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Annual GW Mon. REPORTS

DATE:

2009

2009 ANNUAL GROUNDWATER MONITORING REPORT

Livingston Line – Bob McCasland
NE ¼ of the SW ¼, Section 3, Township 21 South, Range 37 East
Plains Pipeline SRS Number 2001-11226
Lea County, New Mexico
NMOCD File Number IR – 0395

Terracon Project Number A4077007

January 8, 2010

Prepared for:

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

Prepared by:

Terracon

Midland, Texas

Terracon

January 8, 2010

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: 2009 Annual Groundwater Monitoring Report
Livingston Line - Bob McCasland
NE ¼ of the SW ¼, Section 3, T21S, R37E
Lea County, New Mexico
NMOCD File Number IR - 0395
Plains Pipeline, L.P. SRS Number 2001-11226
Terracon Project Number A4077007

Dear Mr. Henry:

Terracon is pleased to submit four copies of the 2009 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.
Senior Associate

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Terracon

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NE ¼ of the SW ¼ of Section 3, T21S, R37E
Plains SRS Number 2001-11226
Lea County, New Mexico
NMOCD File Number IR – 0395
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1.0 INTRODUCTION

1.1 Site Description

Site Name	Livingston Line – Bob McCasland
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 abandoned Carbon Black Plant.

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

On July 13, 2001, a reported four barrels of crude oil were released from the Livingston four-inch steel pipeline. The release covered an area of approximately 1,600 square feet of pipeline right-of-way and caliche road.

Initial investigative activities were conducted from August 16, 2001 through August 22, 2001, and included advancing 17 soil borings. It was determined during this time that groundwater, situated approximately 30 feet below ground surface (bgs), had been impacted. Three groundwater monitor wells (MW-1, MW-2 and MW-3) were installed around the release area to evaluate the extent and magnitude of the release. Samples collected from the groundwater monitor wells indicated groundwater concentrations for benzene, toluene, ethylbenzene, and total xylenes (BTEX) were above New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards. Three additional groundwater monitor wells (MW-4, MW-5 and MW-6) were installed at the site. Phase separated hydrocarbon (PSH) was detected in groundwater monitor well MW-4 following its installation.

In December 2001, approximately 11,445 cubic yards of hydrocarbon impacted soil were excavated and stockpiled on-site. Earthen berms were constructed around the stockpiles to prevent runoff. Analytical results for soil samples collected from the excavation indicated BTEX concentrations above New Mexico Oil Conservation Division (NMOCD) remedial threshold limits.

To delineate the lateral extent of groundwater impact at the site, three additional groundwater monitor wells (MW-7, MW-8 and MW-9) were installed in June 2004. Two additional monitor wells (MW-10 and MW-11) were installed in November of 2004. During installation of these five groundwater monitor wells in June and December 2004, soil samples were collected and submitted to AnalySys, Inc., an analytical laboratory in Austin, Texas for analysis of total petroleum hydrocarbons (TPH) (gasoline and diesel range organics) and BTEX constituents. BTEX constituents for each of soil samples from the monitor wells were below NMOCD remedial threshold limits. TPH concentrations from soil samples collected from groundwater monitor wells MW-7, MW-10 and MW-11 were at or below laboratory analytical method detection limits (MDLs).

1.2 Scope of Work

Terracon's scope of work included assuming oversight of remedial activities on February 1, 2007. Oversight activities included the preparation of 2006, 2007 and 2008 annual groundwater monitoring and soil closure status reports for submittal to the NMOCD. Four quarterly groundwater monitoring and sampling events were conducted during 2009 by Terracon. The events were performed on February 9, 2009, May 14, 2009, August 12, 2009, and November 10 and 11, 2009 at the Livingston Line - Bob McCasland site located in Lea County, New Mexico.

The objective of the quarterly sampling events was to gauge the eleven groundwater monitor wells (MW-1 through MW-11) and to collect samples of groundwater from each well for analysis of BTEX (quarterly) and TPH and polycyclic aromatic hydrocarbons (PAHs), (annually). TPH and PAH groundwater samples were collected on February 9, 2009.

At the direction of the NMOCD, Plains began conducting annual sampling of all monitor wells, even wells containing phase separated hydrocarbons (PSH), for TPH, BTEX and PAHs annually 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. A previous consultant hired by Plains performed site activities prior to Terracon assuming over site on this project. Terracon makes no assumptions or warranties regarding 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 9, 2009, May 14, 2009, August 12, 2009, and November 10 and 11, 2009, 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 structures and general site boundaries (Appendix A).

During each sampling event, monitor wells were gauged to determine the depth to groundwater and to check for the presence of crude oil or PSH. Based on the gauging data, PSH was present at a thicknesses ranging from non-detect to 0.06 feet in monitor well MW-4 during 2009. Previously, PSH was present as a sheen in monitor well MW-4. No additional monitor wells at the site contained measurable PSH during 2009. Groundwater monitor well MW-1 was dry in November 2007 and has remained dry throughout 2008 and 2009. As such, a water sample was not obtained from this well during 2009. 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 ten of the eleven groundwater monitor wells in accordance with the NMOCD. Prior to sample collection, each of these monitor wells was micro-purged until consistent values (i.e., less than 10% variance between consecutive readings) were obtained for pH, temperature and conductivity. Following purging, a groundwater sample was collected directly from polyethylene tubing attached to the downhole pump.

Groundwater samples were placed in laboratory-supplied containers appropriate to the analyses requested and placed on ice in a cooler. The sample coolers and completed chain-of-custody forms were delivered to Xenco Laboratories Company, in Odessa, Texas for standard turnaround for analysis of 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 2009.

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 2009 indicated the groundwater gradient was generally consistent with previous sampling events. Previous gauging data at the site indicated that the groundwater gradient had been predominately to the south-southeast. Groundwater gradients during 2009 sampling and gauging events are summarized below:

- The gradient/direction during the February 2009 sampling event was 0.002 ft/ft and toward the east;
- The gradient/direction during the May 2009 sampling event was 0.0004 ft/ft and toward the southeast;
- The gradient/direction during the August 2009 sampling event was 0.002 ft/ft and toward the southeast; and
- The gradient/direction during the November 2009 sampling event was 0.003 ft/ft and toward the southeast.

Groundwater flow direction was relatively inconsistent during 2009 as compared to previous years; trending east in the first quarter and southeast in the second, third and fourth quarters. Water level measurement data is summarized in Table 1 in Appendix B.

Monitor well MW-1 has been dry, containing no fluids, since November 2007. During 2009, groundwater elevations increased by an average of approximately one foot in site monitor wells.

3.2 Groundwater Analysis Data

Laboratory results from the analysis of groundwater samples collected from monitor wells MW-1 through MW-11 are summarized in Table 2 and Table 3 in Appendix B and presented on Figure 7 through Figure 10 in Appendix A. The executed chain-of-custody forms and laboratory data sheets are provided in Appendix C.

1st Quarter 2009

Groundwater samples were collected and analyzed for TPH, PAHs and BTEX constituents during the first quarter on February 9, 2009. The first quarter results are summarized below:

- Groundwater was not collected from monitor well MW-1 in February 2009, as the well was dry and contained no fluids;
- TPH was not detected in the groundwater samples collected from monitor wells MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-10 and MW-11 at concentrations exceeding the laboratory reporting limit;
- TPH was detected in groundwater samples collected from monitor wells MW-2 (at 7.82 mg/l) and MW-9 (at 1.57 mg/l); however, the New Mexico Water Quality Control Commission (NMWQCC) has not established a groundwater standard for TPH;
- Benzene was not detected in the groundwater samples collected from monitor wells MW-3, MW-6 MW-7, MW-8, MW-10 and MW-11 at concentrations which exceeded their respective laboratory reporting limit and/or NMWQCC groundwater standards;
- The groundwater samples collected from monitor wells MW-2 (at 0.0918 mg/l), MW-4 (at 0.7677 mg/l), MW-5 (at 0.093 mg/l) and MW-9 (at 0.0509 mg/l), contained concentrations of benzene which exceeded the NMWQCC groundwater standard of 0.01 mg/l;
- Toluene, ethylbenzene and total xylenes were not detected in any of the groundwater samples collected from monitor wells at the site at concentrations above their respective laboratory reporting limits and/or NMWQCC groundwater standards;
- PAH constituents were not detected in the groundwater samples collected from monitor wells MW-2 through MW-11, at concentrations exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standards; and,
- Measurable PSH was not detected in any of the monitor wells during the first quarter of 2009.

2nd Quarter

Groundwater samples were collected and analyzed for BTEX and PAH constituents during the second quarter on May 14, 2009. The second quarter results are summarized below:

- A groundwater sample was not collected from monitor well MW-1, as it was dry;
- Measurable PSH was not detected in the monitor wells during the second quarter of 2009;
- Benzene was not detected at concentrations exceeding the respective laboratory reporting limit and/or NMWQCC groundwater standard in the groundwater samples collected from monitor wells MW-6, MW-7, MW-10 and MW-11;
- Benzene was detected in the groundwater samples collected monitor wells MW-2 (at 0.7167 mg/l), MW-4 (at 0.492 mg/l), MW-5 (at 0.1093 mg/l), MW-8 (at 0.0121 mg/l), and MW-9 (at 0.0336 mg/l); exceeding the NMWQCC groundwater standard of 0.01 mg/l for benzene; and,
- Toluene, ethylbenzene and total xylenes were not detected in any of the groundwater samples collected at the site above their respective laboratory reporting limits and/or NMWQCC groundwater standards.

3rd Quarter

Groundwater samples were collected and analyzed for BTEX constituents during the third quarter on August 14, 2009. The third quarter results are summarized below:

- A groundwater sample was not collected from monitor well MW-1, as it was dry;
- Benzene was not detected at concentrations exceeding the respective laboratory reporting limit and/or NMWQCC groundwater standard in the groundwater samples collected from monitor wells MW-3, MW-6, MW-7, MW-10 and MW-11;
- Benzene was detected in the groundwater samples collected from monitor wells MW-4 (at 1.357 mg/l), MW-5 (at 0.057 mg/l), MW-8 (at 0.0138 mg/l), and MW-9 (at 0.0452 mg/l), exceeding the NMWQCC groundwater standard of 0.01 mg/l for benzene; and,
- Toluene, ethylbenzene and total xylenes were not detected in the groundwater samples collected from the site monitor wells at concentrations above laboratory reporting limits and/or their respective NMWQCC groundwater standards.

4th Quarter

Groundwater samples were collected and analyzed for BTEX constituents during the fourth quarter on November 11, 2009. The fourth quarter results are summarized below:

- A groundwater sample was not collected from monitor well MW-1, as it contained no fluids during the fourth quarter sampling event;
- Based on the presence of 0.02 feet of PSH in monitor well MW-4 during the fourth quarter sampling event, a groundwater sample was not collected from this well;
- The groundwater samples collected from monitor wells MW-3, MW-6, MW-7, MW-8, MW-10, and MW-11 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 monitor wells MW-2 (at 0.0476 mg/l), MW-5 (at 0.1185 mg/l) and MW-9 (at 0.0363 mg/l), exceeding the NMWQCC groundwater standard of 0.01 mg/l for benzene; and,
- Toluene, ethylbenzene and total xylenes were not detected in any of the groundwater samples collected from the monitor wells at concentrations above their respective laboratory reporting limits and/or NMWQCC groundwater standards.

3.3 Historical Data Comparisons

Monitor wells MW-1, MW-3, MW-7 and MW-11 have historically not contained BTEX or TPH at concentrations exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standards. Monitor well MW-1 has been dry since December 2007. Monitor well MW-1 was reportedly drilled to 40 feet bgs and it measures dry at approximately 32 feet bgs likely due to silting of sediments through the well screen. Minor thicknesses or a sheen of PSH have been detected in monitor well MW-4 since it was installed in January 2002. PSH has been detected periodically in monitor well MW-8; however, PSH has not been detected in monitor well MW-8 during 2009. With a few exceptions, groundwater samples from monitor wells MW-2, MW-4, MW-5, MW-6, MW-8, MW-9, and MW-10 have historically contained benzene at concentrations exceeding the NMWQCC groundwater standards. However, monitor well MW-10 has not contained benzene at concentrations exceeding the laboratory reporting limit and/or the NMWQCC groundwater standards in 2009.

With the exception of periodic concentrations of naphthalene detected in monitor wells MW-4 and MW-5, TPH and PAHs have not been detected at concentrations exceeding the laboratory reporting limits and/or NMWQCC groundwater standards since the monitor wells were installed. During 2009, none of the groundwater samples contained PAH constituents at concentrations exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standards.

Terracon has been purging large volumes of groundwater from monitor wells MW-2, MW-4, MW-5, MW-8 and MW-9 during 2009 in an attempt to enhance remediation of the plume at the site.

4.0 FINDINGS AND RECOMMENDATIONS

4.1 Findings

The annual groundwater report presents the results of four groundwater monitoring and sampling events for the 2009 calendar year.

- Monitor well MW-1 contained no fluids during the 2009 sampling events;
- Measurable PSH has not been detected in the monitor wells at the site, with the exception of monitor well MW-4. PSH was measured at thicknesses ranging from 0.01 feet to 0.06 feet in 2009;
- With a few exceptions, groundwater samples collected from monitor wells MW-1, MW-3, MW-7 and MW-11 have not contained TPH or BTEX constituents above their respective laboratory reporting limits and/or NMWQCC groundwater standards since the monitor wells were installed in 2001 (MW-1 and MW-3) and 2004 (MW-7 and MW-11);
- Groundwater samples collected from monitor wells MW-2, MW-4, MW-5, MW-8 and MW-9 contained benzene at concentrations exceeding the NMWQCC groundwater standard during at least two of the four quarters they were sampled in 2009;
- The groundwater samples collected from monitor well MW-10 did not contain benzene at concentrations exceeding the respective laboratory reporting limit and/or NNMQCC groundwater standard during any of the four quarters of 2009. Historically, MW-10 has contained benzene at concentrations exceeding the NMWQCC groundwater standard;
- Groundwater samples collected in 2009 did not contain toluene, ethylbenzene and total xylenes at concentrations above their respective laboratory reporting limits and/or the NMWQCC groundwater standards;
- TPH was detected in two of the groundwater samples collected in February 2009 above laboratory reporting limit; however, the NMWQCC does not have an established groundwater standard for TPH;
- PAH constituents were not detected in any of the groundwater samples collected in February 2009 at concentrations exceeding their respective laboratory reporting limits and/or the NMWQCC groundwater standards;

- 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; and,

- The NMOCD recommended that a monitor well be installed down-gradient from the release site; however, landowner constraints have delayed any additional activities at the site, with the exception of sampling and gauging the existing monitor wells. However, it should be noted that monitor well MW-11 is slightly down-gradient and monitor well MW-6 is cross-gradient and that both exhibited benzene concentrations below the NMWQCC groundwater standards during 2009.

4.2 Recommendations

A Soil Characterization Report and Remediation Plan report dated June 2006, by Environmental Plus, Inc. (EPI) was submitted to the NMOCD. This report detailed remediation activities conducted at the site and recommendations for in-situ hydrocarbon-impacted soil closure. Based upon the results of this report, EPI's report and correspondence from the NMOCD, Terracon recommends the following:

- Excavate the south-southwest sidewall of the excavation pit and level the excavation floor;

- Collect confirmation soil samples from the sidewalls and floor of the excavated area and analyze for BTEX and TPH;

- Install a 20-mil thick polyethylene liner from the location of former soil boring SB-15 (located approximately 120 feet from the southern most edge of the excavation) to the northern most edge of the excavation along the excavation floor. Cushion the liner with six inches of sand above and below the liner;

- Sample stockpiled material excavated from the release area for BTEX and TPH. If the stockpiled material are less than 1,000 mg/kg TPH and non-detect for BTEX, use the stockpile material to backfill the excavation;

- If the stockpiled materials are impacted above the site-specific risk-based remedial guidelines, blend and mix the stockpiled soils with native soils and/or caliche at the site to concentrations below the site-specific risk-based levels and backfill the excavation to surface grade then grade the release site area to allow natural drainage;

- After grading operations, seed the area with a grass blend approved by the landowner;

- Continue PSH recovery efforts on monitor wells (as necessary) on a bi-weekly schedule;
- Continue quarterly groundwater sampling for BTEX on all monitor wells for the calendar year of 2010 in accordance with the NMOCD approved sample reduction plan;
- Based on the results of the past six years of analysis of the groundwater samples for TPH and PAH concentrations which illustrate TPH and PAH concentrations are below NMWQCC standards, discontinue the annual sampling for TPH and PAHs in all monitor wells at the site; and,
- Submit an annual report to the NMOCD detailing the 2009 site activities.

DISTRIBUTION

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APPENDIX A

Figure 1 – Topographic Map
Figure 2 – Site Plan
Figure 3 – Groundwater Gradient Map (02/09/09)
Figure 4 – Groundwater Gradient Map (05/14/09)
Figure 5 – Groundwater Gradient Map (08/12/09)
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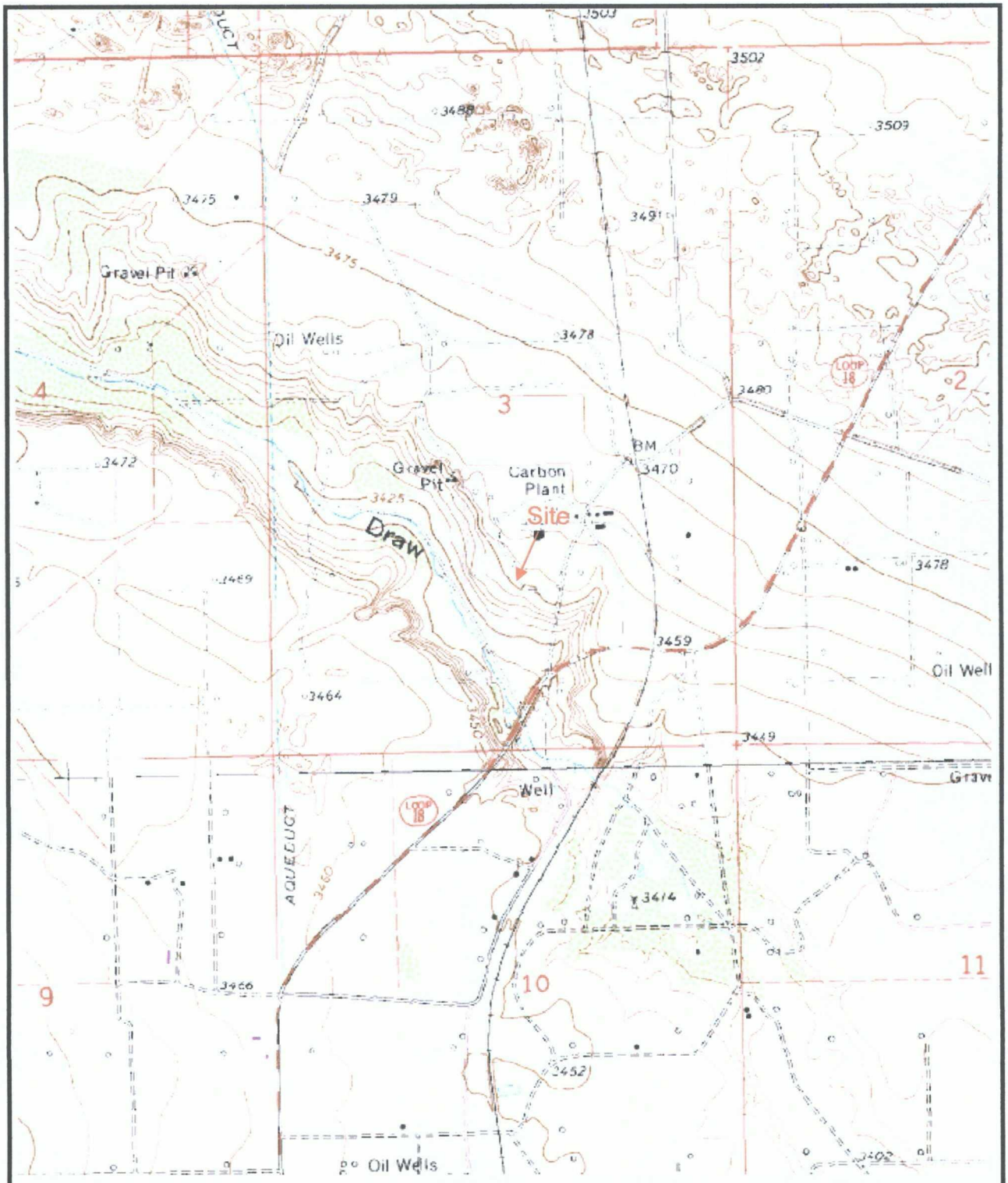
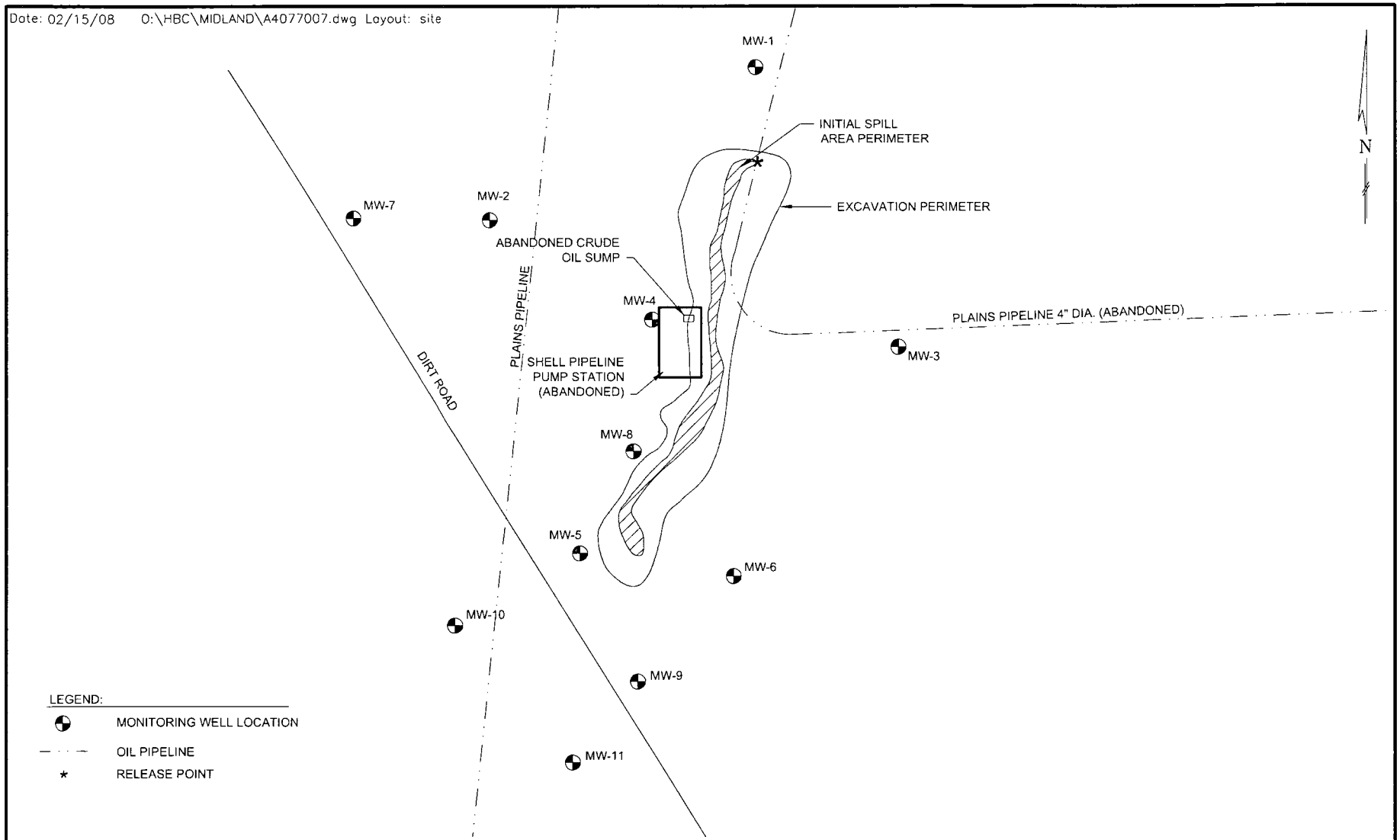
Figure 9 – Groundwater Contaminant Concentration Map (08/12/09)
Figure 10 – Groundwater Contaminant Concentration Map (11/11/09)



