.1	0.0963	96	3	71-133	25	

Analyst: ASA **Date Prepared:** 11/17/2008 **Date Analyzed:** 11/17/2008

Lab Batch ID: 740568 **Sample:** 519471-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	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	ND	0.1000	0.1015	102	0.1	0.1038	104	2	70-125	25	
Toluene	ND	0.1000	0.0950	95	0.1	0.0966	97	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0952	95	0.1	0.0965	97	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.1937	97	0.2	0.1953	98	1	70-131	25	
o-Xylene	ND	0.1000	0.0918	92	0.1	0.0930	93	1	71-133	25	

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

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 317354 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 11/18/2008 **Date Analyzed:** 11/18/2008

Lab Batch ID: 740722 **Sample:** 519579-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0374	0.1000	0.1051	105	0.1	0.1035	104	2	70-125	25	
Toluene	ND	0.1000	0.0989	99	0.1	0.0971	97	2	70-125	25	
Ethylbenzene	0.0041	0.1000	0.0993	99	0.1	0.0971	97	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2012	101	0.2	0.1971	99	2	70-131	25	
o-Xylene	ND	0.1000	0.0943	94	0.1	0.0922	92	2	71-133	25	

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

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order # : 317354 **Project ID:** 2001-11005

Lab Batch ID: 740498 **QC- Sample ID:** 317192-007 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/17/2008 **Date Prepared:** 11/17/2008 **Analyst:** BRB

Reporting Units: mg/L

BTEX by EPA 8021B 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	ND	0.1000	0.1010	101	0.1000	0.1021	102	1	70-125	25	
Toluene	ND	0.1000	0.0945	95	0.1000	0.0960	96	1	70-125	25	
Ethylbenzene	ND	0.1000	0.0950	95	0.1000	0.0967	97	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.1923	96	0.2000	0.1968	98	2	70-131	25	
o-Xylene	ND	0.1000	0.0916	92	0.1000	0.0936	94	2	71-133	25	

Lab Batch ID: 740568 **QC- Sample ID:** 317382-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/18/2008 **Date Prepared:** 11/17/2008 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021B 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	ND	0.1000	0.0955	96	0.1000	0.0975	98	2	70-125	25	
Toluene	ND	0.1000	0.0874	87	0.1000	0.0898	90	3	70-125	25	
Ethylbenzene	ND	0.1000	0.0873	87	0.1000	0.0891	89	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.1752	88	0.2000	0.1788	89	1	70-131	25	
o-Xylene	ND	0.1000	0.0850	85	0.1000	0.0864	86	1	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: Catharine London

Laboratory: Xenco
Address:
Contact:
Phone:
PO/SO #: 2001-11005

Lab use only
Due Date:

Temp. of coolers when received (C°): 4.5
1 | 2 | 3 | 4 | 5

Page 1 of 1

Sampler's Name: Chris Aulds
Sampler's Signature:

Proj. No.: A4077008
Project Name: Livingston Ridge
No/Type of Containers

ANALYSIS REQUESTED

BTEX (8021B)

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	11/8/08	1324		X	MW-14			4				317354-01
		1347			MW-15							-02
		1412			MW-11							-03
		1437			MW-13							-04
		1501			MW-12							-05
		1527			MW-10							-06
		1555			MW-9							-07
		1624			MW-6							-08
		1647			MW-4							-09
		1709			MW-5							-10

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	11/11/08	1655			
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) Andrea Fox	Date: 11-11-08	Time: 1655

NOTES: w/labels & seals on containers

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 / Cr 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 Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Terracon / Plains

Date/ Time: 11.11.09 16:55

Lab ID # : 317354

Initials: AL

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	4.5 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20	VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

Andrea Lam

From: "Aulds, Chris L" <claulds@terracon.com>
To: "Andrea Lam" <andrea.lam@xenco.com>
Sent: Wednesday, November 12, 2008 1:19 PM
Subject: RE: Livingston Ridge / 317354

Yes ma'am.

Chris Aulds
Environmental Technician
Terracon
24 Smith Road, Suite 261 I Midland, Texas 79705
P 432-684-9600 I F 432-684-9608 I M 432-288-8872
claulds@terracon.com I www.terracon.com

From: Andrea Lam [mailto:andrea.lam@xenco.com]
Sent: Wednesday, November 12, 2008 11:40 AM
To: Aulds, Chris L
Subject: Livingston Ridge / 317354

Chris- I just want to confirm per our phone call that there are only two sample containers per sample for this project.

Thank You,
Andrea Lam
Sample Receiving / Project Assistant

Environmental Lab of Texas
A Xenco Company
12600 W I-20 E
Odessa, TX 79765
432-563-1800

11/12/2008

APPENDIX D

CD of 2008 Annual Groundwater Monitoring Report and Historical Gauging Data