USGS TOPOGRAPHIC QUADRANGLE MAP Hobbs SW, NM			**Livingston Line - Bob McCasland** NE 1/4 of SW1/4, Sec. 3, T21S, R37E NMOCD File Number: 1R-0395 Eunice, Lea County, New Mexico
Dated: 1979 SCALE: 1" = 1,600'	N	Terracon	
PROJECT NO. A4077007			**FIGURE 1: TOPOGRAPHIC MAP**



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APPROXIMATE SCALE

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FIGURE 2: SITE DIAGRAM

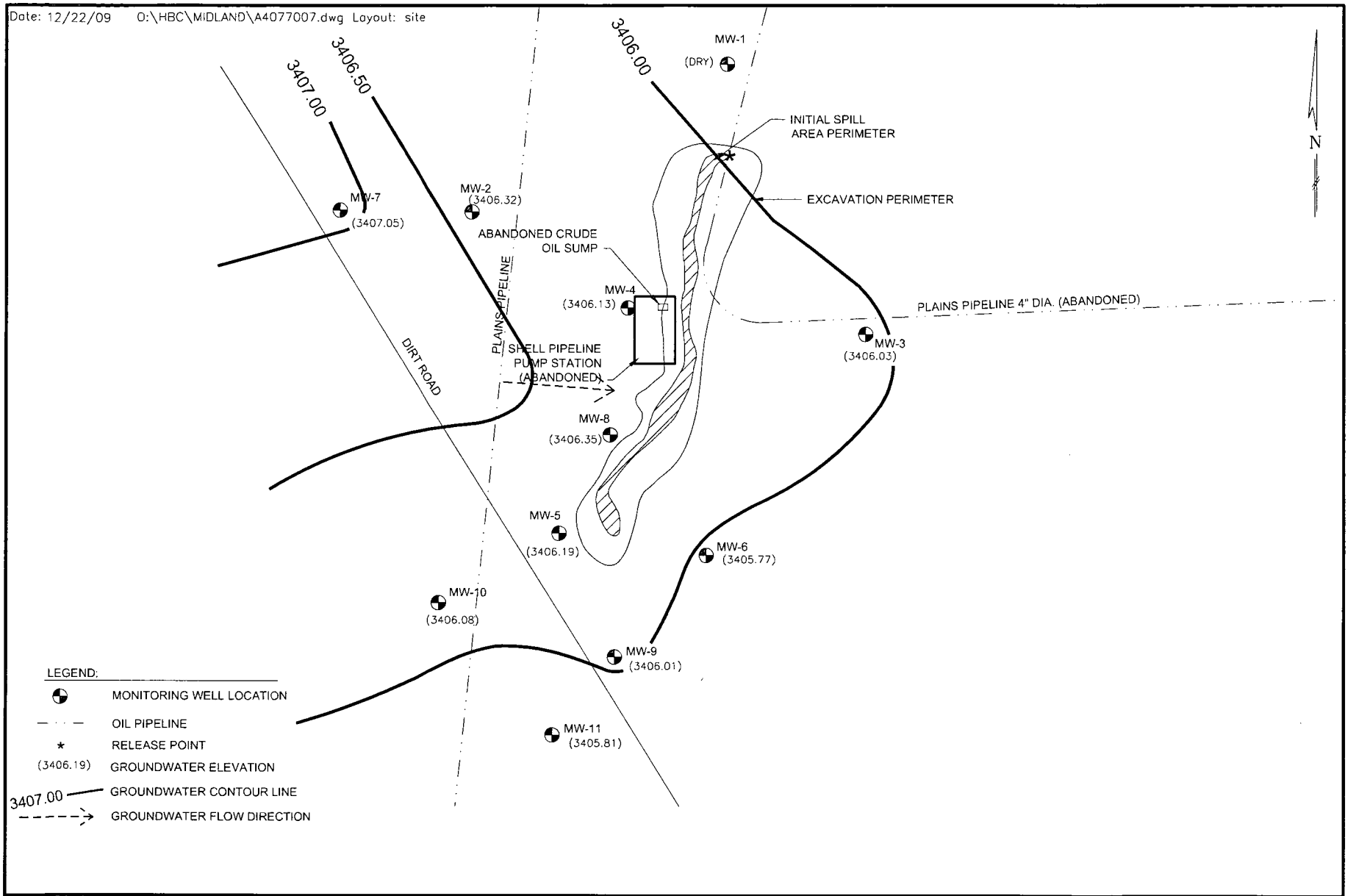

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FIGURE 3: GROUNDWATER GRADIENT MAP (02/09/09)

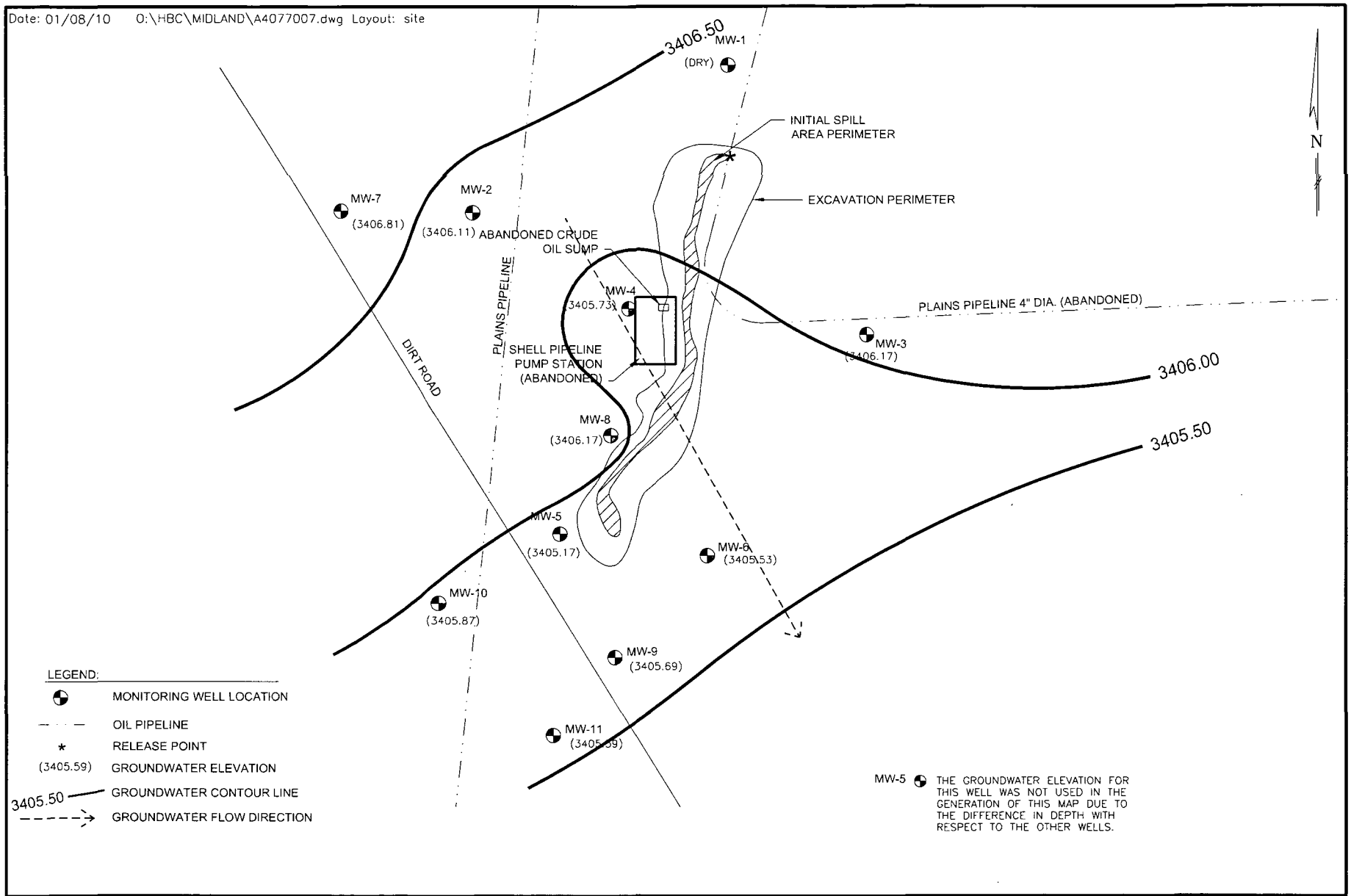

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FIGURE 4: GROUNDWATER GRADIENT MAP (05/14/09)

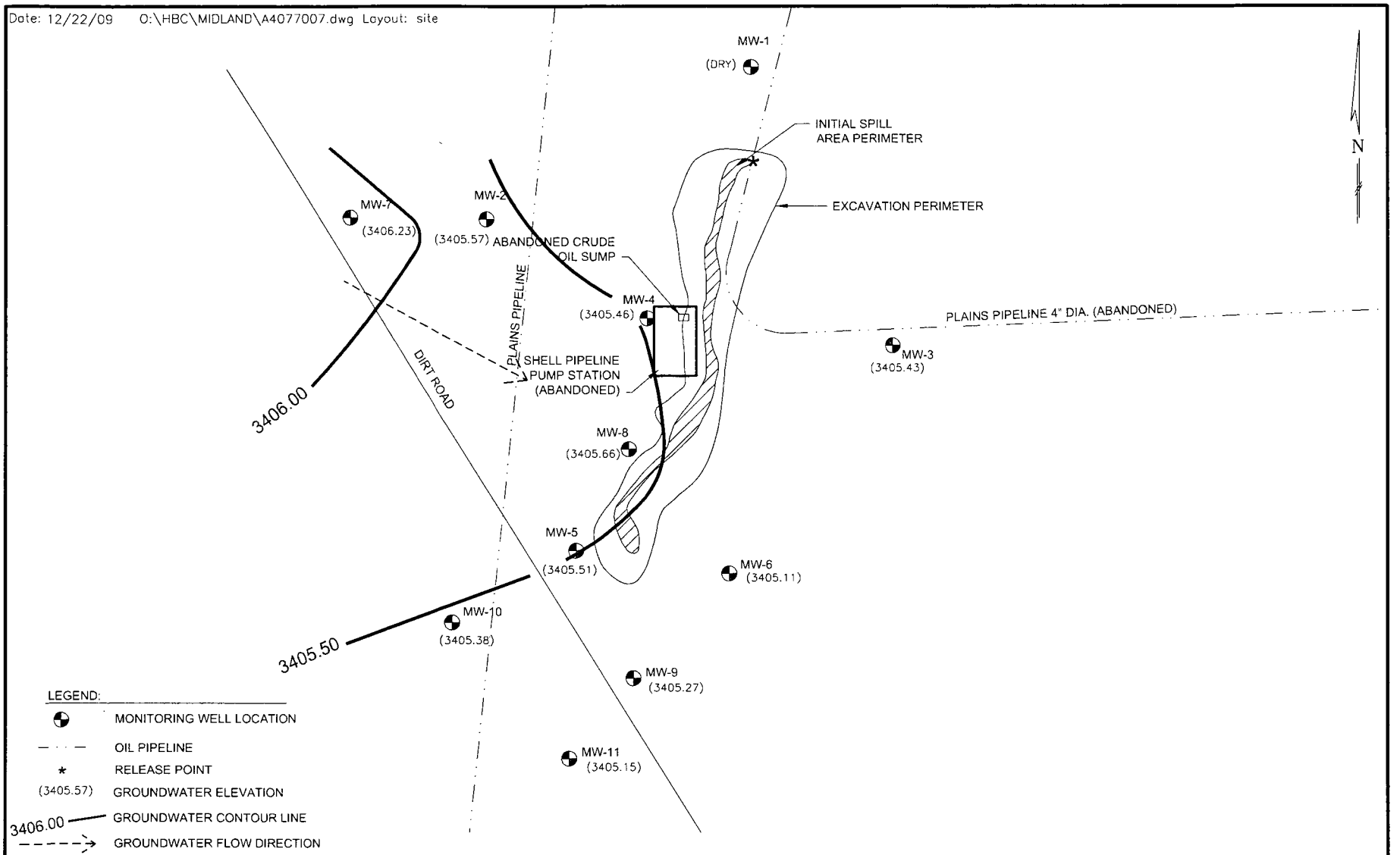

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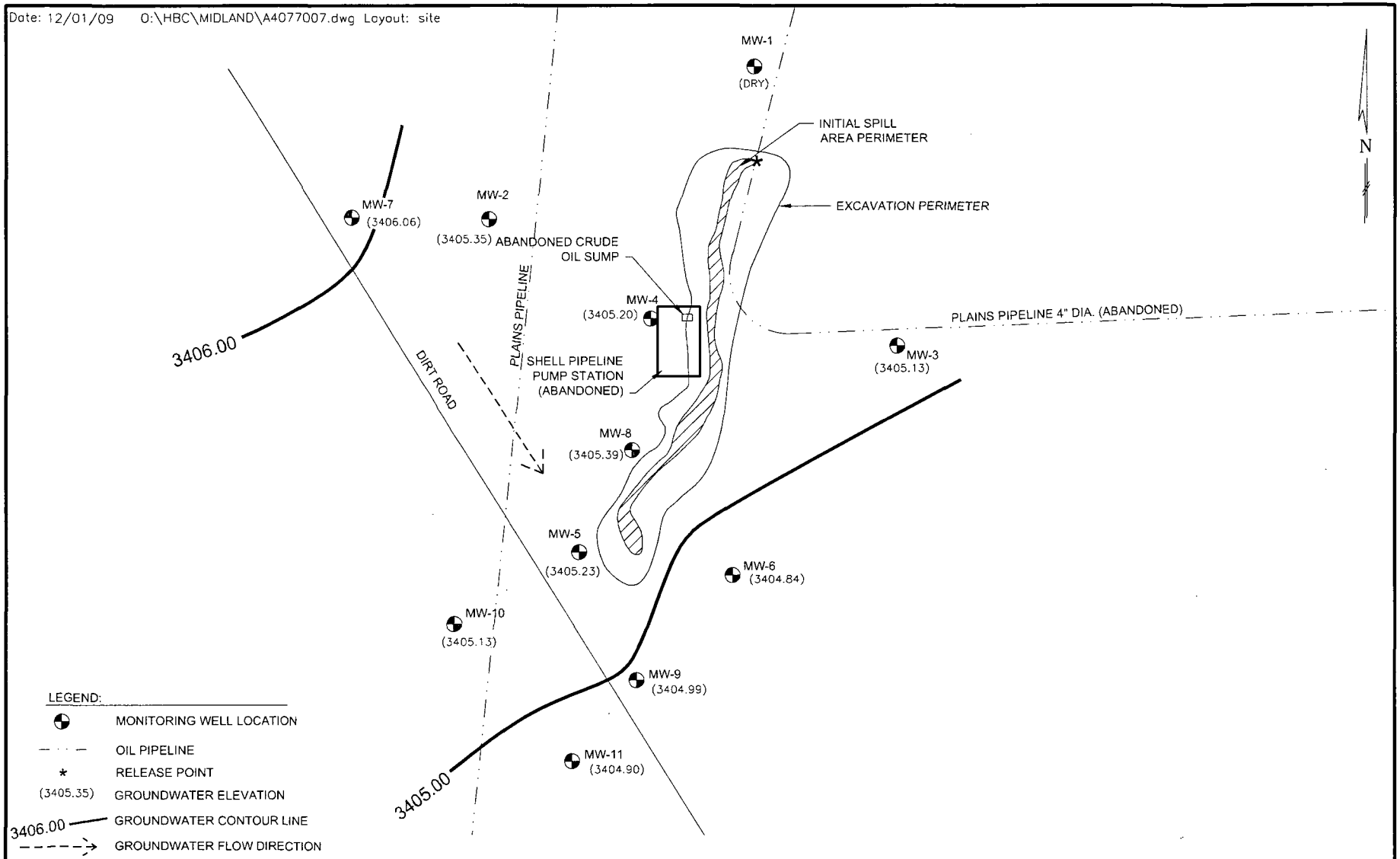
FIGURE 5: GROUNDWATER GRADIENT MAP (08/12/09)



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SRS#2001-11226, NMOCD File# 1R-0395

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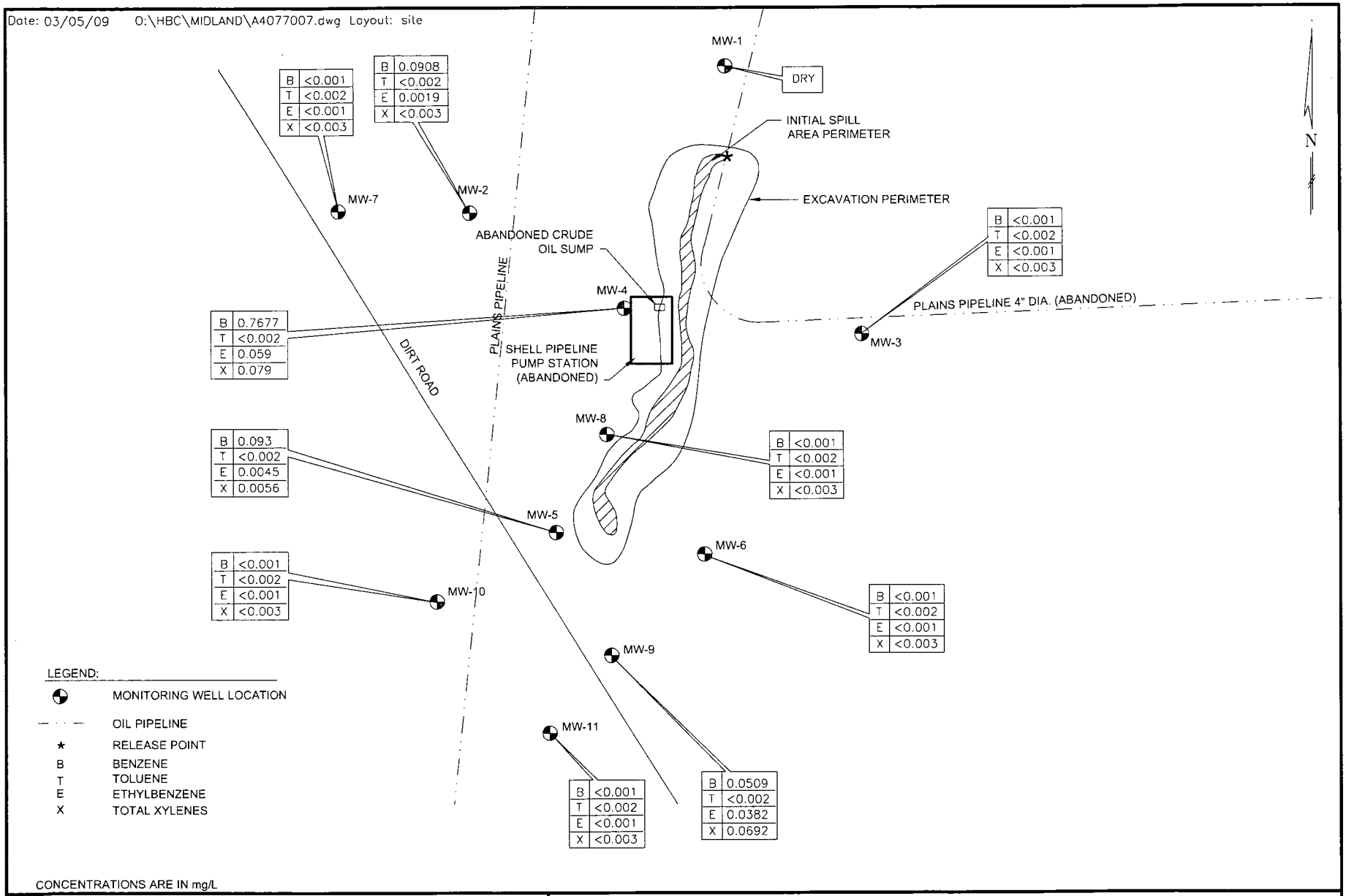
FIGURE 6: GROUNDWATER GRADIENT MAP (11/10/09)



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SRS#2001-11226, NMOCD File# 1R-0395

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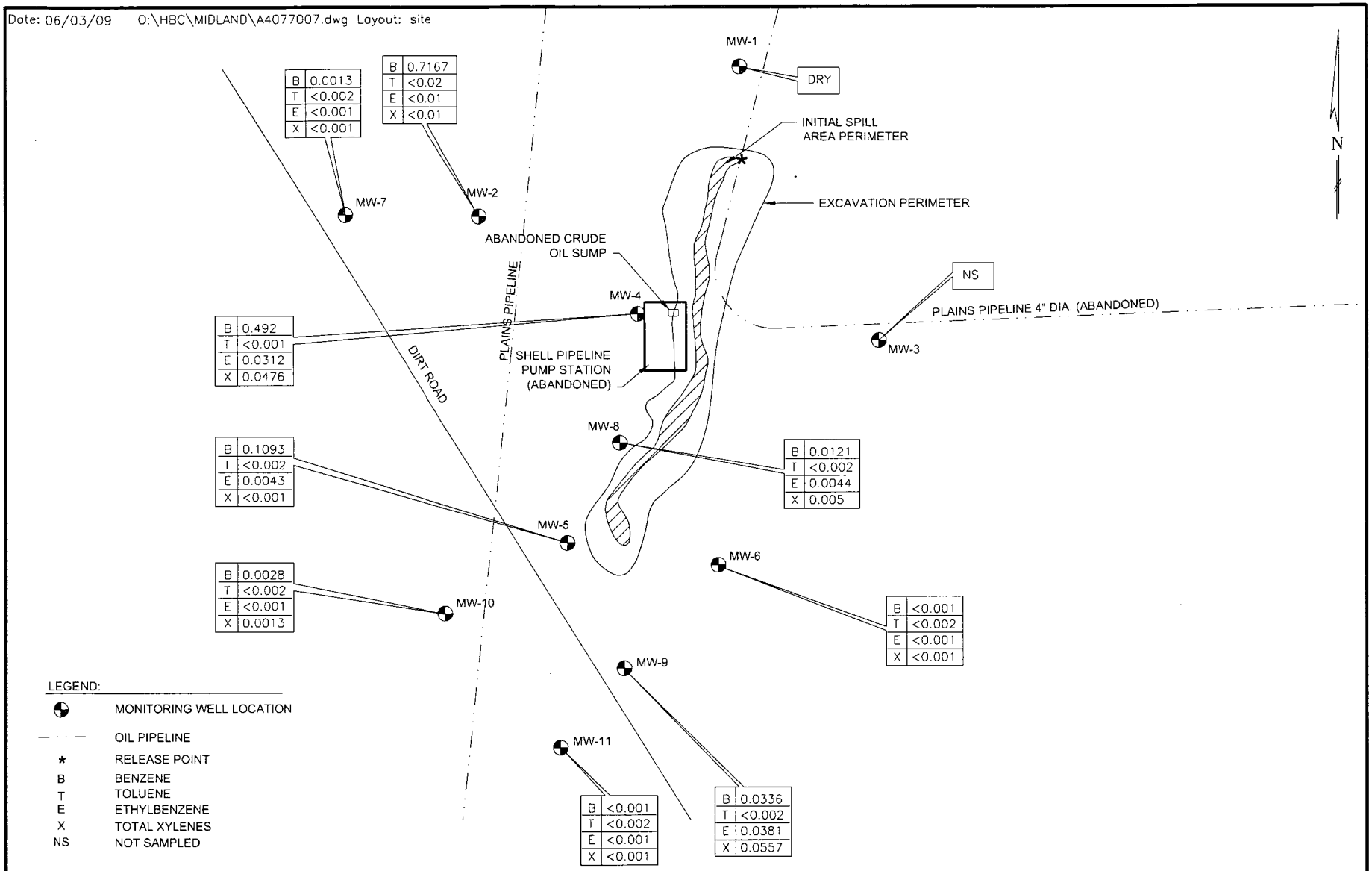
FIGURE 7: GROUNDWATER CONTAMINANT CONCENTRATION MAP (02/09/09)



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SRS#2001-11226, NMOCD File# 1R-0395

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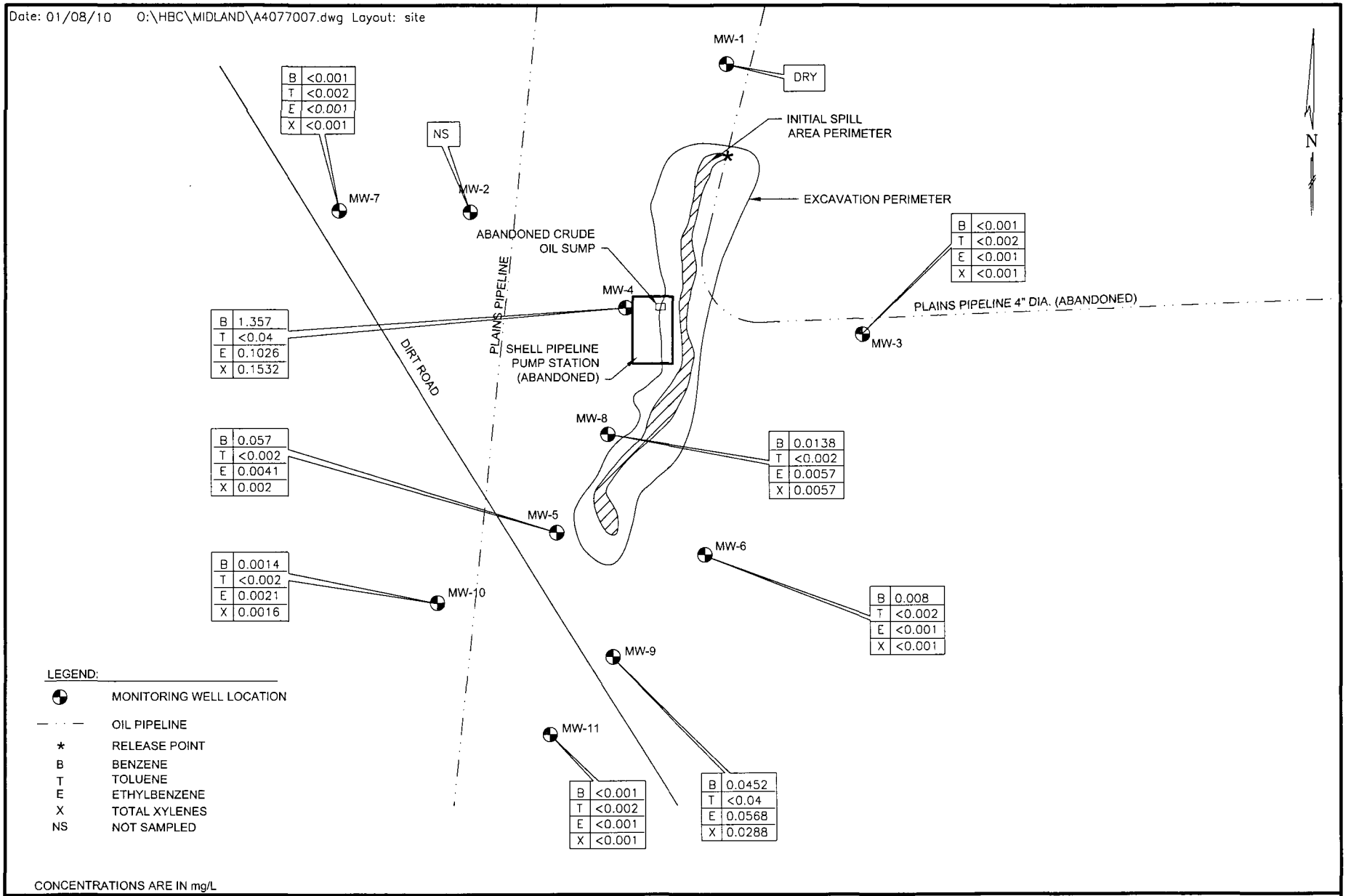
FIGURE 8: GROUNDWATER CONTAMINANT CONCENTRATION MAP (05/14/09)



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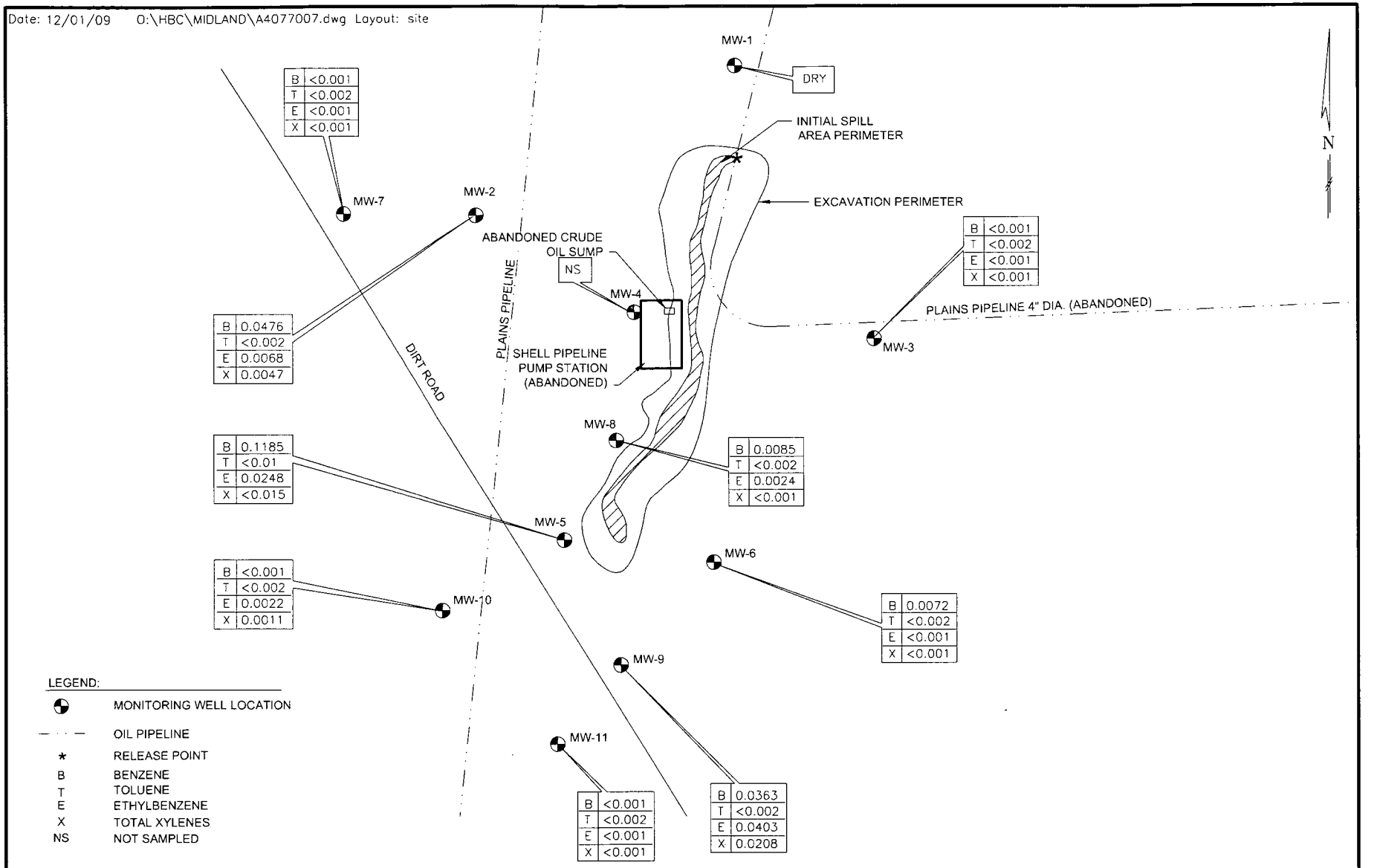
SRS#2001-11226, NMOCD File# 1R-0395

Terracon **Project No.: A4077007**

FIGURE 9: GROUNDWATER CONTAMINANT CONCENTRATION MAP (08/12/09)



THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 50 100 FEET
APPROXIMATE SCALE

PLAINS PIPELINE, L.P.
LIVINGSTON LINE-BOB MCCASLAND
LEA COUNTY, NEW MEXICO
SRS#2001-11226, NMOCD File# 1R-0395

Terracon **Project No.: A4077007**

FIGURE 10: GROUNDWATER CONTAMINANT CONCENTRATION MAP (11/11/09)

APPENDIX B

Tables

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-1	07/10/02	3,439.09	0.00	38.10	3,400.99	0.00	0.00	0.00
MW-1	04/15/03		0.00	37.31	3,401.78	0.00	0.00	0.00
MW-1	07/14/03		0.00	38.13	3,400.96	0.00	0.00	0.00
MW-1	04/20/04		0.00	35.62	3,403.47	0.00	0.00	0.00
MW-1	05/07/04		0.00	35.55	3,403.54	0.00	0.00	0.00
MW-1	05/25/04		0.00	35.62	3,403.47	0.00	0.00	0.00
MW-1	06/10/04		0.00	35.77	3,403.32	0.00	0.00	0.00
MW-1	07/14/04		0.00	34.90	3,404.19	0.00	0.00	0.00
MW-1	07/21/04		0.00	34.69	3,404.40	0.00	0.00	0.00
MW-1	08/02/04		0.00	34.73	3,404.36	0.00	0.00	0.00
MW-1	09/10/04		0.00	34.24	3,404.85	0.00	0.00	0.00
MW-1	09/14/04		0.00	34.26	3,404.83	0.00	0.00	0.00
MW-1	10/05/04		0.00	32.64	3,406.45	0.00	0.00	0.00
MW-1	10/19/04		0.00	30.92	3,408.17	0.00	0.00	0.00
MW-1	11/02/04		0.00	31.01	3,408.08	0.00	0.00	0.00
MW-1	11/15/04		0.00	30.41	3,408.68	0.00	0.00	0.00
MW-1	12/06/04		0.00	30.30	3,408.79	0.00	0.00	0.00
MW-1	12/21/04		0.00	30.29	3,408.80	0.00	0.00	0.00
MW-1	01/03/05		0.00	30.45	3,408.64	0.00	0.00	0.00
MW-1	01/18/05		0.00	30.57	3,408.52	0.00	0.00	0.00
MW-1	02/01/05		0.00	30.65	3,408.44	0.00	0.00	0.00
MW-1	03/21/05		0.00	30.81	3,408.28	0.00	0.00	0.00
MW-1	04/21/05		0.00	31.03	3,408.06	0.00	0.00	0.00
MW-1	05/05/05		0.00	31.04	3,408.05	0.00	0.00	0.00
MW-1	05/17/05		0.00	31.11	3,407.98	0.00	0.00	0.00
MW-1	08/15/05		0.00	31.50	3,407.59	0.00	0.00	0.00
MW-1	10/05/05		0.00	31.24	3,407.85	0.00	0.00	0.00
MW-1	11/18/05		0.00	31.44	3,407.65	0.00	0.00	0.00
MW-1	01/12/06		0.00	31.56	3,407.53	0.00	0.00	0.00
MW-1	02/16/06		0.00	31.68	3,407.41	0.00	0.00	0.00
MW-1	03/16/06		0.00	31.88	3,407.21	0.00	0.00	0.00
MW-1	04/10/06		0.00	31.83	3,407.26	0.00	0.00	0.00
MW-1	05/22/06		0.00	31.97	3,407.12	0.00	0.00	0.00
MW-1	07/20/06		0.00	32.44	3,406.65	0.00	0.00	0.00
MW-1	08/07/06		0.00	32.55	3,406.54	0.00	0.00	0.00
MW-1	09/11/06		0.00	31.87	3,407.22	0.00	0.00	0.00
MW-1	10/17/06		0.00	31.81	3,407.28	0.00	0.00	0.00
MW-1	11/21/06		0.00	31.91	3,407.18	0.00	0.00	0.00
MW-1	12/13/06		0.00	31.93	3,407.16	0.00	0.00	0.00
MW-1	01/09/07		0.00	32.07	3,407.02	0.00	0.00	0.00
MW-1	02/14/07		0.00	31.99	3,407.10	0.00	0.00	0.00
MW-1	02/22/07		0.00	32.01	3,407.08	0.00	0.00	0.00
MW-1	03/01/07		0.00	31.99	3,407.10	0.00	0.00	0.00
MW-1	03/13/07		0.00	32.03	3,407.06	0.00	0.00	0.00
MW-1	05/10/07		0.00	31.71	3,407.38	0.00	0.10	6.00
MW-1	08/10/07		0.00	31.82	3,407.27	0.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-1	08/20/07		0.00	31.94	3,407.15	0.00	0.00	0.00
MW-1	11/15/07		DRY	DRY	DRY	DRY	DRY	DRY
MW-1	02/28/08		DRY	DRY	DRY	DRY	DRY	DRY
MW-1	05/28/08		DRY	DRY	DRY	DRY	DRY	DRY
MW-1	05/30/08		DRY	DRY	DRY	DRY	DRY	DRY
MW-1	08/20/08		DRY	DRY	DRY	DRY	DRY	DRY
MW-1	11/07/08		DRY	DRY	DRY	DRY	DRY	DRY
MW-1	02/09/09		DRY	DRY	DRY	DRY	DRY	DRY
MW-1	05/14/09		DRY	DRY	DRY	DRY	DRY	DRY
MW-1	08/12/09		DRY	DRY	DRY	DRY	DRY	DRY
MW-1	11/10/09		DRY	DRY	DRY	DRY	DRY	DRY
MW-2	07/10/02	3,432.62	0.00	31.31	3,401.31	0.00	0.00	0.00
MW-2	04/15/03		0.00	30.68	3,401.94	0.00	0.00	0.00
MW-2	07/14/03		0.00	31.70	3,400.92	0.00	0.00	0.00
MW-2	04/20/04		0.00	28.20	3,404.42	0.00	0.00	0.00
MW-2	05/07/04		0.00	28.44	3,404.18	0.00	0.00	0.00
MW-2	05/25/04		0.00	28.72	3,403.90	0.00	0.00	0.00
MW-2	06/10/04		0.00	29.14	3,403.48	0.00	0.00	0.00
MW-2	07/14/04		0.00	27.73	3,404.89	0.00	0.00	0.00
MW-2	07/21/04		0.00	27.71	3,404.91	0.00	0.00	0.00
MW-2	08/02/04		0.00	27.96	3,404.66	0.00	0.00	0.00
MW-2	09/10/04		0.00	27.52	3,405.10	0.00	0.00	0.00
MW-2	09/14/04		0.00	27.51	3,405.11	0.00	0.00	0.00
MW-2	10/05/04		0.00	24.25	3,408.37	0.00	0.00	0.00
MW-2	10/19/04		0.00	23.12	3,409.50	0.00	0.00	0.00
MW-2	11/02/04		0.00	23.22	3,409.40	0.00	0.00	0.00
MW-2	11/15/04		0.00	23.50	3,409.12	0.00	0.00	0.00
MW-2	12/06/04		0.00	23.63	3,408.99	0.00	0.00	0.00
MW-2	12/21/04		0.00	23.63	3,408.99	0.00	0.00	0.00
MW-2	01/03/05		0.00	23.91	3,408.71	0.00	0.00	0.00
MW-2	01/18/05		0.00	24.05	3,408.57	0.00	0.00	0.00
MW-2	02/01/05		0.00	24.17	3,408.45	0.00	0.00	0.00
MW-2	03/21/05		0.00	24.44	3,408.18	0.00	0.00	0.00
MW-2	04/21/05		0.00	24.67	3,407.95	0.00	0.00	0.00
MW-2	05/05/05		0.00	24.63	3,407.99	0.00	0.00	0.00
MW-2	05/17/05		0.00	24.78	3,407.84	0.00	0.00	0.00
MW-2	08/15/05		0.00	25.18	3,407.44	0.00	0.00	0.00
MW-2	10/05/05		0.00	24.93	3,407.69	0.00	0.00	0.00
MW-2	11/18/05		0.00	25.07	3,407.55	0.00	0.00	0.00
MW-2	01/12/06		0.00	25.18	3,407.44	0.00	0.00	0.00
MW-2	02/16/06		0.00	25.36	3,407.26	0.00	0.00	0.00
MW-2	03/16/06		0.00	25.57	3,407.05	0.00	0.00	0.00
MW-2	04/10/06		0.00	25.48	3,407.14	0.00	0.00	0.00
MW-2	05/22/06		0.00	25.63	3,406.99	0.00	0.00	0.00
MW-2	07/20/06		0.00	26.15	3,406.47	0.00	0.00	0.00
MW-2	08/07/06		0.00	26.28	3,406.34	0.00	0.00	0.00
MW-2	09/11/06		0.00	25.30	3,407.32	0.00	0.00	0.00
MW-2	10/17/06		0.00	25.39	3,407.23	0.00	0.00	0.00
MW-2	11/21/06		0.00	25.46	3,407.16	0.00	0.00	0.00
MW-2	12/13/06		0.00	25.48	3,407.14	0.00	0.00	0.00
MW-2	01/09/07		0.00	25.61	3,407.01	0.00	0.00	0.00
MW-2	02/14/07		0.00	25.52	3,407.10	0.00	0.00	0.00
MW-2	02/22/07		0.00	25.54	3,407.08	0.00	0.00	0.00
MW-2	03/01/07		0.00	25.47	3,407.15	0.00	0.00	0.00
MW-2	03/13/07		0.00	25.53	3,407.09	0.00	0.00	0.00
MW-2	05/10/07		0.00	25.12	3,407.50	0.00	0.00	0.00
MW-2	08/10/07		0.00	25.41	3,407.21	0.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-2	08/20/07		0.00	25.57	3,407.05	0.00	0.00	0.00
MW-2	11/15/07		0.00	25.73	3,406.89	0.00	0.00	0.00
MW-2	02/28/08		0.00	25.69	3,406.93	0.00	0.00	0.00
MW-2	04/30/08		0.00	25.73	3,406.89	0.00	0.00	0.00
MW-2	05/28/08		0.00	26.04	3,406.58	0.00	0.00	0.00
MW-2	05/30/08		0.00	25.73	3,406.89	0.00	0.00	0.00
MW-2	07/07/08		0.00	26.45	3,406.17	0.00	0.00	10.00
MW-2	07/14/08		0.00	26.45	3,406.17	0.00	0.00	25.00
MW-2	07/22/08		0.00	26.54	3,406.08	0.00	0.00	10.00
MW-2	07/30/08		0.00	26.60	3,406.02	0.00	0.00	15.00
MW-2	08/05/08		0.00	26.62	3,406.00	0.00	0.00	15.00
MW-2	08/14/08		0.00	26.70	3,405.92	0.00	0.00	15.00
MW-2	08/20/08		0.00	26.70	3,405.92	0.00	0.00	0.00
MW-2	08/27/08		0.00	0.00	3,432.62	0.00	0.00	45.00
MW-2	09/03/08							45.00
MW-2	09/20/08		0.00	26.30	3,406.32	0.00	0.00	35.00
MW-2	09/29/08		0.00	26.26	3,406.36	0.00	0.00	40.00
MW-2	11/07/08		0.00	26.19	3,406.43	0.00	0.00	0.00
MW-2	11/15/08		0.00	26.32	3,406.30	0.00	0.00	50.00
MW-2	11/24/08		0.00	26.19	3,406.43	0.00	0.00	25.00
MW-2	11/26/08		0.00	26.21	3,406.41	0.00	0.00	25.00
MW-2	12/20/08		0.00	26.23	3,406.39	0.00	0.00	50.00
MW-2	01/16/09		0.00	26.25	3,406.37	0.00	0.00	0.00
MW-2	02/09/09		0.00	26.30	3,406.32	0.00	0.00	0.00
MW-2	02/25/09		0.00			0.00	0.00	50.00
MW-2	03/05/09		0.00			0.00	0.00	50.00
MW-2	03/11/09		0.00			0.00	0.00	50.00
MW-2	03/19/09		0.00			0.00	0.00	50.00
MW-2	04/08/09		0.00	26.35	3,406.27	0.00	0.00	50.00
MW-2	04/16/09		0.00	26.35	3,406.27	0.00	0.00	52.00
MW-2	04/23/09		0.00	26.41	3,406.21	0.00	0.00	50.00
MW-2	04/29/08		0.00	26.43	3,406.19	0.00	0.00	50.00
MW-2	05/06/09		0.00	26.45	3,406.17	0.00	0.00	40.00
MW-2	05/14/09		0.00	26.51	3,406.11	0.00	0.00	0.00
MW-2	07/08/09		0.00	26.93	3,405.69	0.00	0.00	25.00
MW-2	07/24/09		0.00	26.99	3,405.63	0.00	0.00	0.00
MW-2	08/04/09		0.00	26.93	3,405.69	0.00	0.00	55.00
MW-2	08/12/09		0.00	27.05	3,405.57	0.00	0.00	0.00
MW-2	08/19/09		0.00	27.18	3,405.44	0.00	0.00	45.00
MW-2	09/01/09		0.00	27.21	3,405.41	0.00	0.00	48.50
MW-2	09/22/09		0.00	27.30	3,405.32	0.00	0.00	5.00
MW-2	10/12/09		0.00	27.27	3,405.35	0.00	0.00	25.00
MW-2	10/30/09		0.00	27.32	3,405.30	0.00	0.00	0.00
MW-2	11/10/09		0.00	27.27	3,405.35	0.00	0.00	10.00
MW-3	07/10/02	3,433.61	0.00	34.48	3,399.13	0.00	0.00	0.00
MW-3	04/15/03		0.00	32.14	3,401.47	0.00	0.00	0.00
MW-3	07/14/03		0.00	32.95	3,400.66	0.00	0.00	0.00
MW-3	04/20/04		0.00	29.17	3,404.44	0.00	0.00	0.00
MW-3	05/07/04		0.00	29.55	3,404.06	0.00	0.00	0.00
MW-3	05/25/04		0.00	29.80	3,403.81	0.00	0.00	0.00
MW-3	06/10/04		0.00	30.12	3,403.49	0.00	0.00	0.00
MW-3	07/14/04		0.00	28.33	3,405.28	0.00	0.00	0.00
MW-3	07/21/04		0.00	28.59	3,405.02	0.00	0.00	0.00
MW-3	08/02/04		0.00	28.85	3,404.76	0.00	0.00	0.00
MW-3	09/10/04		0.00	28.35	3,405.26	0.00	0.00	0.00
MW-3	09/14/04		0.00	28.45	3,405.16	0.00	0.00	0.00
MW-3	10/05/04		0.00	25.00	3,408.61	0.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-3	10/19/04		0.00	23.24	3,410.37	0.00	0.00	0.00
MW-3	11/02/04		0.00	23.29	3,410.32	0.00	0.00	0.00
MW-3	11/15/04		0.00	24.10	3,409.51	0.00	0.00	0.00
MW-3	12/06/04		0.00	24.33	3,409.28	0.00	0.00	0.00
MW-3	12/21/04		0.00	24.39	3,409.22	0.00	0.00	0.00
MW-3	01/03/05		0.00	24.73	3,408.88	0.00	0.00	0.00
MW-3	01/18/05		0.00	24.94	3,408.67	0.00	0.00	0.00
MW-3	02/01/05		0.00	25.08	3,408.53	0.00	0.00	0.00
MW-3	03/21/05		0.00	25.40	3,408.21	0.00	0.00	0.00
MW-3	04/21/05		0.00	25.66	3,407.95	0.00	0.00	0.00
MW-3	05/05/05		0.00	25.63	3,407.98	0.00	0.00	0.00
MW-3	05/17/05		0.00	25.82	3,407.79	0.00	0.00	0.00
MW-3	08/15/05		0.00	26.06	3,407.55	0.00	0.00	0.00
MW-3	10/05/05		0.00	25.98	3,407.63	0.00	0.00	0.00
MW-3	11/18/05		0.00	26.26	3,407.35	0.00	0.00	0.00
MW-3	01/12/06		0.00	26.37	3,407.24	0.00	0.00	0.00
MW-3	02/16/06		0.00	26.52	3,407.09	0.00	0.00	0.00
MW-3	03/16/06		0.00	26.71	3,406.90	0.00	0.00	0.00
MW-3	04/10/06		0.00	26.69	3,406.92	0.00	0.00	0.00
MW-3	05/22/06		0.00	26.84	3,406.77	0.00	0.00	0.00
MW-3	07/20/06		0.00	28.27	3,405.34	0.00	0.00	0.00
MW-3	08/07/06		0.00	27.39	3,406.22	0.00	0.00	0.00
MW-3	09/11/06		0.00	26.52	3,407.09	0.00	0.00	0.00
MW-3	10/17/06		0.00	22.62	3,410.99	0.00	0.00	0.00
MW-3	11/21/06		0.00	26.77	3,406.84	0.00	0.00	0.00
MW-3	12/13/06		0.00	26.80	3,406.81	0.00	0.00	0.00
MW-3	01/09/07		0.00	26.92	3,406.69	0.00	0.00	0.00
MW-3	02/14/07		0.00	26.84	3,406.77	0.00	0.00	0.00
MW-3	02/22/07		0.00	26.87	3,406.74	0.00	0.00	0.00
MW-3	03/01/07		0.00	26.84	3,406.77	0.00	0.00	0.00
MW-3	03/13/07		0.00	26.89	3,406.72	0.00	0.00	0.00
MW-3	05/10/07		0.00	26.48	3,407.13	0.00	0.00	0.00
MW-3	08/10/07		0.00	26.61	3,407.00	0.00	0.00	0.00
MW-3	08/20/07		0.00	26.70	3,406.91	0.00	0.00	0.00
MW-3	11/15/07		0.00	27.07	3,406.54	0.00	0.00	0.00
MW-3	02/28/08		0.00	26.99	3,406.62	0.00	0.00	0.00
MW-3	05/28/08		0.00	27.76	3,405.85	0.00	0.00	0.00
MW-3	08/20/08		0.00	27.85	3,405.76	0.00	0.00	0.00
MW-3	11/07/08		0.00	27.47	3,406.14	0.00	0.00	0.00
MW-3	02/09/09		0.00	27.58	3,406.03	0.00	0.00	0.00
MW-3	05/14/09		0.00	27.44	3,406.17	0.00	0.00	0.00
MW-3	08/12/09		0.00	28.18	3,405.43	0.00	0.00	0.00
MW-3	11/10/09		0.00	28.48	3,405.13	0.00	0.00	0.00
MW-4	07/10/02	3,432.35	30.70	30.95	3,401.63	0.25	0.00	0.00
MW-4	11/18/02		29.28	29.95	3,403.00	0.67	0.00	0.00
MW-4	12/13/02		29.75	30.99	3,402.48	1.24	0.00	0.00
MW-4	03/24/03		30.56	31.03	3,401.74	0.47	0.00	0.00
MW-4	04/15/03		30.55	31.05	3,401.75	0.50	0.00	0.00
MW-4	05/02/03		30.71	30.94	3,401.62	0.23	0.00	0.00
MW-4	06/16/03		31.09	31.18	3,401.25	0.09	0.00	0.00
MW-4	07/14/03		31.50	31.81	3,400.82	0.31	0.00	0.00
MW-4	07/31/03		31.49	31.80	3,400.83	0.31	0.00	0.00
MW-4	09/22/03		32.05	32.07	3,400.30	0.02	0.00	0.00
MW-4	10/23/03		32.03	33.07	3,400.22	1.04	0.00	0.00
MW-4	11/05/03		32.10	34.65	3,400.00	2.55	0.00	0.00
MW-4	01/02/04		31.82	35.30	3,400.18	3.48	0.00	0.00
MW-4	01/30/04		32.20	34.20	3,399.95	2.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-4	03/03/04		32.19	34.21	3,399.96	2.02	0.00	0.00
MW-4	03/15/04		32.15	33.87	3,400.03	1.72	0.00	0.00
MW-4	03/25/04		32.14	33.87	3,400.04	1.73	0.00	0.00
MW-4	04/20/04		27.20	27.86	3,405.08	0.66	0.00	0.00
MW-4	05/07/04		27.89	28.63	3,404.39	0.74	0.00	0.00
MW-4	05/25/04		28.55	28.78	3,403.78	0.23	0.00	0.00
MW-4	06/10/04		28.80	28.84	3,403.55	0.04	0.00	0.00
MW-4	07/14/04		0.00	26.88	3,405.47	0.00	0.00	0.00
MW-4	07/21/04		0.00	27.67	3,404.68	0.00	0.00	0.00
MW-4	08/02/04		0.00	27.28	3,405.07	0.00	0.00	0.00
MW-4	09/10/04		0.00	27.25	3,405.10	0.00	0.00	0.00
MW-4	09/14/04		0.00	27.15	3,405.20	0.00	0.00	0.00
MW-4	10/05/04		0.00	23.20	3,409.15	0.00	0.00	0.00
MW-4	10/19/04		0.00	22.00	3,410.35	0.00	0.00	0.00
MW-4	11/02/04		0.00	22.29	3,410.06	0.00	0.00	0.00
MW-4	11/15/04		0.00	22.95	3,409.40	0.00	0.00	0.00
MW-4	12/06/04		0.00	23.19	3,409.16	0.00	0.00	0.00
MW-4	12/21/04		0.00	23.21	3,409.14	0.00	0.00	0.00
MW-4	01/03/05		0.00	23.56	3,408.79	0.00	0.00	0.00
MW-4	01/18/05		0.00	23.75	3,408.60	0.00	0.00	0.00
MW-4	02/01/05		0.00	23.83	3,408.52	0.00	0.00	0.00
MW-4	03/21/05		0.00	24.11	3,408.24	0.00	0.00	0.00
MW-4	04/21/05		0.00	24.56	3,407.79	0.00	0.00	0.00
MW-4	05/05/05		0.00	24.54	3,407.81	0.00	0.00	0.00
MW-4	05/17/05		0.00	24.68	3,407.67	0.00	0.00	0.00
MW-4	08/15/05		0.00	24.98	3,407.37	0.00	0.00	0.00
MW-4	10/05/05		0.00	24.85	3,407.50	0.00	0.00	0.00
MW-4	11/18/05		0.00	25.04	3,407.31	0.00	0.00	0.00
MW-4	01/12/06		0.00	25.13	3,407.22	0.00	0.00	0.00
MW-4	02/16/06		0.00	25.31	3,407.04	0.00	0.00	0.00
MW-4	03/16/06		0.00	25.42	3,406.93	0.00	0.00	0.00
MW-4	04/10/06		0.00	25.42	3,406.93	0.00	0.00	0.00
MW-4	05/22/06		0.00	25.29	3,407.06	0.00	0.00	0.00
MW-4	07/20/06		0.00	26.02	3,406.33	0.00	0.00	0.00
MW-4	08/07/06		0.00	26.33	3,406.02	0.00	0.00	0.00
MW-4	09/11/06		0.00	25.02	3,407.33	0.00	0.00	0.00
MW-4	10/17/06		0.00	25.34	3,407.01	0.00	0.00	0.00
MW-4	11/21/06		0.00	25.37	3,406.98	0.00	0.00	0.00
MW-4	12/13/06		0.00	24.71	3,407.64	0.00	0.00	0.00
MW-4	01/09/07		0.00	25.81	3,406.54	0.00	0.00	0.00
MW-4	02/14/07		0.00	25.51	3,406.84	0.00	0.00	0.00
MW-4	02/22/07		0.00	25.47	3,406.88	0.00	0.00	0.00
MW-4	03/01/07		0.00	25.43	3,406.92	0.00	0.00	0.00
MW-4	03/13/07		0.00	25.46	3,406.89	0.00	0.00	0.00
MW-4	03/23/07		0.00			0.25	0.00	0.00
MW-4	04/09/07		0.00	25.39	3,406.96	0.00	0.00	0.00
MW-4	05/10/07		0.00	25.05	3,407.30	0.00	0.00	0.00
MW-4	05/16/07		0.00	24.83	3,407.52	0.00	0.00	0.00
MW-4	05/29/07		0.00	24.71	3,407.64	0.00	0.00	0.00
MW-4	06/06/07		0.00	22.12	3,410.23	0.00	0.00	0.00
MW-4	06/21/07		0.00	24.94	3,407.41	0.00	0.00	0.00
MW-4	07/12/07		0.00	25.10	3,407.25	0.00	0.00	0.00
MW-4	07/25/07		0.00	25.26	3,407.09	0.00	0.00	0.00
MW-4	08/08/07		0.00	25.38	3,406.97	0.00	0.00	0.00
MW-4	08/20/07		0.00	25.49	3,406.86	0.00	0.00	0.00
MW-4	09/07/07		0.00	26.66	3,405.69	0.00	0.00	0.00
MW-4	09/19/07		0.00	25.64	3,406.71	0.00	0.00	0.00
MW-4	10/01/07		0.00	24.03	3,408.32	0.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-4	10/15/07		0.00	25.69	3,406.66	0.00	0.00	0.00
MW-4	11/02/07		0.00	25.71	3,406.64	0.00	0.00	0.00
MW-4	11/15/07		0.00	25.73	3,406.62	0.00	0.00	0.00
MW-4	11/29/07		0.00	25.75	3,406.60	0.00	0.00	0.00
MW-4	12/27/07		0.00	25.65	3,406.70	0.00	0.00	0.00
MW-4	01/18/08		0.00	25.66	3,406.69	0.00	0.00	0.00
MW-4	02/20/08		0.00	25.17	3,407.18	0.00	0.00	0.00
MW-4	02/28/08		0.00	25.65	3,406.70	0.00	0.00	6.25
MW-4	04/30/08		0.00	25.71	3,406.64	0.00	0.10	0.00
MW-4	05/28/08		0.00	25.94	3,406.41	0.00	0.00	0.00
MW-4	05/30/08		0.00	25.71	3,406.64	0.00	0.00	0.00
MW-4	06/25/08		0.00	26.13	3,406.22	0.00	0.00	0.00
MW-4	07/02/08		0.00	26.20	3,406.15	0.00	0.00	0.00
MW-4	07/07/08		0.00	26.25	3,406.10	0.00	0.00	10.00
MW-4	07/14/08		0.00	26.30	3,406.05	0.00	0.00	25.00
MW-4	07/22/08		0.00	26.35	3,406.00	0.00	0.00	0.00
MW-4	07/30/08		0.00	26.40	3,405.95	0.00	0.00	0.00
MW-4	08/05/08		26.40	26.47	3,405.94	0.07	0.10	0.00
MW-4	08/14/08		0.00	26.52	3,405.83	0.00	0.00	10.00
MW-4	08/20/08		0.00	26.49	3,405.86	0.00	0.00	0.00
MW-4	09/03/08							15.00
MW-4	09/20/08		0.00	26.17	3,406.18	0.00	0.00	15.00
MW-4	11/07/08		0.00	26.08	3,406.27	0.00	0.00	0.00
MW-4	11/15/08		0.00	23.24	3,409.11	0.00	0.00	0.00
MW-4	11/24/08		0.00	26.10	3,406.25	0.00	0.10	0.00
MW-4	11/26/08		0.00	26.19	3,406.16	0.00	0.00	0.00
MW-4	12/20/08		0.00	26.06	3,406.29	0.00	0.00	0.00
MW-4	01/16/09		0.00	26.19	3,406.16	0.00	0.00	0.00
MW-4	02/09/09		0.00	26.22	3,406.13	0.00	0.00	0.00
MW-4	02/25/09		0.00			0.00	0.00	50.00
MW-4	03/05/09		0.00			0.00	0.00	50.00
MW-4	03/11/09		0.00			0.00	0.00	50.00
MW-4	03/19/09		0.00			0.00	0.00	50.00
MW-4	04/08/09		0.00	26.51	3,405.84	0.00	0.00	50.00
MW-4	04/16/09		0.00	26.40	3,405.95	0.00	0.00	52.00
MW-4	04/23/09		0.00	26.45	3,405.90	0.00	0.00	50.00
MW-4	05/06/09		0.00	26.59	3,405.76	0.00	0.00	40.00
MW-4	05/14/09		0.00	26.62	3,405.73	0.00	0.00	0.00
MW-4	07/08/09		0.00	26.79	3,405.56	0.00	0.00	50.00
MW-4	07/24/09		0.00	26.82	3,405.53	0.00	0.00	0.00
MW-4	08/04/09		0.00	26.84	3,405.51	0.00	0.00	55.00
MW-4	08/12/09		26.89	26.90	3,405.46	0.01	0.00	0.00
MW-4	08/19/09		0.00	26.90	3,405.45	0.00	0.00	47.00
MW-4	09/01/09		27.02	27.08	3,405.32	0.06	3.00	43.00
MW-4	09/22/09		27.15	27.18	3,405.20	0.03	0.25	5.00
MW-4	10/12/09		27.15	27.16	3,405.20	0.01	0.50	12.00
MW-4	10/30/09		0.00	27.21	3,405.14	0.00	0.00	0.00
MW-4	11/10/09		27.15	27.17	3,405.20	0.02	1.00	10.00
MW-5	07/10/02	3,429.63	0.00	27.16	3,402.47	0.00	0.00	0.00
MW-5	04/15/03		0.00	27.79	3,401.84	0.00	0.00	0.00
MW-5	07/14/03		0.00	28.79	3,400.84	0.00	0.00	0.00
MW-5	04/20/04		0.00	23.73	3,405.90	0.00	0.00	0.00
MW-5	05/07/04		0.00	24.75	3,404.88	0.00	0.00	0.00
MW-5	05/25/04		0.00	25.32	3,404.31	0.00	0.00	0.00
MW-5	06/10/04		0.00	25.66	3,403.97	0.00	0.00	0.00
MW-5	07/14/04		0.00	23.33	3,406.30	0.00	0.00	0.00
MW-5	07/21/04		0.00	24.30	3,405.33	0.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
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Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-5	08/02/04		0.00	23.88	3,405.75	0.00	0.00	0.00
MW-5	09/10/04		0.00	23.58	3,406.05	0.00	0.00	0.00
MW-5	09/14/04		0.00	23.88	3,405.75	0.00	0.00	0.00
MW-5	10/05/04		0.00	17.86	3,411.77	0.00	0.00	0.00
MW-5	10/19/04		0.00	17.50	3,412.13	0.00	0.00	0.00
MW-5	11/02/04		0.00	17.52	3,412.11	0.00	0.00	0.00
MW-5	11/15/04		0.00	19.54	3,410.09	0.00	0.00	0.00
MW-5	12/06/04		0.00	20.04	3,409.59	0.00	0.00	0.00
MW-5	12/21/04		0.00	20.17	3,409.46	0.00	0.00	0.00
MW-5	01/03/05		0.00	20.60	3,409.03	0.00	0.00	0.00
MW-5	01/18/05		0.00	20.86	3,408.77	0.00	0.00	0.00
MW-5	02/01/05		0.00	21.05	3,408.58	0.00	0.00	0.00
MW-5	03/21/05		0.00	21.41	3,408.22	0.00	0.00	0.00
MW-5	04/21/05		0.00	21.76	3,407.87	0.00	0.00	0.00
MW-5	05/05/05		0.00	21.76	3,407.87	0.00	0.00	0.00
MW-5	05/17/05		0.00	21.87	3,407.76	0.00	0.00	0.00
MW-5	08/15/05		0.00	22.00	3,407.63	0.00	0.00	0.00
MW-5	10/05/05		0.00	22.01	3,407.62	0.00	0.00	0.00
MW-5	11/18/05		0.00	22.20	3,407.43	0.00	0.00	0.00
MW-5	01/12/06		0.00	22.32	3,407.31	0.00	0.00	0.00
MW-5	02/16/06		0.00	22.56	3,407.07	0.00	0.00	0.00
MW-5	03/16/06		0.00	22.71	3,406.92	0.00	0.00	0.00
MW-5	04/10/06		0.00	22.66	3,406.97	0.00	0.00	0.00
MW-5	05/22/06		0.00	22.83	3,406.80	0.00	0.00	0.00
MW-5	07/20/06		0.00	23.26	3,406.37	0.00	0.00	0.00
MW-5	08/07/06		0.00	23.27	3,406.36	0.00	0.00	0.00
MW-5	09/11/06		0.00	22.23	3,407.40	0.00	0.00	0.00
MW-5	10/17/06		0.00	22.67	3,406.96	0.00	0.00	0.00
MW-5	11/21/06		0.00	22.67	3,406.96	0.00	0.00	0.00
MW-5	12/13/06		0.00	22.71	3,406.92	0.00	0.00	0.00
MW-5	01/09/07		0.00	22.83	3,406.80	0.00	0.00	0.00
MW-5	02/14/07		0.00	22.67	3,406.96	0.00	0.00	0.00
MW-5	02/22/07		0.00	22.69	3,406.94	0.00	0.00	0.00
MW-5	03/01/07		0.00	22.64	3,406.99	0.00	0.00	0.00
MW-5	03/13/07		0.00	22.68	3,406.95	0.00	0.00	0.00
MW-5	05/10/07		0.00	21.88	3,407.75	0.00	0.00	0.00
MW-5	08/10/07		0.00	22.49	3,407.14	0.00	0.00	0.00
MW-5	08/20/07		0.00	22.60	3,407.03	0.00	0.00	0.00
MW-5	11/15/07		0.00	22.87	3,406.76	0.00	0.00	0.00
MW-5	02/28/08		0.00	22.84	3,406.79	0.00	0.00	0.00
MW-5	04/30/08		0.00	22.89	3,406.74	0.00	0.00	0.00
MW-5	05/28/08		0.00	23.14	3,406.49	0.00	0.00	0.00
MW-5	05/30/08		0.00	22.89	3,406.74	0.00	0.00	10.00
MW-5	07/07/08		0.00	26.47	3,403.16	0.00	0.00	10.00
MW-5	07/14/08		0.00	23.50	3,406.13	0.00	0.00	25.00
MW-5	07/22/08		0.00	23.50	3,406.13	0.00	0.00	10.00
MW-5	07/30/08		0.00	23.65	3,405.98	0.00	0.00	20.00
MW-5	08/05/08		0.00	23.70	3,405.93	0.00	0.00	20.00
MW-5	08/14/08		0.00	23.74	3,405.89	0.00	0.00	12.00
MW-5	08/20/08		0.00	23.75	3,405.88	0.00	0.00	0.00
MW-5	08/27/08		0.00	0.00	3,429.63	0.00	0.00	15.00
MW-5	09/03/08							45.00
MW-5	09/20/08		0.00	23.33	3,406.30	0.00	0.00	35.00
MW-5	09/29/08		0.00	23.39	3,406.24	0.00	0.00	40.00
MW-5	11/07/08		0.00	24.59	3,405.04	0.00	0.00	0.00
MW-5	11/15/08		0.00	23.45	3,406.18	0.00	0.00	50.00
MW-5	11/24/08		0.00	23.34	3,406.29	0.00	0.00	25.00
MW-5	11/26/08		0.00	23.37	3,406.26	0.00	0.00	25.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-5	12/20/08		0.00	23.39	3,406.24	0.00	0.00	50.00
MW-5	01/16/09		0.00	23.42	3,406.21	0.00	0.00	0.00
MW-5	02/09/09		0.00	23.44	3,406.19	0.00	0.00	0.00
MW-5	02/25/09		0.00			0.00	0.00	50.00
MW-5	03/05/09		0.00			0.00	0.00	50.00
MW-5	03/11/09		0.00			0.00	0.00	50.00
MW-5	03/19/09		0.00			0.00	0.00	50.00
MW-5	04/08/09		0.00	23.49	3,406.14	0.00	0.00	50.00
MW-5	04/16/09		0.00	23.50	3,406.13	0.00	0.00	50.00
MW-5	04/23/09		0.00	24.31	3,405.32	0.00	0.00	50.00
MW-5	04/29/08		0.00	23.51	3,406.12	0.00	0.00	50.00
MW-5	05/06/09		0.00	23.59	3,406.04	0.00	0.00	50.00
MW-5	05/14/09		0.00	23.66	3,405.97	0.00	0.00	0.00
MW-5	07/08/09		0.00	24.01	3,405.62	0.00	0.00	35.00
MW-5	07/24/09		0.00	24.07	3,405.56	0.00	0.00	0.00
MW-5	08/04/09		0.00	24.48	3,405.15	0.00	0.00	55.00
MW-5	08/12/09		0.00	24.12	3,405.51	0.00	0.00	0.00
MW-5	08/19/09		0.00	24.16	3,405.47	0.00	0.00	2.00
MW-5	09/01/09		0.00	24.02	3,405.61	0.00	0.00	3.00
MW-5	09/22/09		0.00	24.38	3,405.25	0.00	0.00	5.00
MW-5	10/12/09		0.00	24.38	3,405.25	0.00	0.00	18.00
MW-5	10/30/09		0.00	24.41	3,405.22	0.00	0.00	0.00
MW-5	11/10/09		0.00	24.40	3,405.23	0.00	0.00	20.00
MW-6	07/10/02	3,429.30	0.00	27.16	3,402.14	0.00	0.00	0.00
MW-6	04/15/03		0.00	27.93	3,401.37	0.00	0.00	0.00
MW-6	07/14/03		0.00	28.90	3,400.40	0.00	0.00	0.00
MW-6	04/20/04		0.00	23.65	3,405.65	0.00	0.00	0.00
MW-6	05/07/04		0.00	24.72	3,404.58	0.00	0.00	0.00
MW-6	05/25/04		0.00	25.30	3,404.00	0.00	0.00	0.00
MW-6	06/10/04		0.00	25.75	3,403.55	0.00	0.00	0.00
MW-6	07/14/04		0.00	23.15	3,406.15	0.00	0.00	0.00
MW-6	07/21/04		0.00	24.41	3,404.89	0.00	0.00	0.00
MW-6	08/02/04		0.00	23.78	3,405.52	0.00	0.00	0.00
MW-6	09/10/04		0.00	23.86	3,405.44	0.00	0.00	0.00
MW-6	09/14/04		0.00	24.10	3,405.20	0.00	0.00	0.00
MW-6	10/05/04		0.00	16.96	3,412.34	0.00	0.00	0.00
MW-6	10/19/04		0.00	16.84	3,412.46	0.00	0.00	0.00
MW-6	11/02/04		0.00	16.86	3,412.44	0.00	0.00	0.00
MW-6	11/15/04		0.00	19.33	3,409.97	0.00	0.00	0.00
MW-6	12/06/04		0.00	19.77	3,409.53	0.00	0.00	0.00
MW-6	12/21/04		0.00	19.98	3,409.32	0.00	0.00	0.00
MW-6	01/03/05		0.00	20.42	3,408.88	0.00	0.00	0.00
MW-6	01/18/05		0.00	20.70	3,408.60	0.00	0.00	0.00
MW-6	02/01/05		0.00	20.90	3,408.40	0.00	0.00	0.00
MW-6	03/21/05		0.00	21.52	3,407.78	0.00	0.00	0.00
MW-6	04/21/05		0.00	21.64	3,407.66	0.00	0.00	0.00
MW-6	05/05/05		0.00	21.62	3,407.68	0.00	0.00	0.00
MW-6	05/17/05		0.00	21.77	3,407.53	0.00	0.00	0.00
MW-6	08/15/05		0.00	21.91	3,407.39	0.00	0.00	0.00
MW-6	10/05/05		0.00	21.98	3,407.32	0.00	0.00	0.00
MW-6	11/18/05		0.00	22.25	3,407.05	0.00	0.00	0.00
MW-6	01/12/06		0.00	22.36	3,406.94	0.00	0.00	0.00
MW-6	02/16/06		0.00	22.51	3,406.79	0.00	0.00	0.00
MW-6	03/16/06		0.00	22.71	3,406.59	0.00	0.00	0.00
MW-6	04/10/06		0.00	22.65	3,406.65	0.00	0.00	0.00
MW-6	05/22/06		0.00	22.82	3,406.48	0.00	0.00	0.00
MW-6	07/20/06		0.00	23.26	3,406.04	0.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-6	08/07/06		0.00	24.37	3,404.93	0.00	0.00	0.00
MW-6	09/11/06		0.00	22.28	3,407.02	0.00	0.00	0.00
MW-6	10/17/06		0.00	22.54	3,406.76	0.00	0.00	0.00
MW-6	11/21/06		0.00	22.66	3,406.64	0.00	0.00	0.00
MW-6	12/13/06		0.00	22.69	3,406.61	0.00	0.00	0.00
MW-6	01/09/07		0.00	22.83	3,406.47	0.00	0.00	0.00
MW-6	02/14/07		0.00	22.75	3,406.55	0.00	0.00	0.00
MW-6	02/22/07		0.00	22.78	3,406.52	0.00	0.00	0.00
MW-6	03/01/07		0.00	22.75	3,406.55	0.00	0.00	0.00
MW-6	03/13/07		0.00	22.78	3,406.52	0.00	0.00	0.00
MW-6	05/10/07		0.00	22.06	3,407.24	0.00	0.00	0.00
MW-6	08/10/07		0.00	22.56	3,406.74	0.00	0.00	0.00
MW-6	08/20/07		0.00	22.67	3,406.63	0.00	0.00	0.00
MW-6	11/15/07		0.00	22.46	3,406.84	0.00	0.00	0.00
MW-6	02/28/08		0.00	22.91	3,406.39	0.00	0.00	0.00
MW-6	05/28/08		0.00	23.19	3,406.11	0.00	0.00	0.00
MW-6	08/20/08		0.00	23.82	3,405.48	0.00	0.00	0.00
MW-6	11/07/08		0.00	23.41	3,405.89	0.00	0.00	0.00
MW-6	02/09/09		0.00	23.53	3,405.77	0.00	0.00	0.00
MW-6	05/14/09		0.00	23.77	3,405.53	0.00	0.00	0.00
MW-6	08/12/09		0.00	24.19	3,405.11	0.00	0.00	0.00
MW-6	11/10/09		0.00	24.46	3,404.84	0.00	0.00	0.00
MW-7	06/10/04	3,431.37	0.00	27.15	3,404.22	0.00	0.00	0.00
MW-7	07/14/04		0.00	25.69	3,405.68	0.00	0.00	0.00
MW-7	07/21/04		0.00	25.93	3,405.44	0.00	0.00	0.00
MW-7	08/02/04		0.00	26.10	3,405.27	0.00	0.00	0.00
MW-7	09/10/04		0.00	25.73	3,405.64	0.00	0.00	0.00
MW-7	09/14/04		0.00	25.75	3,405.62	0.00	0.00	0.00
MW-7	10/05/04		0.00	22.65	3,408.72	0.00	0.00	0.00
MW-7	10/19/04		0.00	21.55	3,409.82	0.00	0.00	0.00
MW-7	11/02/04		0.00	21.58	3,409.79	0.00	0.00	0.00
MW-7	11/15/04		0.00	21.68	3,409.69	0.00	0.00	0.00
MW-7	12/06/04		0.00	21.80	3,409.57	0.00	0.00	0.00
MW-7	12/21/04		0.00	21.43	3,409.94	0.00	0.00	0.00
MW-7	01/03/05		0.00	22.03	3,409.34	0.00	0.00	0.00
MW-7	01/18/05		0.00	22.18	3,409.19	0.00	0.00	0.00
MW-7	02/01/05		0.00	22.29	3,409.08	0.00	0.00	0.00
MW-7	03/21/05		0.00	22.49	3,408.88	0.00	0.00	0.00
MW-7	04/21/05		0.00	22.76	3,408.61	0.00	0.00	0.00
MW-7	05/05/05		0.00	22.74	3,408.63	0.00	0.00	0.00
MW-7	05/17/05		0.00	22.86	3,408.51	0.00	0.00	0.00
MW-7	08/15/05		0.00	23.30	3,408.07	0.00	0.00	0.00
MW-7	10/05/05		0.00	23.01	3,408.36	0.00	0.00	0.00
MW-7	11/18/05		0.00	23.18	3,408.19	0.00	0.00	0.00
MW-7	01/12/06		0.00	23.25	3,408.12	0.00	0.00	0.00
MW-7	02/16/06		0.00	23.41	3,407.96	0.00	0.00	0.00
MW-7	03/16/06		0.00	23.60	3,407.77	0.00	0.00	0.00
MW-7	04/10/06		0.00	23.52	3,407.85	0.00	0.00	0.00
MW-7	05/22/06		0.00	23.75	3,407.62	0.00	0.00	0.00
MW-7	07/20/06		0.00	24.24	3,407.13	0.00	0.00	0.00
MW-7	08/07/06		0.00	24.33	3,407.04	0.00	0.00	0.00
MW-7	09/11/06		0.00	23.41	3,407.96	0.00	0.00	0.00
MW-7	10/17/06		0.00	23.44	3,407.93	0.00	0.00	0.00
MW-7	11/21/06		0.00	23.49	3,407.88	0.00	0.00	0.00
MW-7	12/13/06		0.00	23.48	3,407.89	0.00	0.00	0.00
MW-7	01/09/07		0.00	23.61	3,407.76	0.00	0.00	0.00
MW-7	02/14/07		0.00	23.50	3,407.87	0.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-7	02/22/07		0.00	23.54	3,407.83	0.00	0.00	0.00
MW-7	03/01/07		0.00	23.49	3,407.88	0.00	0.00	0.00
MW-7	03/13/07		0.00	23.54	3,407.83	0.00	0.00	0.00
MW-7	05/10/07		0.00	23.20	3,408.17	0.00	0.00	0.00
MW-7	08/10/07		0.00	23.58	3,407.79	0.00	0.00	0.00
MW-7	08/20/07		0.00	23.66	3,407.71	0.00	0.00	0.00
MW-7	11/15/07		0.00	23.85	3,407.52	0.00	0.00	0.00
MW-7	02/28/08		0.00	23.73	3,407.64	0.00	0.00	0.00
MW-7	05/28/08		0.00	24.09	3,407.28	0.00	0.00	0.00
MW-7	08/20/08		0.00	24.76	3,406.61	0.00	0.00	0.00
MW-7	11/07/08		0.00	24.21	3,407.16	0.00	0.00	0.00
MW-7	02/09/09		0.00	24.32	3,407.05	0.00	0.00	0.00
MW-7	04/16/09		0.00	24.35	3,407.02	0.00	0.00	0.00
MW-7	05/14/09		0.00	24.56	3,406.81	0.00	0.00	0.00
MW-7	08/12/09		0.00	25.14	3,406.23	0.00	0.00	0.00
MW-7	11/10/09		0.00	25.31	3,406.06	0.00	0.00	0.00
MW-8	06/10/04	3,431.07	0.00	27.52	3,403.55	0.00	0.00	0.00
MW-8	07/14/04		0.00	25.69	3,405.38	0.00	0.00	0.00
MW-8	07/21/04		0.00	25.46	3,405.61	0.00	0.00	0.00
MW-8	08/02/04		0.00	25.88	3,405.19	0.00	0.00	0.00
MW-8	09/10/04		0.00	25.35	3,405.72	0.00	0.00	0.00
MW-8	09/14/04		0.00	25.51	3,405.56	0.00	0.00	0.00
MW-8	10/05/04		0.00	20.30	3,410.77	0.00	0.00	0.00
MW-8	10/19/04		0.00	19.44	3,411.63	0.00	0.00	0.00
MW-8	11/02/04		0.00	19.46	3,411.61	0.00	0.00	0.00
MW-8	11/15/04		0.00	21.07	3,410.00	0.00	0.00	0.00
MW-8	12/06/04		0.00	21.48	3,409.59	0.00	0.00	0.00
MW-8	12/21/04		0.00	21.58	3,409.49	0.00	0.00	0.00
MW-8	01/03/05		0.00	21.98	3,409.09	0.00	0.00	0.00
MW-8	01/18/05		0.00	22.21	3,408.86	0.00	0.00	0.00
MW-8	02/01/05		0.00	22.37	3,408.70	0.00	0.00	0.00
MW-8	03/21/05		0.00	22.72	3,408.35	0.00	0.00	0.00
MW-8	04/21/05		0.00	22.92	3,408.15	0.00	0.00	0.00
MW-8	05/05/05		0.00	22.90	3,408.17	0.00	0.00	0.00
MW-8	05/17/05		0.00	23.16	3,407.91	0.00	0.00	0.00
MW-8	08/15/05		0.00	23.41	3,407.66	0.00	0.00	0.00
MW-8	10/05/05		0.00	23.29	3,407.78	0.00	0.00	0.00
MW-8	11/18/05		0.00	23.55	3,407.52	0.00	0.00	0.00
MW-8	01/12/06		0.00	23.58	3,407.49	0.00	0.00	0.00
MW-8	02/16/06		0.00	23.80	3,407.27	0.00	0.00	0.00
MW-8	03/16/06		0.00	23.92	3,407.15	0.00	0.00	0.00
MW-8	04/10/06		0.00	24.09	3,406.98	0.00	0.00	0.00
MW-8	05/22/06		0.00	24.25	3,406.82	0.00	0.00	0.00
MW-8	07/20/06		0.00	24.57	3,406.50	0.00	0.00	0.00
MW-8	08/07/06		0.00	24.66	3,406.41	0.00	0.00	0.00
MW-8	09/11/06		0.00	23.65	3,407.42	0.00	0.00	0.00
MW-8	10/17/06		0.00	23.83	3,407.24	0.00	0.00	0.00
MW-8	11/21/06		0.00	24.18	3,406.89	0.00	0.00	0.00
MW-8	12/13/06		0.00	24.23	3,406.84	0.00	0.00	0.00
MW-8	01/09/07		0.00	24.36	3,406.71	0.00	0.00	0.00
MW-8	02/14/07		0.00	24.64	3,406.43	0.00	0.00	0.00
MW-8	02/22/07		0.00	23.95	3,407.12	0.00	0.00	0.00
MW-8	03/01/07		0.00	23.92	3,407.15	0.00	0.00	0.00
MW-8	03/13/07		0.00	23.95	3,407.12	0.00	0.00	0.00
MW-8	05/10/07		0.00	23.37	3,407.70	0.00	0.00	0.00
MW-8	08/10/07		0.00	23.78	3,407.29	0.00	0.00	0.00
MW-8	08/20/07		0.00	23.91	3,407.16	0.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-8	09/07/07		0.00	24.09	3,406.98	0.00	0.00	0.00
MW-8	09/19/07		0.00	24.13	3,406.94	0.00	0.00	0.00
MW-8	10/01/07		0.00	25.68	3,405.39	0.00	0.00	0.00
MW-8	10/15/07		0.00	24.16	3,406.91	0.00	0.00	0.00
MW-8	11/02/07		0.00	24.22	3,406.85	0.00	0.00	0.00
MW-8	11/15/07		0.00	24.24	3,406.83	0.00	0.00	0.00
MW-8	11/28/07		0.00	24.23	3,406.84	0.00	0.00	0.00
MW-8	12/27/07		0.00	24.08	3,406.99	0.00	0.00	0.00
MW-8	01/18/08		0.00	24.20	3,406.87	0.00	0.00	0.00
MW-8	02/20/08		0.00	24.23	3,406.84	0.00	0.00	0.00
MW-8	02/28/08		0.00	24.17	3,406.90	0.00	0.00	0.00
MW-8	03/11/08		0.00	24.24	3,406.83	0.00	0.00	0.00
MW-8	04/30/08		0.00	24.30	3,406.77	0.00	0.00	0.00
MW-8	05/28/08		0.00	24.42	3,406.65	0.00	0.00	0.00
MW-8	05/30/08		0.00	24.30	3,406.77	0.00	0.00	0.00
MW-8	06/25/08		0.00	24.74	3,406.33	0.00	0.00	0.00
MW-8	07/02/08		0.00	24.72	3,406.35	0.00	0.00	30.00
MW-8	07/07/08		0.00	24.87	3,406.20	0.00	0.00	0.00
MW-8	07/14/08		0.00	24.90	3,406.17	0.00	0.00	0.00
MW-8	07/22/08		0.00	24.91	3,406.16	0.00	0.00	10.00
MW-8	07/30/08		0.00	25.01	3,406.06	0.00	0.00	20.00
MW-8	08/05/08		0.00	25.05	3,406.02	0.00	0.00	20.00
MW-8	08/14/08		0.00	25.09	3,405.98	0.00	0.00	21.00
MW-8	08/20/08		0.00	24.98	3,406.09	0.00	0.00	0.00
MW-8	08/27/08		0.00	0.00	3,431.07	0.00	0.00	55.00
MW-8	09/03/08							45.00
MW-8	09/20/08		0.00	24.64	3,406.43	0.00	0.00	35.00
MW-8	09/29/08		0.00	24.86	3,406.21	0.00	0.00	40.00
MW-8	11/07/08		0.00	24.59	3,406.48	0.00	0.00	0.00
MW-8	11/15/08		0.00	24.73	3,406.34	0.00	0.00	50.00
MW-8	11/24/08		0.00	24.61	3,406.46	0.00	0.00	25.00
MW-8	11/26/08		0.00	24.64	3,406.43	0.00	0.00	25.00
MW-8	12/20/08		0.00	24.66	3,406.41	0.00	0.00	50.00
MW-8	01/16/09		0.00	24.69	3,406.38	0.00	0.00	0.00
MW-8	02/09/09		0.00	24.72	3,406.35	0.00	0.00	0.00
MW-8	02/25/09		0.00			0.00	0.00	50.00
MW-8	03/05/09		0.00			0.00	0.00	50.00
MW-8	03/11/09		0.00			0.00	0.00	50.00
MW-8	03/19/09		0.00			0.00	0.00	50.00
MW-8	04/08/09		0.00	25.05	3,406.02	0.00	0.00	50.00
MW-8	04/16/09		0.00	25.02	3,406.05	0.00	0.00	50.00
MW-8	04/23/09		0.00	24.80	3,406.27	0.00	0.00	50.00
MW-8	04/29/08		0.00	24.98	3,406.09	0.00	0.00	40.00
MW-8	05/06/09		0.00	24.82	3,406.25	0.00	0.00	50.00
MW-8	05/14/09		0.00	24.90	3,406.17	0.00	0.00	0.00
MW-8	07/08/09		0.00	25.29	3,405.78	0.00	0.00	50.00
MW-8	07/24/09		0.00	25.34	3,405.73	0.00	0.00	0.00
MW-8	08/04/09		0.00	25.32	3,405.75	0.00	0.00	55.00
MW-8	08/12/09		0.00	25.41	3,405.66	0.00	0.00	0.00
MW-8	08/19/09		0.00	25.43	3,405.64	0.00	0.10	40.00
MW-8	09/01/09		0.00	25.54	3,405.53	0.00	0.00	44.50
MW-8	09/22/09		0.00	25.65	3,405.42	0.00	0.00	5.00
MW-8	10/12/09		0.00	25.66	3,405.41	0.00	0.00	19.00
MW-8	10/30/09		0.00	25.70	3,405.37	0.00	0.00	0.00
MW-8	11/10/09		0.00	25.68	3,405.39	0.00	0.00	10.00
MW-9	06/10/04	3,429.79	0.00	Screen Filled With Mud		0.00	0.00	0.00
MW-9	07/14/04		0.00	24.02	3,405.77	0.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-9	07/21/04		0.00	23.84	3,405.95	0.00	0.00	0.00
MW-9	08/02/04		0.00	24.77	3,405.02	0.00	0.00	0.00
MW-9	09/10/04		0.00	24.21	3,405.58	0.00	0.00	0.00
MW-9	09/14/04		0.00	24.27	3,405.52	0.00	0.00	0.00
MW-9	10/05/04		0.00	15.51	3,414.28	0.00	0.00	0.00
MW-9	10/19/04		0.00	16.54	3,413.25	0.00	0.00	0.00
MW-9	11/02/04		0.00	16.57	3,413.22	0.00	0.00	0.00
MW-9	11/15/04		0.00	19.53	3,410.26	0.00	0.00	0.00
MW-9	12/06/04		0.00	20.02	3,409.77	0.00	0.00	0.00
MW-9	12/21/04		0.00	20.36	3,409.43	0.00	0.00	0.00
MW-9	01/03/05		0.00	20.83	3,408.96	0.00	0.00	0.00
MW-9	01/18/05		0.00	21.10	3,408.69	0.00	0.00	0.00
MW-9	02/01/05		0.00	21.30	3,408.49	0.00	0.00	0.00
MW-9	03/21/05		0.00	21.69	3,408.10	0.00	0.00	0.00
MW-9	04/21/05		0.00	22.08	3,407.71	0.00	0.00	0.00
MW-9	05/05/05		0.00	22.06	3,407.73	0.00	0.00	0.00
MW-9	05/17/05		0.00	22.23	3,407.56	0.00	0.00	0.00
MW-9	08/15/05		0.00	22.30	3,407.49	0.00	0.00	0.00
MW-9	10/05/05		0.00	22.41	3,407.38	0.00	0.00	0.00
MW-9	11/18/05		0.00	22.68	3,407.11	0.00	0.00	0.00
MW-9	01/12/06		0.00	22.71	3,407.08	0.00	0.00	0.00
MW-9	02/16/06		0.00	22.93	3,406.86	0.00	0.00	0.00
MW-9	03/16/06		0.00	23.12	3,406.67	0.00	0.00	0.00
MW-9	04/10/06		0.00	23.10	3,406.69	0.00	0.00	0.00
MW-9	05/22/06		0.00	23.21	3,406.58	0.00	0.00	0.00
MW-9	07/20/06		0.00	23.69	3,406.10	0.00	0.00	0.00
MW-9	08/07/06		0.00	24.02	3,405.77	0.00	0.00	0.00
MW-9	09/11/06		0.00	22.61	3,407.18	0.00	0.00	0.00
MW-9	10/17/06		0.00	22.98	3,406.81	0.00	0.00	0.00
MW-9	11/21/06		0.00	23.06	3,406.73	0.00	0.00	0.00
MW-9	12/13/06		0.00	23.71	3,406.08	0.00	0.00	0.00
MW-9	01/09/07		0.00	23.24	3,406.55	0.00	0.00	0.00
MW-9	02/14/07		0.00	23.19	3,406.60	0.00	0.00	0.00
MW-9	02/22/07		0.00	23.09	3,406.70	0.00	0.00	0.00
MW-9	03/01/07		0.00	23.07	3,406.72	0.00	0.00	0.00
MW-9	03/13/07		0.00	23.10	3,406.69	0.00	0.00	0.00
MW-9	05/10/07		0.00	22.04	3,407.75	0.00	0.00	0.00
MW-9	05/29/07		0.00	22.08	3,407.71	0.00	0.00	0.00
MW-9	06/06/07		0.00	24.68	3,405.11	0.00	0.00	0.00
MW-9	06/21/07		0.00	22.35	3,407.44	0.00	0.00	0.00
MW-9	08/10/07		0.00	22.86	3,406.93	0.00	0.00	0.00
MW-9	08/20/07		0.00	22.99	3,406.80	0.00	0.00	0.00
MW-9	11/15/07		0.00	23.28	3,406.51	0.00	0.00	0.00
MW-9	02/28/08		0.00	23.24	3,406.55	0.00	0.00	0.00
MW-9	04/30/08		0.00	23.30	3,406.49	0.00	0.00	0.00
MW-9	05/28/08		0.00	23.53	3,406.26	0.00	0.00	0.00
MW-9	05/30/08		0.00	23.30	3,406.49	0.00	0.00	0.00
MW-9	08/20/08		0.00	24.14	3,405.65	0.00	0.00	0.00
MW-9	08/27/08		0.00	0.00	3,429.79	0.00	0.00	5.00
MW-9	09/03/08							5.00
MW-9	09/20/08		0.00	23.71	3,406.08	0.00	0.00	5.00
MW-9	09/29/08		0.00	23.77	3,406.02	0.00	0.00	5.00
MW-9	11/07/08		0.00	23.74	3,406.05	0.00	0.00	0.00
MW-9	11/15/08		0.00	23.86	3,405.93	0.00	0.00	5.00
MW-9	11/24/08		0.00	23.76	3,406.03	0.00	0.00	25.00
MW-9	11/26/08		0.00	23.79	3,406.00	0.00	0.00	5.00
MW-9	12/20/08		0.00	23.82	3,405.97	0.00	0.00	5.00
MW-9	01/16/09		0.00	23.85	3,405.94	0.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-9	02/09/09		0.00	23.78	3,406.01	0.00	0.00	0.00
MW-9	02/25/09		0.00			0.00	0.00	5.00
MW-9	03/05/09		0.00			0.00	0.00	5.00
MW-9	03/11/09		0.00			0.00	0.00	5.00
MW-9	03/19/09		0.00			0.00	0.00	5.00
MW-9	04/08/09		0.00	24.15	3,405.64	0.00	0.00	35.00
MW-9	04/16/09		0.00	24.23	3,405.56	0.00	0.00	20.00
MW-9	04/23/09		0.00	25.45	3,404.34	0.00	0.00	30.00
MW-9	04/29/08		0.00	23.95	3,405.84	0.00	0.00	15.00
MW-9	05/06/09		0.00	24.02	3,405.77	0.00	0.00	20.00
MW-9	05/14/09		0.00	24.10	3,405.69	0.00	0.00	0.00
MW-9	07/08/09		0.00	24.41	3,405.38	0.00	0.00	7.00
MW-9	07/24/09		0.00	24.48	3,405.31	0.00	0.00	0.00
MW-9	08/04/09		0.00	24.43	3,405.36	0.00	0.00	55.00
MW-9	08/12/09		0.00	24.52	3,405.27	0.00	0.00	0.00
MW-9	08/19/09		0.00	24.55	3,405.24	0.00	0.00	4.00
MW-9	09/01/09		0.00	24.68	3,405.11	0.00	0.00	10.00
MW-9	09/22/09		0.00	24.79	3,405.00	0.00	0.00	5.00
MW-9	10/12/09		0.00	24.78	3,405.01	0.00	0.00	7.00
MW-9	10/30/09		0.00	24.83	3,404.96	0.00	0.00	0.00
MW-9	11/10/09		0.00	24.80	3,404.99	0.00	0.00	15.00
MW-10	11/15/04	3,429.49	0.00	19.61	3,409.88	0.00	0.00	0.00
MW-10	12/06/04		0.00	19.95	3,409.54	0.00	0.00	0.00
MW-10	12/21/04		0.00	20.13	3,409.36	0.00	0.00	0.00
MW-10	01/03/05		0.00	20.56	3,408.93	0.00	0.00	0.00
MW-10	01/18/05		0.00	20.79	3,408.70	0.00	0.00	0.00
MW-10	02/01/05		0.00	20.98	3,408.51	0.00	0.00	0.00
MW-10	03/21/05		0.00	21.36	3,408.13	0.00	0.00	0.00
MW-10	04/21/05		0.00	21.64	3,407.85	0.00	0.00	0.00
MW-10	05/05/05		0.00	21.69	3,407.80	0.00	0.00	0.00
MW-10	05/17/05		0.00	21.81	3,407.68	0.00	0.00	0.00
MW-10	08/15/05		0.00	21.93	3,407.56	0.00	0.00	0.00
MW-10	10/05/05		0.00	21.98	3,407.51	0.00	0.00	0.00
MW-10	11/18/05		0.00	22.22	3,407.27	0.00	0.00	0.00
MW-10	01/12/06		0.00	22.33	3,407.16	0.00	0.00	0.00
MW-10	02/16/06		0.00	22.47	3,407.02	0.00	0.00	0.00
MW-10	03/16/06		0.00	22.77	3,406.72	0.00	0.00	0.00
MW-10	04/10/06		0.00	22.60	3,406.89	0.00	0.00	0.00
MW-10	05/22/06		0.00	22.78	3,406.71	0.00	0.00	0.00
MW-10	07/20/06		0.00	23.18	3,406.31	0.00	0.00	0.00
MW-10	08/07/06		0.00	23.25	3,406.24	0.00	0.00	0.00
MW-10	09/11/06		0.00	22.11	3,407.38	0.00	0.00	0.00
MW-10	10/17/06		0.00	22.46	3,407.03	0.00	0.00	0.00
MW-10	11/21/06		0.00	22.57	3,406.92	0.00	0.00	0.00
MW-10	12/13/06		0.00	22.61	3,406.88	0.00	0.00	0.00
MW-10	01/09/07		0.00	22.71	3,406.78	0.00	0.00	0.00
MW-10	02/14/07		0.00	22.65	3,406.84	0.00	0.00	0.00
MW-10	02/22/07		0.00	22.64	3,406.85	0.00	0.00	0.00
MW-10	03/01/07		0.00	22.58	3,406.91	0.00	0.00	0.00
MW-10	03/13/07		0.00	22.64	3,406.85	0.00	0.00	0.00
MW-10	05/10/07		0.00	21.61	3,407.88	0.00	0.00	0.00
MW-10	08/10/07		0.00	22.48	3,407.01	0.00	0.00	0.00
MW-10	08/20/07		0.00	22.59	3,406.90	0.00	0.00	0.00
MW-10	11/15/07		0.00	22.87	3,406.62	0.00	0.00	0.00
MW-10	02/28/08		0.00	22.81	3,406.68	0.00	0.00	0.00
MW-10	05/28/08		0.00	23.09	3,406.40	0.00	0.00	0.00
MW-10	08/20/08		0.00	23.73	3,405.76	0.00	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All measurements are in feet above mean sea level

Monitor Well	Date Gauged	Relative Top of Casing Elevation (TOC)*	Depth to PSH Below Top of Casing	Depth to Water Below Top of Casing	Corrected Relative Groundwater Elevation*	PSH Thickness	PSH Recovered	Volume Purged
MW-10	11/07/08		0.00	23.38	3,406.11	0.00	0.00	0.00
MW-10	02/09/09		0.00	23.41	3,406.08	0.00	0.00	0.00
MW-10	04/16/09		0.00	23.51	3,405.98	0.00	0.00	0.00
MW-10	05/14/09		0.00	23.62	3,405.87	0.00	0.00	0.00
MW-10	08/12/09		0.00	24.11	3,405.38	0.00	0.00	0.00
MW-10	11/10/09		0.00	24.36	3,405.13	0.00	0.00	0.00
MW-11	11/15/04	3,428.32	0.00	18.26	3,410.06	0.00	0.00	0.00
MW-11	12/06/04		0.00	18.67	3,409.65	0.00	0.00	0.00
MW-11	12/21/04		0.00	18.93	3,409.39	0.00	0.00	0.00
MW-11	01/03/05		0.00	19.40	3,408.92	0.00	0.00	0.00
MW-11	01/18/05		0.00	19.68	3,408.64	0.00	0.00	0.00
MW-11	02/01/05		0.00	19.90	3,408.42	0.00	0.00	0.00
MW-11	03/21/05		0.00	20.34	3,407.98	0.00	0.00	0.00
MW-11	04/21/05		0.00	20.70	3,407.62	0.00	0.00	0.00
MW-11	05/05/05		0.00	20.71	3,407.61	0.00	0.00	0.00
MW-11	05/17/05		0.00	20.87	3,407.45	0.00	0.00	0.00
MW-11	08/15/05		0.00	20.95	3,407.37	0.00	0.00	0.00
MW-11	10/05/05		0.00	21.04	3,407.28	0.00	0.00	0.00
MW-11	11/18/05		0.00	21.31	3,407.01	0.00	0.00	0.00
MW-11	01/12/06		0.00	21.55	3,406.77	0.00	0.00	0.00
MW-11	02/16/06		0.00	21.58	3,406.74	0.00	0.00	0.00
MW-11	03/16/06		0.00	21.77	3,406.55	0.00	0.00	0.00
MW-11	04/10/06		0.00	21.75	3,406.57	0.00	0.00	0.00
MW-11	05/22/06		0.00	21.90	3,406.42	0.00	0.00	0.00
MW-11	08/07/06		0.00	22.32	3,406.00	0.00	0.00	0.00
MW-11	09/11/06		0.00	21.19	3,407.13	0.00	0.00	0.00
MW-11	10/17/06		0.00	21.49	3,406.83	0.00	0.00	0.00
MW-11	11/21/06		0.00	21.61	3,406.71	0.00	0.00	0.00
MW-11	12/13/06		0.00	21.64	3,406.68	0.00	0.00	0.00
MW-11	01/09/07		0.00	21.47	3,406.85	0.00	0.00	0.00
MW-11	02/14/07		0.00	21.70	3,406.62	0.00	0.00	0.00
MW-11	02/22/07		0.00	21.72	3,406.60	0.00	0.00	0.00
MW-11	03/01/07		0.00	21.69	3,406.63	0.00	0.00	0.00
MW-11	03/13/07		0.00	21.73	3,406.59	0.00	0.00	0.00
MW-11	05/10/07		0.00	20.04	3,408.28	0.00	0.00	0.00
MW-11	08/10/07		0.00	22.54	3,405.78	0.00	0.00	0.00
MW-11	08/20/07		0.00	21.63	3,406.69	0.00	0.00	0.00
MW-11	11/15/07		0.00	21.94	3,406.38	0.00	0.00	0.00
MW-11	02/28/08		0.00	21.89	3,406.43	0.00	0.00	0.00
MW-11	05/28/08		0.00	21.17	3,407.15	0.00	0.00	0.00
MW-11	08/20/08		0.00	22.77	3,405.55	0.00	0.00	0.00
MW-11	11/07/08		0.00	22.38	3,405.94	0.00	0.00	0.00
MW-11	02/09/09		0.00	22.51	3,405.81	0.00	0.00	0.00
MW-11	04/16/09		0.00	22.44	3,405.88	0.00	0.00	0.00
MW-11	05/14/09		0.00	22.73	3,405.59	0.00	0.00	0.00
MW-11	08/12/09		0.00	23.17	3,405.15	0.00	0.00	0.00
MW-11	11/10/09		0.00	23.42	3,404.90	0.00	0.00	0.00
							5.25	Total Gallons
							0.13	Total Barrels

* - Wells are referenced to the TOC of groundwater monitoring well MW-2 (set to an elevation 3,432.62 feet)
PSH - Phase separated hydrocarbons

Table 2

CONCENTRATIONS OF BTEX AND TPH IN GROUNDWATER

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All concentrations are reported in mg/L

Monitor Well Identification	Date	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene	Gasoline TPH C_6-C_{12}	Diesel TPH $>C_{12}$-C_{28}	Oil TPH $>C_{28}$-C_{35}	Total TPH C_6-C_{35}
MW-1	09/13/01	0.002	0.003	<0.001	<0.001	<0.001	<0.003	<0.003	NA	<0.006
MW-1	01/24/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-1	04/12/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-1	07/10/02	0.00188	<0.001	0.00187	0.00104	<0.001	NA	NA	NA	NA
MW-1	04/15/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-1	07/14/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-1	04/20/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-1	07/14/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-1	09/14/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-1	12/21/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-1	03/21/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-1	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-1	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-1	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-1	02/22/07	<0.001	<0.001	<0.001	<0.002		NA	NA	NA	NA
MW-1	05/10/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-1	08/10/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-1	11/15/07	Dry - Not Sampled								
MW-1	02/28/08	Dry - Not Sampled								
MW-1	05/28/08	Dry - Not Sampled								
MW-1	08/20/08	Dry - Not Sampled								
MW-1	11/07/08	Dry - Not Sampled								
MW-1	02/09/09	Dry - Not Sampled								
MW-1	05/14/09	Dry - Not Sampled								
MW-1	08/12/09	Dry - Not Sampled								
MW-1	11/11/09	Dry - Not Sampled								
MW-2	01/24/02	**0.368**	<0.001	0.0537	0.065	0.0125	NA	NA	NA	NA
MW-2	04/12/02	**0.127**	<0.001	0.0254	0.0283	0.00833	NA	NA	NA	NA
MW-2	07/10/02	**0.0674**	0.00188	0.0176	0.0154	0.00389	NA	NA	NA	NA
MW-2	04/15/03	**0.229**	0.001	0.0588	0.0443	0.0124	NA	NA	NA	NA
MW-2	07/14/03	**0.185**	<0.001	0.0351	0.0295	0.00823	NA	NA	NA	NA
MW-2	04/20/04	**0.125**	<0.001	0.0341	0.0567	0.0153	NA	NA	NA	NA
MW-2	07/14/04	**0.209**	0.00616	0.047	0.0212	0.0154	NA	NA	NA	NA
MW-2	09/14/04	**0.125**	0.00276	0.0358	0.0106	0.00701	NA	NA	NA	NA
MW-2	12/21/04	**0.267**	0.00124	0.0357	<0.002	0.00109	NA	NA	NA	NA
MW-2	03/21/05	**0.186**	<0.001	0.0136	0.00541	0.00199	NA	NA	NA	NA
MW-2	05/17/05	**0.342**	0.001	0.0281	0.0334	0.0147	NA	NA	NA	NA
MW-2	08/15/05	**0.145**	0.00718	0.0187	0.02	0.00849	NA	NA	NA	NA
MW-2	11/18/05	**0.413**	0.00207	0.114	0.122	0.0349	NA	NA	NA	NA
MW-2	02/16/06	**0.433**	<0.001	0.146	0.161	0.00465	NA	NA	NA	NA
MW-2	05/22/06	**0.694**	0.162	0.172	0.206	0.0182	NA	NA	NA	NA
MW-2	08/07/06	**0.664**	0.00604	0.0496	0.0816	0.00811	NA	NA	NA	NA
MW-2	11/21/06	**0.461**	<0.005	0.0638	0.0614	<0.005	NA	NA	NA	NA
MW-2	02/22/07	**0.292**	<0.001	0.0437	0.0337		NA	NA	NA	NA
MW-2	05/10/07	**0.19**	0.0049	0.0341	0.0233		NA	NA	NA	NA
MW-2	08/10/07	**0.0881**	0.0012	0.0295	0.0229	<0.001	NA	NA	NA	NA
MW-2	11/15/07	**0.0615**	<0.002	0.0031	0.0026	<0.001	NA	NA	NA	NA
MW-2	02/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-2	05/28/08	**0.0949**	<0.002	0.006	0.0029	<0.001	NA	NA	NA	NA
MW-2	08/20/08	**0.1011**	<0.002	0.005	0.0027	0.0021	NA	NA	NA	NA
MW-2	11/07/08	**0.0462**	<0.002	0.0044	0.0029	<0.001	NA	NA	NA	NA
MW-2	02/09/09	**0.0908**	<0.002	0.0019	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-2	05/14/09	**0.7167**	<0.02	<0.01	<0.02	<0.01	NA	NA	NA	NA
MW-2	11/11/09	**0.0476**	<0.002	0.0068	0.0047	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF BTEX AND TPH IN GROUNDWATER

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All concentrations are reported in mg/L

Monitor Well Identification	Date	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene	Gasoline TPH C_6-C_{12}	Diesel TPH $>C_{12}$-C_{28}	Oil TPH $>C_{28}$-C_{35}	Total TPH C_6-C_{35}
MW-3	09/13/01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003	<0.003	NA	<0.006
MW-3	01/24/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	04/12/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	07/10/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	04/15/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	07/14/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	04/20/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	07/14/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	09/14/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	12/21/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	02/22/07	<0.001	<0.001	<0.001	<0.002		NA	NA	NA	NA
MW-3	05/10/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-3	08/10/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	11/15/07	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	02/28/08	**0.0193**	<0.002	0.0032	0.0023	<0.001	<1.5	<1.5	<1.5	<1.5
MW-3	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	08/20/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	11/07/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	0209/09	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-3	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-4	01/24/02	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	04/12/02	**0.48**	0.361	0.199	0.334	0.216	NA	NA	NA	NA
MW-4	07/10/02	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	04/15/03	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	07/14/03	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	04/20/04	**3.21**	**2.31**	**0.845**	1.87	1.03	NA	NA	NA	NA
MW-4	07/14/04	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	09/14/04	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	12/21/04	**0.829**	0.0066	0.173	0.176	0.0595	NA	NA	NA	NA
MW-4	03/21/05	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	05/17/05	Not Sampled due to the presence of Phase Separated Hydrocarbons								
MW-4	08/15/05	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	11/18/05	**2.62**	<0.002	0.379	0.711	0.0365	NA	NA	NA	NA
MW-4	02/16/06	**2.1**	<0.001	0.414	0.806	<0.001	NA	NA	NA	NA
MW-4	05/22/06	**2.11**	<0.005	0.372	0.663	<0.005	NA	NA	NA	NA
MW-4	08/07/06	**2.84**	0.00604	0.049	0.0816	0.00811	NA	NA	NA	NA
MW-4	11/21/06	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	02/22/07	**1.42**	<0.001	0.291	0.443		NA	NA	NA	NA
MW-4	05/10/07	**1.21**	<0.001	0.267	0.382		NA	NA	NA	NA
MW-4	08/10/07	**1.227**	0.0075	0.2418	0.3456	<0.005	NA	NA	NA	NA
MW-4	11/15/07	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	02/28/08	0.0073	<0.002	0.0026	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-4	05/28/08	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	08/20/08	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	11/07/08	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-4	02/09/09	**0.7677**	<0.002	0.059	0.0764	0.0026	5.52	2.3	<1.5	7.82
MW-4	05/14/09	**0.492**	<0.001	0.0312	0.0476	<0.005	NA	NA	NA	NA
MW-4	08/12/09	**1.357**	<0.04	0.1026	0.1532	<0.02	NA	NA	NA	NA
MW-4	11/11/09	Not Sampled due to the Presence of Phase Separated Hydrocarbons								

Table 2

CONCENTRATIONS OF BTEX AND TPH IN GROUNDWATER

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All concentrations are reported in mg/L

Monitor Well Identification	Date	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene	Gasoline TPH C_6-C_{12}	Diesel TPH $>C_{12}$-C_{28}	Oil TPH $>C_{28}$-C_{35}	Total TPH C_6-C_{35}
MW-5	09/13/01	**0.535**	0.075	0.084	0.438	0.04	0.00634	0.00302	NA	0.00936
MW-5	01/24/02	**0.28**	0.00319	0.107	0.00828	0.00565	NA	NA	NA	NA
MW-5	04/12/02	**0.303**	0.00948	0.129	0.00816	0.0132	NA	NA	NA	NA
MW-5	04/15/03	**0.129**	0.00354	0.0366	0.00352	0.00238	NA	NA	NA	NA
MW-5	07/14/03	**0.0814**	<0.001	0.0344	0.00141	<0.001	NA	NA	NA	NA
MW-5	04/20/04	**0.482**	0.00237	0.101	0.0601	0.0313	NA	NA	NA	NA
MW-5	07/14/04	**0.0708**	<0.001	0.0486	0.0046	0.00207	NA	NA	NA	NA
MW-5	09/14/04	**0.118**	0.00135	0.0588	0.0045	0.00161	NA	NA	NA	NA
MW-5	12/21/04	**0.204**	<0.001	0.0667	<0.002	<0.001	NA	NA	NA	NA
MW-5	03/21/05	**0.0308**	<0.001	0.0171	0.00367	<0.001	NA	NA	NA	NA
MW-5	05/17/05	**0.00966**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-5	08/15/05	**0.0138**	0.00173	0.00438	<0.002	<0.001	NA	NA	NA	NA
MW-5	11/18/05	**0.0107**	0.00115	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-5	02/16/06	0.00747	<0.001	0.00293	<0.002	<0.001	NA	NA	NA	NA
MW-5	05/22/06	0.00318	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-5	08/07/06	**0.0964**	0.00763	0.0028	<0.002	0.00133	NA	NA	NA	NA
MW-5	11/21/06	**0.0883**	0.0241	0.00988	0.013	0.00727	NA	NA	NA	NA
MW-5	02/22/07	**0.0443**	<0.001	0.0289	0.0123		NA	NA	NA	NA
MW-5	05/10/07	**0.0462**	<0.001	0.0357	0.0159		NA	NA	NA	NA
MW-5	08/10/07	**0.0266**	<0.005	0.0141	<0.01	<0.005	NA	NA	NA	NA
MW-5	11/15/07	**0.011**	<0.002	0.0036	<0.002	<0.001	NA	NA	NA	NA
MW-5	02/28/08	**0.5605**	0.0192	0.1301	0.2109	0.007	4.55	3.33	<1.52	7.88
MW-5	05/28/08	**0.0112**	<0.002	0.0021	<0.002	<0.001	NA	NA	NA	NA
MW-5	08/20/08	0.0048	<0.002	0.0017	<0.002	0.0013	NA	NA	NA	NA
MW-5	11/07/08	**0.035**	<0.002	0.0081	<0.002	<0.001	NA	NA	NA	NA
MW-5	02/09/09	**0.093**	<0.002	0.0045	0.0044	0.0012	<1.5	<1.5	<1.5	<1.5
MW-5	05/14/09	**0.1093**	<0.002	0.0043	<0.002	<0.001	NA	NA	NA	NA
MW-5	08/12/09	**0.057**	<0.002	0.0041	<0.002	0.002	NA	NA	NA	NA
MW-5	11/11/09	**0.1185**	<0.01	0.0248	<0.01	<0.005	NA	NA	NA	NA
MW-6	01/24/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	04/12/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	07/10/02	0.00153	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	04/15/03	0.00274	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	07/14/03	0.00254	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	04/20/04	0.00106	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	07/14/04	0.00195	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	09/14/04	**0.01**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	12/21/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	03/21/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	05/17/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/18/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/21/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/22/07	<0.001	<0.001	<0.001	<0.002		NA	NA	NA	NA
MW-6	05/10/07	**0.0238**	<0.001	0.014	0.0076		NA	NA	NA	NA
MW-6	08/10/07	**0.0152**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/15/07	**0.0149**	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/28/08	**0.0444**	<0.002	0.0299	0.0374	<0.001	1.72	<1.5	<1.5	1.72
MW-6	05/28/08	0.0021	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	08/20/08	**0.0121**	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/07/08	0.0069	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/09/09	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-6	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	08/12/09	0.008	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/11/09	0.0072	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF BTEX AND TPH IN GROUNDWATER

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All concentrations are reported in mg/L

Monitor Well Identification	Date	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene	Gasoline TPH C_6-C_{12}	Diesel TPH $>C_{12}$-C_{28}	Oil TPH $>C_{28}$-C_{35}	Total TPH C_6-C_{35}
MW-7	07/14/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	09/14/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	12/21/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	03/21/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	05/17/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	11/18/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	11/21/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	02/22/07	<0.001	<0.001	<0.001	<0.002		NA	NA	NA	NA
MW-7	05/10/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-7	08/10/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	11/15/07	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	02/28/08	**0.0486**	<0.002	0.0599	0.0437	0.0546	1.89	<1.5	<1.5	1.89
MW-7	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	08/20/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	11/07/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	02/09/09	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-7	05/14/09	0.0013	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	07/14/04	**0.575**	0.141	0.0884	0.0762	0.0868	NA	NA	NA	NA
MW-8	09/14/04	**0.482**	0.0356	0.106	0.0582	0.0551	NA	NA	NA	NA
MW-8	12/21/04	**4.22**	0.113	0.695	0.208	0.075	NA	NA	NA	NA
MW-8	03/21/05	**3.41**	<0.01	0.452	0.133	0.0152	NA	NA	NA	NA
MW-8	05/17/05	**2.29**	<0.001	0.115	0.0323	0.00568	NA	NA	NA	NA
MW-8	08/15/05	**1.21**	<0.001	0.0749	0.0326	0.00149	NA	NA	NA	NA
MW-8	11/18/05	**0.67**	<0.001	0.0299	0.0165	<0.001	NA	NA	NA	NA
MW-8	02/16/06	**0.243**	<0.001	0.0359	0.0239	<0.001	NA	NA	NA	NA
MW-8	05/22/06	**0.0974**	<0.001	0.0278	0.022	<0.001	NA	NA	NA	NA
MW-8	08/07/06	**0.133**	<0.001	0.00758	0.00497	<0.001	NA	NA	NA	NA
MW-8	02/22/07	**0.118**	<0.001	0.0384	0.0429		NA	NA	NA	NA
MW-8	05/10/07	**0.209**	<0.001	0.0473	0.0529		NA	NA	NA	NA
MW-8	08/10/07	**0.05**	0.0012	0.0254	0.0298	<0.001	NA	NA	NA	NA
MW-8	11/15/07	**0.0186**	<0.002	0.0079	0.0096	<0.001	NA	NA	NA	NA
MW-8	02/28/08	0.0056	<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 the Presence of Phase Separated Hydrocarbons								
MW-8	08/20/08	Not Sampled due to the Presence of Phase Separated Hydrocarbons								
MW-8	11/07/08	**0.012**	<0.002	0.0043	0.0054	<0.001	NA	NA	NA	NA
MW-8	02/09/09	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-8	05/14/09	**0.0121**	<0.002	0.0044	0.005	<0.001	NA	NA	NA	NA
MW-8	08/12/09	**0.0138**	<0.002	0.0057	0.0057	<0.001	NA	NA	NA	NA
MW-8	11/11/09	0.0085	<0.002	0.0024	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF BTEX AND TPH IN GROUNDWATER

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All concentrations are reported in mg/L

Monitor Well Identification	Date	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene	Gasoline TPH C_6-C_{12}	Diesel TPH $>C_{12}$-C_{28}	Oil TPH $>C_{28}$-C_{35}	Total TPH C_6-C_{35}
MW-9	07/14/04	**0.0275**	0.0109	0.487	0.305	0.319	NA	NA	NA	NA
MW-9	09/14/04	**0.15**	0.00215	0.225	0.029	0.119	NA	NA	NA	NA
MW-9	12/21/04	<0.001	<0.001	0.0335	0.00261	0.0204	NA	NA	NA	NA
MW-9	03/21/05	0.00925	<0.001	0.0151	0.00961	0.0209	NA	NA	NA	NA
MW-9	05/17/05	0.00498	<0.001	0.0148	0.0145	0.0311	NA	NA	NA	NA
MW-9	08/15/05	**0.0228**	<0.001	0.063	0.0208	0.0357	NA	NA	NA	NA
MW-9	11/18/05	0.00399	<0.001	0.0281	0.0276	0.0607	NA	NA	NA	NA
MW-9	02/16/06	0.00881	<0.001	0.0327	0.0324	0.0727	NA	NA	NA	NA
MW-9	05/22/06	0.00738	<0.001	0.0346	0.0381	0.0743	NA	NA	NA	NA
MW-9	08/07/06	0.00426	<0.001	0.0228	0.0249	0.0423	NA	NA	NA	NA
MW-9	11/21/06	0.00342	<0.001	0.0271	0.0232	0.048	NA	NA	NA	NA
MW-9	02/22/07	**0.0467**	<0.001	0.109	0.169		NA	NA	NA	NA
MW-9	05/10/07	**0.0607**	<0.001	0.0815	0.0532		NA	NA	NA	NA
MW-9	08/10/07	**<0.05**	<0.05	<0.05	<0.1	<0.05	NA	NA	NA	NA
MW-9	11/15/07	<0.001	0.0022	0.0012	<0.002	0.054	NA	NA	NA	NA
MW-9	02/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-9	05/28/08	**0.0581**	0.0023	0.0537	0.0355	0.0427	NA	NA	NA	NA
MW-9	08/20/08	**0.0512**	<0.002	0.07	0.0399	0.0499	NA	NA	NA	NA
MW-9	11/07/08	**0.0597**	<0.002	0.0353	0.022	0.0251	NA	NA	NA	NA
MW-9	02/09/09	**0.0509**	<0.002	0.0382	0.022	0.0472	1.57	<1.5	<1.5	1.57
MW-9	05/14/09	**0.0336**	<0.002	0.0381	0.0252	0.0305	NA	NA	NA	NA
MW-9	08/12/09	**0.0452**	<0.04	0.0568	<0.04	0.0288	NA	NA	NA	NA
MW-9	11/11/09	**0.0363**	<0.002	0.0403	0.0119	0.0089	NA	NA	NA	NA
MW-10	11/15/04	**1.25**	0.0967	0.14	0.109	0.0108	NA	NA	NA	NA
MW-10	03/21/05	**1.13**	0.0141	0.138	0.05	0.00484	NA	NA	NA	NA
MW-10	05/17/05	**2.17**	0.0144	0.194	0.147	0.00755	NA	NA	NA	NA
MW-10	08/15/05	**0.791**	<0.001	0.074	0.0437	<0.001	NA	NA	NA	NA
MW-10	11/18/05	**1.25**	<0.001	0.916	0.0597	<0.001	NA	NA	NA	NA
MW-10	02/16/06	**0.276**	<0.001	0.538	0.0859	<0.001	NA	NA	NA	NA
MW-10	05/22/06	**1.32**	<0.005	0.105	<0.01	<0.005	NA	NA	NA	NA
MW-10	08/07/06	**1.51**	<0.001	0.103	0.023	<0.001	NA	NA	NA	NA
MW-10	11/21/06	**0.222**	<0.005	0.0215	<0.01	<0.005	NA	NA	NA	NA
MW-10	02/22/07	**0.0791**	<0.001	0.0061	<0.002		NA	NA	NA	NA
MW-10	05/10/07	0.0023	<0.001	0.0072	<0.001		NA	NA	NA	NA
MW-10	08/10/07	**0.0883**	0.0011	0.0047	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/15/07	**0.0728**	0.0281	0.0279	0.005	0.094	NA	NA	NA	NA
MW-10	02/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-10	05/28/08	**0.0193**	<0.002	0.0023	<0.002	0.0024	NA	NA	NA	NA
MW-10	08/20/08	**0.1847**	0.0031	0.271	0.2018	0.1267	NA	NA	NA	NA
MW-10	11/07/08	0.0012	<0.002	<0.001	<0.002	0.0012	NA	NA	NA	NA
MW-10	02/09/09	<0.001	<0.002	0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-10	05/14/09	0.0028	<0.002	<0.001	<0.002	0.0013	NA	NA	NA	NA
MW-10	08/12/09	0.0014	<0.002	0.0021	<0.002	0.0016	NA	NA	NA	NA
MW-10	11/11/09	<0.001	<0.002	0.0022	<0.002	0.0011	NA	NA	NA	NA
MW-11	11/15/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	03/21/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	05/17/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/18/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	05/22/06	<0.001	<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	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	02/22/07	<0.001	<0.001	<0.001	<0.002		NA	NA	NA	NA
MW-11	05/10/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-11	08/10/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/15/07	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	02/28/08	0.005	<0.002	0.0019	0.0021	0.0025	<1.5	<1.5	<1.5	<1.5
MW-11	05/28/08	<0.001	<0.002	0.0012	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF BTEX AND TPH IN GROUNDWATER

Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

All concentrations are reported in mg/L

Monitor Well Identification	Date	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene	Gasoline TPH C_6-C_{12}	Diesel TPH $>C_{12}$-C_{28}	Oil TPH $>C_{28}$-C_{35}	Total TPH C_6-C_{35}
MW-11	08/20/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/07/08	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002
MW-11	02/09/09	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-11	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
NMWQCC Groundwater Standards		**0.01**	**0.75**	**0.75**	**Total Xylenes 0.62**		**NE**	**NE**	**NE**	**NE**

BTEX - Benzene, Toluene, Ethylbenzene, and Xylenes
TPH - Total Petroleum Hydrocarbons
mg/L - milligrams per liter
NMWQCC - New Mexico Water Quality Control Commission
Results in **BOLD** equal or exceed NMWQCC Groundwater Standards
NE - Not Established

Table 3

CONCENTRATIONS OF PAHs IN GROUNDWATER
Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

Concentrations are in mg/L

Sample Location	Sample Date	Naphthalene	Acenapthylene	Acenapthene	Flourene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]-anthracene	Chrysene	Benzo[b]-fluoranthene	Benzo[k]-fluoranthene	Benzo[a]-pyrene	Indeno[1,2,3-cd]-pyrene	Dibenzo[a,h]-anthracene	Benzo[g,h,i]-perylene	Dibenzo-furan	1-Methyl-naphthalene	2-Methyl-naphthalene
MW-1	09/13/01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
MW-1	07/14/04	<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-1	03/21/05	<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-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	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW-1	05/10/07	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	<0.0002	NA	NA
MW-1	02/28/08	Dry - Well Not Sampled																		
MW-1	02/09/09	Dry - Well Not Sampled																		
																			NA	NA
MW-2	07/14/04	0.0133	<0.00005	<0.00005	0.000061	0.000497	<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	03/21/05	0.00883	<0.00005	0.000054	0.000052	0.000325	<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	0.0128	<0.00005	<0.00005	0.000103	0.000352	<0.00005	<0.00005	<0.00005	<0.00005	0.000066	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW-2	05/10/07	0.00779	<0.0002	<0.0002	0.000229	<0.0002	0.00175	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	0.000442	NA	NA
MW-2	02/28/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-2	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005
MW-3	09/13/01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
MW-3	07/14/04	CONTAINER BROKEN IN TRANSIT																		
MW-3	09/14/04	<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-3	03/21/05	<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-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	05/10/07	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	<0.0002	NA	NA
MW-3	02/28/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005
MW-3	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005
MW-4	01/24/02	NOT SAMPLED DUE TO THE PRESENCE OF PHASE SEPARATED HYDROCARBONS																		
MW-4	07/10/02	NOT SAMPLED DUE TO THE PRESENCE OF PHASE SEPARATED HYDROCARBONS																		
MW-4	04/15/03	NOT SAMPLED DUE TO THE PRESENCE OF PHASE SEPARATED HYDROCARBONS																		
MW-4	07/14/03	NOT SAMPLED DUE TO THE PRESENCE OF PHASE SEPARATED HYDROCARBONS																		
MW-4	07/14/04	NOT SAMPLED DUE TO THE PRESENCE OF PHASE SEPARATED HYDROCARBONS																		
MW-4	09/14/04	NOT SAMPLED DUE TO THE PRESENCE OF PHASE SEPARATED HYDROCARBONS																		
MW-4	03/21/05	NOT SAMPLED DUE TO THE PRESENCE OF PHASE SEPARATED HYDROCARBONS																		
MW-4	02/16/06	**0.113**	<0.00005	<0.00005	0.000855	0.00916	<0.00005	<0.00005	<0.00005	<0.00005	0.00252	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW-4	05/10/07	**0.0659**	<0.0002	<0.0002	0.000737	<0.0002	0.00596	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	0.00112	NA	NA
MW-4	02/28/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-4	02/09/09	0.027	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	0.014	0.012
MW-5	09/13/01	**0.049**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
MW-5	07/14/04	CONTAINER BROKE IN TRANSIT																		
MW-5	09/14/04	<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-5	03/21/05	CONTAINER BROKE IN TRANSIT																		
MW-5	02/16/06	0.000415	<0.00005	0.000059	0.000147	0.000309	<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-5	05/10/07	0.00218	<0.0002	<0.0002	0.000496	<0.0002	0.00075	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	0.00112	NA	NA
MW-5	02/28/08	**0.051**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-5	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005
MW-6	07/14/04	0.00122	<0.00005	<0.00005	<0.00005	0.000085	<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	03/21/05	0.000089	<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	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW-6	05/10/07	0.00095	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	<0.0002	NA	NA
MW-6	02/28/08	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	0.006	<0.005
MW-6	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005
MW-7	07/14/04	0.000261	<0.00005	<0.00005	<0.00005	0.000293	<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	03/21/05	0.000448	<0.00005	<0.00005	<0.00005	0.000222	<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	0.000057	<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	05/10/07	0.000606	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	<0.0002	NA	NA
MW-7	02/28/08	0.017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	0.011	0.005
MW-7	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005
MW-8	07/14/04	0.00494	0.000064	<0.00005	0.000127	0.00143	<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	03/21/05	0.0057	<0.00005	<0.00005	<0.00005	0.00283	<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	0.00529	0.00007	<0.00005	<0.00005	0.00282	<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	05/10/07	0.0071	<0.0002	<0.0002	0.000229	<0.0002	0.00118	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	0.00047	NA	NA
MW-8	02/28/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-8	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005

Table 3

CONCENTRATIONS OF PAHs IN GROUNDWATER
Livingston Line - Bob McCasland Pipeline Leak
Lea County, New Mexico
NMOCD File Number: 1R-0395
Plains Pipeline, L. P. SRS Number 2001-11226
Terracon Project Number A4077007

Concentrations are in mg/L

Sample Location	Sample Date	Naphthalene	Acenapthylene	Acenapthene	Flourene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]-anthracene	Chrysene	Benzo[b]-fluoranthene	Benzo[k]-fluoranthene	Benzo[a]-pyrene	Indeno[1,2,3-cd]-pyrene	Dibenzo[a,h]-anthracene	Benzo[g,h,i]-perylene	Dibenzo-furan	1-Methyl-naphthalene	2-Methyl-naphthalene
MW-9	07/14/04	0.00798	<0.00005	0.000089	0.000306	0.00008	<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	03/21/05	0.00126	<0.00005	<0.00005	0.000076	0.000068	<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	02/16/06	0.0107	<0.00005	<0.00005	0.000139	0.000125	<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	05/10/07	0.00243	<0.0002	<0.0002	<0.0002	<0.0002	0.000222	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	0.00132	NA	NA
MW-9	02/28/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-9	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005
MW-10	03/21/05	0.00738	0.000051	0.000083	0.000292	0.000654	<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	CONTAINER BROKE IN TRANSIT																		
MW-10	05/22/06	0.000174	<0.00005	<0.00005	0.00009	0.000202	<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	05/10/07	0.000688	<0.0002	<0.0002	0.000388	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	0.00108	NA	NA
MW-10	02/28/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-10	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005
MW-11	03/21/05	<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-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	05/10/07	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0004	<0.0002	<0.0002	<0.0002	NA	NA
MW-11	02/28/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005
MW-11	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005
NMWQCC Groundwater		**0.03**	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	**0.0007**	NE	NE	NE	NE	NE	NE

PAHs - Polycyclic Aromatic Hydrocarbons
mg/L - milligrams per liter
Values in **BOLD** equal or exceed NMWQCC Groundwater Standards

APPENDIX C

Laboratory Data Sheets

Analytical Report 324636

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Line

2001-11226

18-FEB-09

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-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 - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

18-FEB-09

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

Reference: XENCO Report No: **324636**
Livingston Line
Project Address:

Jason Henry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 324636. 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. 324636 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 324636

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Line

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-7	W	Feb-09-09 11:18		324636-001
MW-3	W	Feb-09-09 11:49		324636-002
MW-6	W	Feb-09-09 12:17		324636-003
MW-9	W	Feb-09-09 12:47		324636-004
MW-11	W	Feb-09-09 13:11		324636-005
MW-10	W	Feb-09-09 13:46		324636-006
MW-5	W	Feb-09-09 14:12		324636-007
MW-2	W	Feb-09-09 14:42		324636-008
MW-8	W	Feb-09-09 15:17		324636-009
MW-4	W	Feb-09-09 15:39		324636-010

Certificate of Analysis Summary 324636
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

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

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 18-FEB-09
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	324636-001		324636-002		324636-003		324636-004	
	Field Id:	MW-7		MW-3		MW-6		MW-9	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-09-09 11:18		Feb-09-09 11:49		Feb-09-09 12:17		Feb-09-09 12:47	
BTEX by EPA 8021B	*Extracted:*	Feb-14-09 12:45		Feb-14-09 13:30		Feb-14-09 13:30		Feb-14-09 12:45	
	Analyzed:	Feb-16-09 17:37		Feb-15-09 03:42		Feb-15-09 04:02		Feb-16-09 17:59	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	0.0509	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	0.0382	0.0010
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	0.0252	0.0020
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	0.0220	0.0010
Total Xylenes		ND	0.0010	ND	0.0010	ND	0.0010	0.0472	0.0010
Total BTEX		ND	0.0010	ND	0.0010	ND	0.0010	0.1363	0.0010
SVOA PAHs List by EPA 8270C	*Extracted:*	Feb-12-09 13:10		Feb-12-09 13:15		Feb-12-09 13:20		Feb-12-09 13:25	
	Analyzed:	Feb-12-09 15:50		Feb-12-09 16:10		Feb-12-09 16:30		Feb-12-09 16:50	
	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	0.008	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 324636
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

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

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 18-FEB-09
Project Manager: Brent Barron, II

Analysis Requested									
	Lab Id:	324636-001		324636-002		324636-003		324636-004	
	Field Id:	MW-7		MW-3		MW-6		MW-9	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-09-09 11:18		Feb-09-09 11:49		Feb-09-09 12:17		Feb-09-09 12:47	
TPH By SW8015 Mod	***Extracted:***	Feb-15-09 14:52		Feb-15-09 14:52		Feb-15-09 14:52		Feb-15-09 14:52	
	Analyzed:	Feb-16-09 06:28		Feb-16-09 07:13		Feb-16-09 07:36		Feb-16-09 07:58	
	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	1.57	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	1.50	ND	1.50	ND	1.50	1.57	1.50

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 324636
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

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

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 18-FEB-09
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	324636-005		324636-006		324636-007		324636-008	
	Field Id:	MW-11		MW-10		MW-5		MW-2	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-09-09 13:11		Feb-09-09 13:46		Feb-09-09 14:12		Feb-09-09 14:42	
BTEX by EPA 8021B	*Extracted:*	Feb-14-09 12:45		Feb-14-09 12:45		Feb-14-09 12:45		Feb-14-09 12:45	
	Analyzed:	Feb-16-09 18:19		Feb-16-09 18:40		Feb-16-09 19:00		Feb-16-09 19:21	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	0.0930	0.0010	0.0908	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		ND	0.0010	0.0010	0.0010	0.0045	0.0010	0.0019	0.0010
m,p-Xylenes		ND	0.0020	ND	0.0020	0.0044	0.0020	ND	0.0020
o-Xylene		ND	0.0010	ND	0.0010	0.0012	0.0010	ND	0.0010
Total Xylenes		ND	0.0010	ND	0.0010	0.0056	0.0010	ND	0.0010
Total BTEX		ND	0.0010	0.001	0.0010	0.1031	0.0010	0.0927	0.0010
SVOA PAHs List by EPA 8270C	*Extracted:*	Feb-12-09 13:30		Feb-12-09 13:35		Feb-12-09 13:40		Feb-12-09 13:45	
	Analyzed:	Feb-12-09 17:11		Feb-12-09 17:31		Feb-12-09 17:51		Feb-12-09 18:12	
	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 324636
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

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

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 18-FEB-09
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	324636-005		324636-006		324636-007		324636-008	
	Field Id:	MW-11		MW-10		MW-5		MW-2	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-09-09 13:11		Feb-09-09 13:46		Feb-09-09 14:12		Feb-09-09 14:42	
TPH By SW8015 Mod	*Extracted:*	Feb-15-09 14:52		Feb-15-09 14:52		Feb-15-09 14:52		Feb-15-09 14:30	
	Analyzed:	Feb-16-09 08:21		Feb-16-09 08:43		Feb-16-09 09:06		Feb-15-09 18:07	
	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	1.50	ND	1.50	ND	1.50	ND	1.50

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 324636
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

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

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 18-FEB-09
Project Manager: Brent Barron, II

Analysis Requested								
	Lab Id:	324636-009		324636-010				
	Field Id:	MW-8		MW-4				
	Depth:							
	Matrix:	WATER		WATER				
	Sampled:	Feb-09-09 15:17		Feb-09-09 15:39				
BTEX by EPA 8021B	*Extracted:*	Feb-14-09 12:45		Feb-14-09 12:45				
	Analyzed:	Feb-16-09 19:41		Feb-16-09 20:02				
	Units/RL:	mg/L	RL	mg/L	RL			
Benzene		ND	0.0010	0.7677 D	0.0100			
Toluene		ND	0.0020	ND	0.0020			
Ethylbenzene		ND	0.0010	0.0590	0.0010			
m,p-Xylenes		ND	0.0020	0.0764	0.0020			
o-Xylene		ND	0.0010	0.0026	0.0010			
Total Xylenes		ND	0.0010	0.0790	0.0010			
Total BTEX		ND	0.0010	0.9057	0.0010			
SVOA PAHs List by EPA 8270C	*Extracted:*	Feb-12-09 13:50		Feb-12-09 13:55				
	Analyzed:	Feb-12-09 18:32		Feb-12-09 15:30				
	Units/RL:	mg/L	RL	mg/L	RL			
Acenaphthene		ND	0.005	ND	0.005			
Acenaphthylene		ND	0.005	ND	0.005			
Anthracene		ND	0.005	ND	0.005			
Benzo(a)anthracene		ND	0.005	ND	0.005			
Benzo(a)pyrene		ND	0.005	ND	0.005			
Benzo(b)fluoranthene		ND	0.005	ND	0.005			
Benzo(k)fluoranthene		ND	0.005	ND	0.005			
Benzo(g,h,i)perylene		ND	0.005	ND	0.005			
Chrysene		ND	0.005	ND	0.005			
Dibenz(a,h)Anthracene		ND	0.005	ND	0.005			
Fluoranthene		ND	0.005	ND	0.005			
Fluorene		ND	0.005	ND	0.005			
Indeno(1,2,3-c,d)Pyrene		ND	0.005	ND	0.005			
1-Methylnaphthalene		ND	0.005	0.014	0.005			
2-Methylnaphthalene		ND	0.005	0.012	0.005			
Naphthalene		ND	0.005	0.027	0.005			
Phenanthrene		ND	0.005	ND	0.005			
Pyrene		ND	0.005	ND	0.005			

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 324636
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

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

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 18-FEB-09
Project Manager: Brent Barron, II

Analysis Requested								
	Lab Id:	324636-009		324636-010			
	Field Id:	MW-8		MW-4			
	Depth:						
	Matrix:	WATER		WATER			
	Sampled:	Feb-09-09 15:17		Feb-09-09 15:39			
TPH By SW8015 Mod	***Extracted:***	Feb-15-09 14:30		Feb-15-09 14:30			
	Analyzed:	Feb-15-09 18:31		Feb-15-09 18:55			
	Units/RL:	mg/L	RL	mg/L	RL		
C6-C12 Gasoline Range Hydrocarbons		ND	1.50	5.52	1.50		
C12-C28 Diesel Range Hydrocarbons		ND	1.50	2.30	1.50		
C28-C35 Oil Range Hydrocarbons		ND	1.50	ND	1.50		
Total TPH		ND	1.50	7.82	1.50		

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.

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

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749628 **Sample:** 324459-001 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	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 749628 **Sample:** 324459-001 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	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Lab Batch #: 749628 **Sample:** 324636-002 / 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	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 749628 **Sample:** 324636-003 / 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	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 749628 **Sample:** 524786-1-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	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	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 Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749628 **Sample:** 524786-1-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	0.0292	0.0300	97	80-120	

Lab Batch #: 749628 **Sample:** 524786-1-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	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 749744 **Sample:** 324636-001 / 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	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 749744 **Sample:** 324636-001 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	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 749744 **Sample:** 324636-001 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	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	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 Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749744 **Sample:** 324636-004 / 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	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 749744 **Sample:** 324636-005 / 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	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 749744 **Sample:** 324636-006 / 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	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0249	0.0300	83	80-120	

Lab Batch #: 749744 **Sample:** 324636-007 / 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	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0243	0.0300	81	80-120	

Lab Batch #: 749744 **Sample:** 324636-008 / 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	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	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 Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749744 **Sample:** 324636-009 / 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	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 749744 **Sample:** 324636-010 / 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	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0182	0.0300	61	80-120	**

Lab Batch #: 749744 **Sample:** 524845-1-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	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 749744 **Sample:** 524845-1-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	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 749744 **Sample:** 524845-1-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	0.0279	0.0300	93	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 Line

Work Orders : 324636, **Project ID:** 2001-11226

Lab Batch #: 749934 **Sample:** 324636-010 / DL **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	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 749934 **Sample:** 324982-004 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	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 749934 **Sample:** 324982-004 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	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 749934 **Sample:** 524953-1-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	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 749934 **Sample:** 524953-1-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	0.0288	0.0300	96	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 Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749934 **Sample:** 524953-1-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	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 749513 **Sample:** 324636-001 / 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	0.039	0.050	78	43-116	
2-Fluorophenol	ND	0.050	0	21-100	**
Nitrobenzene-d5	0.035	0.050	70	35-114	
Phenol-d6	ND	0.050	0	10-94	**
Terphenyl-D14	0.044	0.050	88	33-141	
2,4,6-Tribromophenol	ND	0.050	0	10-123	**

Lab Batch #: 749513 **Sample:** 324636-002 / 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	0.040	0.050	80	43-116	
2-Fluorophenol	ND	0.050	0	21-100	**
Nitrobenzene-d5	0.034	0.050	68	35-114	
Phenol-d6	ND	0.050	0	10-94	**
Terphenyl-D14	0.043	0.050	86	33-141	
2,4,6-Tribromophenol	ND	0.050	0	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 Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749513 **Sample:** 324636-003 / 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	0.030	0.050	60	43-116	
2-Fluorophenol	ND	0.050	0	21-100	**
Nitrobenzene-d5	0.024	0.050	48	35-114	
Phenol-d6	ND	0.050	0	10-94	**
Terphenyl-D14	0.040	0.050	80	33-141	
2,4,6-Tribromophenol	ND	0.050	0	10-123	**

Lab Batch #: 749513 **Sample:** 324636-004 / 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	0.037	0.050	74	43-116	
2-Fluorophenol	ND	0.050	0	21-100	**
Nitrobenzene-d5	0.034	0.050	68	35-114	
Phenol-d6	ND	0.050	0	10-94	**
Terphenyl-D14	0.038	0.050	76	33-141	
2,4,6-Tribromophenol	ND	0.050	0	10-123	**

Lab Batch #: 749513 **Sample:** 324636-005 / 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	0.037	0.050	74	43-116	
2-Fluorophenol	ND	0.050	0	21-100	**
Nitrobenzene-d5	0.030	0.050	60	35-114	
Phenol-d6	ND	0.050	0	10-94	**
Terphenyl-D14	0.043	0.050	86	33-141	
2,4,6-Tribromophenol	ND	0.050	0	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 Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749513 **Sample:** 324636-006 / 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	0.038	0.050	76	43-116	
2-Fluorophenol	ND	0.050	0	21-100	**
Nitrobenzene-d5	0.033	0.050	66	35-114	
Phenol-d6	ND	0.050	0	10-94	**
Terphenyl-D14	0.040	0.050	80	33-141	
2,4,6-Tribromophenol	ND	0.050	0	10-123	**

Lab Batch #: 749513 **Sample:** 324636-007 / 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	0.021	0.050	42	43-116	**
2-Fluorophenol	ND	0.050	0	21-100	**
Nitrobenzene-d5	0.018	0.050	36	35-114	
Phenol-d6	ND	0.050	0	10-94	**
Terphenyl-D14	0.022	0.050	44	33-141	
2,4,6-Tribromophenol	ND	0.050	0	10-123	**

Lab Batch #: 749513 **Sample:** 324636-008 / 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	0.035	0.050	70	43-116	
2-Fluorophenol	ND	0.050	0	21-100	**
Nitrobenzene-d5	0.028	0.050	56	35-114	
Phenol-d6	ND	0.050	0	10-94	**
Terphenyl-D14	0.042	0.050	84	33-141	
2,4,6-Tribromophenol	ND	0.050	0	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 Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749513 **Sample:** 324636-009 / 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	0.039	0.050	78	43-116	
2-Fluorophenol	ND	0.050	0	21-100	**
Nitrobenzene-d5	0.035	0.050	70	35-114	
Phenol-d6	ND	0.050	0	10-94	**
Terphenyl-D14	0.041	0.050	82	33-141	
2,4,6-Tribromophenol	ND	0.050	0	10-123	**

Lab Batch #: 749513 **Sample:** 324636-010 / 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	0.037	0.050	74	43-116	
2-Fluorophenol	ND	0.050	0	21-100	**
Nitrobenzene-d5	0.030	0.050	60	35-114	
Phenol-d6	ND	0.050	0	10-94	**
Terphenyl-D14	0.038	0.050	76	33-141	
2,4,6-Tribromophenol	ND	0.050	0	10-123	**

Lab Batch #: 749513 **Sample:** 524583-1-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	0.032	0.050	64	43-116	
2-Fluorophenol	0.014	0.050	28	21-100	
Nitrobenzene-d5	0.028	0.050	56	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.041	0.050	82	33-141	
2,4,6-Tribromophenol	0.042	0.050	84	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 Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749513 **Sample:** 524583-1-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	0.023	0.050	46	21-100	
Nitrobenzene-d5	0.039	0.050	78	35-114	
Phenol-d6	0.014	0.050	28	10-94	
Terphenyl-D14	0.049	0.050	98	33-141	
2,4,6-Tribromophenol	0.051	0.050	102	10-123	

Lab Batch #: 749513 **Sample:** 524583-1-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	0.036	0.050	72	43-116	
2-Fluorophenol	0.018	0.050	36	21-100	
Nitrobenzene-d5	0.034	0.050	68	35-114	
Phenol-d6	0.011	0.050	22	10-94	
Terphenyl-D14	0.040	0.050	80	33-141	
2,4,6-Tribromophenol	0.040	0.050	80	10-123	

Lab Batch #: 749642 **Sample:** 324636-001 / 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	9.27	10.0	93	70-135	
o-Terphenyl	4.49	5.00	90	70-135	

Lab Batch #: 749642 **Sample:** 324636-002 / 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	9.49	10.0	95	70-135	
o-Terphenyl	4.58	5.00	92	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 Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749642 **Sample:** 324636-003 / 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	9.04	10.0	90	70-135	
o-Terphenyl	4.36	5.00	87	70-135	

Lab Batch #: 749642 **Sample:** 324636-004 / 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	9.54	10.0	95	70-135	
o-Terphenyl	4.57	5.00	91	70-135	

Lab Batch #: 749642 **Sample:** 324636-005 / 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	9.08	10.0	91	70-135	
o-Terphenyl	4.39	5.00	88	70-135	

Lab Batch #: 749642 **Sample:** 324636-006 / 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	9.40	10.0	94	70-135	
o-Terphenyl	4.49	5.00	90	70-135	

Lab Batch #: 749642 **Sample:** 324636-007 / 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	10.1	10.0	101	70-135	
o-Terphenyl	4.84	5.00	97	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 Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749642 **Sample:** 524797-1-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	12.8	10.0	128	70-135	
o-Terphenyl	6.25	5.00	125	70-135	

Lab Batch #: 749642 **Sample:** 524797-1-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	12.4	10.0	124	70-135	
o-Terphenyl	5.92	5.00	118	70-135	

Lab Batch #: 749642 **Sample:** 524797-1-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	13.0	10.0	130	70-135	
o-Terphenyl	6.21	5.00	124	70-135	

Lab Batch #: 749646 **Sample:** 324636-008 / 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	9.15	10.0	92	70-135	
o-Terphenyl	4.96	5.00	99	70-135	

Lab Batch #: 749646 **Sample:** 324636-008 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	12.6	10.0	126	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 Line

Work Orders : 324636,

Project ID: 2001-11226

Lab Batch #: 749646 **Sample:** 324636-009 / 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	8.99	10.0	90	70-135	
o-Terphenyl	4.85	5.00	97	70-135	

Lab Batch #: 749646 **Sample:** 324636-010 / 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	9.04	10.0	90	70-135	
o-Terphenyl	4.87	5.00	97	70-135	

Lab Batch #: 749646 **Sample:** 524802-1-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	12.6	10.0	126	70-135	
o-Terphenyl	5.84	5.00	117	70-135	

Lab Batch #: 749646 **Sample:** 524802-1-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	11.6	10.0	116	70-135	
o-Terphenyl	6.40	5.00	128	70-135	

Lab Batch #: 749646 **Sample:** 524802-1-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	12.6	10.0	126	70-135	
o-Terphenyl	5.81	5.00	116	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 Line

Work Order #: 324636 **Project ID:** 2001-11226

Analyst: ASA **Date Prepared:** 02/14/2009 **Date Analyzed:** 02/14/2009

Lab Batch ID: 749628 **Sample:** 524786-1-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	0.0954	95	0.1	0.0970	97	2	70-125	25	
Toluene	ND	0.1000	0.0961	96	0.1	0.0980	98	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0963	96	0.1	0.0985	99	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2000	100	0.2	0.2047	102	2	70-131	25	
o-Xylene	ND	0.1000	0.0996	100	0.1	0.1014	101	2	71-133	25	

Analyst: ASA **Date Prepared:** 02/14/2009 **Date Analyzed:** 02/16/2009

Lab Batch ID: 749744 **Sample:** 524845-1-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	0.0976	98	0.1	0.0991	99	2	70-125	25	
Toluene	ND	0.1000	0.0974	97	0.1	0.0986	99	1	70-125	25	
Ethylbenzene	ND	0.1000	0.0952	95	0.1	0.0970	97	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.1966	98	0.2	0.1989	99	1	70-131	25	
o-Xylene	ND	0.1000	0.0988	99	0.1	0.1000	100	1	71-133	25	

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

BS / BSD Recoveries

Project Name: Livingston Line

Work Order #: 324636
Analyst: ASA
Lab Batch ID: 749934
Sample: 524953-1-BKS
Batch #: 1
Units: mg/L

Project ID: 2001-11226
Date Prepared: 02/17/2009
Date Analyzed: 02/17/2009
Matrix: Water

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	0.0979	98	0.1	0.1041	104	6	70-125	25	
Toluene	ND	0.1000	0.0978	98	0.1	0.1048	105	7	70-125	25	
Ethylbenzene	ND	0.1000	0.0967	97	0.1	0.1041	104	7	71-129	25	
m,p-Xylenes	ND	0.2000	0.2004	100	0.2	0.2159	108	7	70-131	25	
o-Xylene	ND	0.1000	0.1000	100	0.1	0.1073	107	7	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 Line

Work Order #: 324636 **Project ID:** 2001-11226

Analyst: MAA **Date Prepared:** 02/12/2009 **Date Analyzed:** 02/12/2009

Lab Batch ID: 749513 **Sample:** 524583-1-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	0.040	80	0.05	0.042	84	5	54-114	25	
Acenaphthylene	ND	0.050	0.033	66	0.05	0.034	68	3	53-113	25	
Anthracene	ND	0.050	0.038	76	0.05	0.039	78	3	56-116	25	
Benzo(a)anthracene	ND	0.050	0.040	80	0.05	0.040	80	0	59-116	25	
Benzo(a)pyrene	ND	0.050	0.042	84	0.05	0.043	86	2	58-118	25	
Benzo(b)fluoranthene	ND	0.050	0.040	80	0.05	0.044	88	10	54-123	25	
Benzo(k)fluoranthene	ND	0.050	0.043	86	0.05	0.040	80	7	52-122	25	
Benzo(g,h,i)perylene	ND	0.050	0.036	72	0.05	0.035	70	3	47-129	25	
Chrysene	ND	0.050	0.039	78	0.05	0.038	76	3	58-116	25	
Dibenz(a,h)Anthracene	ND	0.050	0.039	78	0.05	0.039	78	0	46-131	25	
Fluoranthene	ND	0.050	0.040	80	0.05	0.040	80	0	55-120	25	
Fluorene	ND	0.050	0.046	92	0.05	0.048	96	4	56-114	25	
Indeno(1,2,3-c,d)Pyrene	ND	0.050	0.039	78	0.05	0.039	78	0	44-132	25	
1-Methylnaphthalene	ND	0.050	0.030	60	0.05	0.035	70	15	47-113	25	
2-Methylnaphthalene	ND	0.050	0.028	56	0.05	0.032	64	13	57-106	25	L
Naphthalene	ND	0.050	0.029	58	0.05	0.032	64	10	53-110	25	
Phenanthrene	ND	0.050	0.034	68	0.05	0.034	68	0	56-116	25	
Pyrene	ND	0.050	0.041	82	0.05	0.040	80	2	57-119	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 Line

Work Order #: 324636 **Project ID:** 2001-11226

Analyst: BHW **Date Prepared:** 02/15/2009 **Date Analyzed:** 02/16/2009

Lab Batch ID: 749642 **Sample:** 524797-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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
C6-C12 Gasoline Range Hydrocarbons	ND	100	100	100	100	102	102	2	70-135	25	
C12-C28 Diesel Range Hydrocarbons	ND	100	102	102	100	104	104	2	70-135	25	

Analyst: BHW **Date Prepared:** 02/15/2009 **Date Analyzed:** 02/15/2009

Lab Batch ID: 749646 **Sample:** 524802-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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
C6-C12 Gasoline Range Hydrocarbons	ND	100	117	117	100	118	118	1	70-135	25	
C12-C28 Diesel Range Hydrocarbons	ND	100	108	108	100	109	109	1	70-135	25	

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

Form 3 - MS Recoveries

Project Name: Livingston Line

Work Order #: 324636
Lab Batch #: 749646
Date Analyzed: 02/16/2009
QC- Sample ID: 324636-008 S
Reporting Units: mg/L

Project ID: 2001-11226
Date Prepared: 02/15/2009
Analyst: BHW
Batch #: 1
Matrix: Water

TPH by SW8015 Mod Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	100	130	130	70-135	
C12-C28 Diesel Range Hydrocarbons	ND	100	119	119	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 Line

Work Order # : 324636 **Project ID:** 2001-11226

Lab Batch ID: 749628 **QC- Sample ID:** 324459-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/15/2009 **Date Prepared:** 02/14/2009 **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	0.0999	100	0.1000	0.1013	101	1	70-125	25	
Toluene	ND	0.1000	0.1011	101	0.1000	0.1009	101	0	70-125	25	
Ethylbenzene	ND	0.1000	0.1006	101	0.1000	0.0992	99	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.2063	103	0.2000	0.0807	40	88	70-131	25	XF
o-Xylene	ND	0.1000	0.1033	103	0.1000	0.1016	102	2	71-133	25	

Lab Batch ID: 749744 **QC- Sample ID:** 324636-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/17/2009 **Date Prepared:** 02/14/2009 **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	0.1023	102	0.1000	0.0976	98	5	70-125	25	
Toluene	ND	0.1000	0.1009	101	0.1000	0.0962	96	5	70-125	25	
Ethylbenzene	ND	0.1000	0.0974	97	0.1000	0.0931	93	5	71-129	25	
m,p-Xylenes	ND	0.2000	0.2000	100	0.2000	0.1911	96	5	70-131	25	
o-Xylene	ND	0.1000	0.1005	101	0.1000	0.0960	96	5	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

Form 3 - MS / MSD Recoveries

Project Name: Livingston Line

Work Order # : 324636 **Project ID:** 2001-11226

Lab Batch ID: 749934 **QC- Sample ID:** 324982-004 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/17/2009 **Date Prepared:** 02/17/2009 **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	0.1029	103	0.1000	0.0992	99	4	70-125	25	
Toluene	ND	0.1000	0.1016	102	0.1000	0.0990	99	3	70-125	25	
Ethylbenzene	ND	0.1000	0.0992	99	0.1000	0.0982	98	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.2054	103	0.2000	0.2038	102	1	70-131	25	
o-Xylene	ND	0.1000	0.1020	102	0.1000	0.1010	101	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: Catherine Lederer

Laboratory: Xenco
Address:
Contact:
Phone:
PO/SO #: 2001-11326

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

Proj. No.: A4077007
Project Name: Livingston Line
No/Type of Containers: 40/VOA 10/1L

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

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

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	2/9/09	1118		X	MW-7			4	1			532636-01
		1149			MW-3							-02
		1317			MW-6							-03
		1247			MW-9							-04
		1311			MW-11							-05
		1346			MW-10							-06
		1412			MW-5							-07
		1442			MW-2							-08
		1517			MW-8							-09
		1539			MW-4							-10

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

Relinquished by (Signature)	Date	Time	Received by: (Signature)	Date	Time
	2/11/09	0900			
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)	2/11/09	0905

NOTES: Jason Henry w/Plains

0.5 °C

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 South Rd., # 261, Midland, Texas 79705, (432) 684-9600 Fax (432) 684-9608

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Tetra Tech

Date/ Time: 7-11-07 9:05

Lab ID #: 324630

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

Analytical Report 333009

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Line - Bob McCasland

2001-11043

01-JUN-09

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX
Corpus Christi, TX T104704370-08-TX - Dallas, TX T104704295-08-TX

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Miramar, FL E86349
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

01-JUN-09

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

Reference: XENCO Report No: **333009**
Livingston Line - Bob McCasland
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 333009. 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. 333009 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 333009

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Line - Bob McCasland

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-9	W	May-14-09 08:45		333009-001
MW-5	W	May-14-09 09:00		333009-002
MW-8	W	May-14-09 09:21		333009-003
MW-4	W	May-14-09 09:36		333009-004
MW-2	W	May-14-09 09:57		333009-005
MW-7	W	May-14-09 10:10		333009-006
MW-10	W	May-14-09 10:42		333009-007
MW-11	W	May-14-09 10:57		333009-008
MW-6	W	May-14-09 11:14		333009-009

CASE NARRATIVE

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

Project ID: 2001-11043 | *Report Date:* 01-JUN-09
Work Order Number: 333009 | *Date Received:* 05/15/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-759724 BTEX-MTBE EPA 8021B
SW8021BM

Batch 759724, 4-Bromofluorobenzene recovered below QC limits. Data not confirmed by re-analysis. Samples affected are: 530448-1-BLK,333009-002,333009-003. Samples had matrix interference present.

Batch: LBA-759853 BTEX-MTBE EPA 8021B
SW8021BM

Batch 759853, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 333009-007.
4-Bromofluorobenzene recovered below QC limits. Data not confirmed by re-analysis. Samples affected are: 530513-1-BLK,333009-006,333009-009,333009-007,333009-008. Surrogate failure in samples is attributable to matrix interferences.

Batch: LBA-760175 BTEX-MTBE EPA 8021B
SW8021BM

Batch 760175, 4-Bromofluorobenzene recovered below QC limits; Data not confirmed by re-analysis. Samples affected are: 530705-1-BLK,333009-005,333009-004. Matrix interference is suspected in samples

Certificate of Analysis Summary 333009

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line - Bob McCasland

Project Id: 2001-11043
Contact: Jason Henry
Project Location:

Date Received in Lab: Fri May-15-09 03:10 pm
Report Date: 01-JUN-09
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	333009-001		333009-002		333009-003		333009-004		333009-005		333009-006	
	Field Id:	MW-9		MW-5		MW-8		MW-4		MW-2		MW-7	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	May-14-09 08:45		May-14-09 09:00		May-14-09 09:21		May-14-09 09:36		May-14-09 09:57		May-14-09 10:10	
BTEX by EPA 8021B	*Extracted:*	May-21-09 15:30		May-21-09 15:30		May-21-09 15:30		May-26-09 10:00		May-26-09 10:00		May-18-09 15:45	
	Analyzed:	May-22-09 01:04		May-22-09 01:26		May-22-09 01:47		May-26-09 16:42		May-26-09 17:03		May-22-09 06:03	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.0336	0.0010	0.1093	0.0010	0.0121	0.0010	0.4920	0.0050	0.7167	0.0100	0.0013	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0100	ND	0.0200	ND	0.0020
Ethylbenzene		0.0381	0.0010	0.0043	0.0010	0.0044	0.0010	0.0312	0.0050	ND	0.0100	ND	0.0010
m,p-Xylenes		0.0252	0.0020	ND	0.0020	0.0050	0.0020	0.0476	0.0100	ND	0.0200	ND	0.0020
o-Xylene		0.0305	0.0010	ND	0.0010	ND	0.0010	ND	0.0050	ND	0.0100	ND	0.0010
Total Xylenes		0.0557	0.0010	ND	0.0010	0.005	0.0010	0.0476	0.0050	ND	0.0100	ND	0.0010
Total BTEX		0.1274	0.0010	0.1136	0.0010	0.0215	0.0010	0.5708	0.0050	0.7167	0.0100	0.0013	0.0010

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 333009

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line - Bob McCasland

Project Id: 2001-11043
Contact: Jason Henry
Project Location:

Date Received in Lab: Fri May-15-09 03:10 pm
Report Date: 01-JUN-09
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	333009-007		333009-008		333009-009					
	Field Id:	MW-10		MW-11		MW-6					
	Depth:										
	Matrix:	WATER		WATER		WATER					
	Sampled:	May-14-09 10:42		May-14-09 10:57		May-14-09 11:14					
BTEX by EPA 8021B	*Extracted:*	May-18-09 15:45		May-18-09 15:45		May-18-09 15:45					
	Analyzed:	May-22-09 06:25		May-22-09 06:46		May-22-09 07:08					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Benzene		0.0028	0.0010	ND	0.0010	ND	0.0010				
Toluene		ND	0.0020	ND	0.0020	ND	0.0020				
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010				
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020				
o-Xylene		0.0013	0.0010	ND	0.0010	ND	0.0010				
Total Xylenes		0.0013	0.0010	ND	0.0010	ND	0.0010				
Total BTEX		0.0041	0.0010	ND	0.0010	ND	0.0010				

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.

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

BRL Below Reporting Limit.

RL Reporting Limit

* Outside XENCO's scope of NELAC Accreditation.

Work Orders : 333009,

Project ID: 2001-11043

Lab Batch #: 759724 **Sample:** 530448-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 16:44

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	0.0304	0.0300	101	80-120	

Lab Batch #: 759724 **Sample:** 530448-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 17:05

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	0.0306	0.0300	102	80-120	

Lab Batch #: 759724 **Sample:** 530448-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 17:56

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0184	0.0300	61	80-120	**

Lab Batch #: 759724 **Sample:** 333009-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 01:04

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 759724 **Sample:** 333009-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 01:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0216	0.0300	72	80-120	**

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Line - Bob McCasland

Work Orders : 333009,

Project ID: 2001-11043

Lab Batch #: 759724 **Sample:** 333009-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 01:47

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0224	0.0300	75	80-120	**

Lab Batch #: 759724 **Sample:** 333009-003 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 02:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 759724 **Sample:** 333009-003 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 03:12

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 759853 **Sample:** 530513-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 03:55

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	0.0301	0.0300	100	80-120	

Lab Batch #: 759853 **Sample:** 530513-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 04:17

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	0.0292	0.0300	97	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Line - Bob McCasland

Work Orders : 333009,

Project ID: 2001-11043

Lab Batch #: 759853 **Sample:** 530513-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 04:59

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0181	0.0300	60	80-120	*

Lab Batch #: 759853 **Sample:** 333009-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 06:03

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0229	0.0300	76	80-120	*

Lab Batch #: 759853 **Sample:** 333009-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 06:25

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0237	0.0300	79	80-120	*
4-Bromofluorobenzene	0.0178	0.0300	59	80-120	*

Lab Batch #: 759853 **Sample:** 333009-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 06:46

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0193	0.0300	64	80-120	*

Lab Batch #: 759853 **Sample:** 333009-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 07:08

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0161	0.0300	54	80-120	*

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Line - Bob McCasland

Work Orders : 333009,

Project ID: 2001-11043

Lab Batch #: 760175 **Sample:** 530705-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/26/09 12:45

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0337	0.0300	112	80-120	
4-Bromofluorobenzene	0.0248	0.0300	83	80-120	

Lab Batch #: 760175 **Sample:** 530705-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/26/09 13:06

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	0.0246	0.0300	82	80-120	

Lab Batch #: 760175 **Sample:** 530705-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/26/09 13:49

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	0.0156	0.0300	52	80-120	*

Lab Batch #: 760175 **Sample:** 333009-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/26/09 16:42

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0167	0.0300	56	80-120	*

Lab Batch #: 760175 **Sample:** 333009-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/26/09 17:03

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	0.0168	0.0300	56	80-120	*

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Line - Bob McCasland

Work Orders : 333009,

Project ID: 2001-11043

Lab Batch #: 760175 **Sample:** 332838-008 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/26/09 22:04

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	0.0242	0.0300	81	80-120	

Lab Batch #: 760175 **Sample:** 332838-008 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/26/09 22:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Livingston Line - Bob McCasland

Work Order #: 333009 **Project ID:** 2001-11043

Analyst: ASA **Date Prepared:** 05/21/2009 **Date Analyzed:** 05/21/2009

Lab Batch ID: 759724 **Sample:** 530448-1-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	0.1091	109	0.1	0.1092	109	0	70-125	25	
Toluene	ND	0.1000	0.1112	111	0.1	0.1118	112	1	70-125	25	
Ethylbenzene	ND	0.1000	0.1120	112	0.1	0.1121	112	0	71-129	25	
m,p-Xylenes	ND	0.2000	0.2374	119	0.2	0.2377	119	0	70-131	25	
o-Xylene	ND	0.1000	0.1180	118	0.1	0.1184	118	0	71-133	25	

Analyst: ASA **Date Prepared:** 05/18/2009 **Date Analyzed:** 05/22/2009

Lab Batch ID: 759853 **Sample:** 530513-1-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	0.1046	105	0.1	0.1045	105	0	70-125	25	
Toluene	ND	0.1000	0.1053	105	0.1	0.1055	106	0	70-125	25	
Ethylbenzene	ND	0.1000	0.1047	105	0.1	0.1047	105	0	71-129	25	
m,p-Xylenes	ND	0.2000	0.2201	110	0.2	0.2199	110	0	70-131	25	
o-Xylene	ND	0.1000	0.1115	112	0.1	0.1111	111	0	71-133	25	

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

BS / BSD Recoveries

Project Name: Livingston Line - Bob McCasland

Work Order #: 333009 **Project ID:** 2001-11043

Analyst: BRB **Date Prepared:** 05/26/2009 **Date Analyzed:** 05/26/2009

Lab Batch ID: 760175 **Sample:** 530705-1-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	0.1032	103	0.1	0.1014	101	2	70-125	25	
Toluene	ND	0.1000	0.0998	100	0.1	0.0981	98	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1075	108	0.1	0.1056	106	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2165	108	0.2	0.2132	107	2	70-131	25	
o-Xylene	ND	0.1000	0.1028	103	0.1	0.1015	102	1	71-133	25	

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

Form 3 - MS / MSD Recoveries

Project Name: Livingston Line - Bob McCasland

Work Order # : 333009 **Project ID:** 2001-11043

Lab Batch ID: 759724 **QC- Sample ID:** 333009-003 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 05/22/2009 **Date Prepared:** 05/21/2009 **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	0.0121	0.1000	0.1100	98	0.1000	0.1022	90	7	70-125	25	
Toluene	ND	0.1000	0.0934	93	0.1000	0.0869	87	7	70-125	25	
Ethylbenzene	0.0044	0.1000	0.0996	95	0.1000	0.0933	89	7	71-129	25	
m,p-Xylenes	0.0050	0.2000	0.2033	99	0.2000	0.1908	93	6	70-131	25	
o-Xylene	ND	0.1000	0.0990	99	0.1000	0.0922	92	7	71-133	25	

Lab Batch ID: 760175 **QC- Sample ID:** 332838-008 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 05/26/2009 **Date Prepared:** 05/26/2009 **Analyst:** BRB

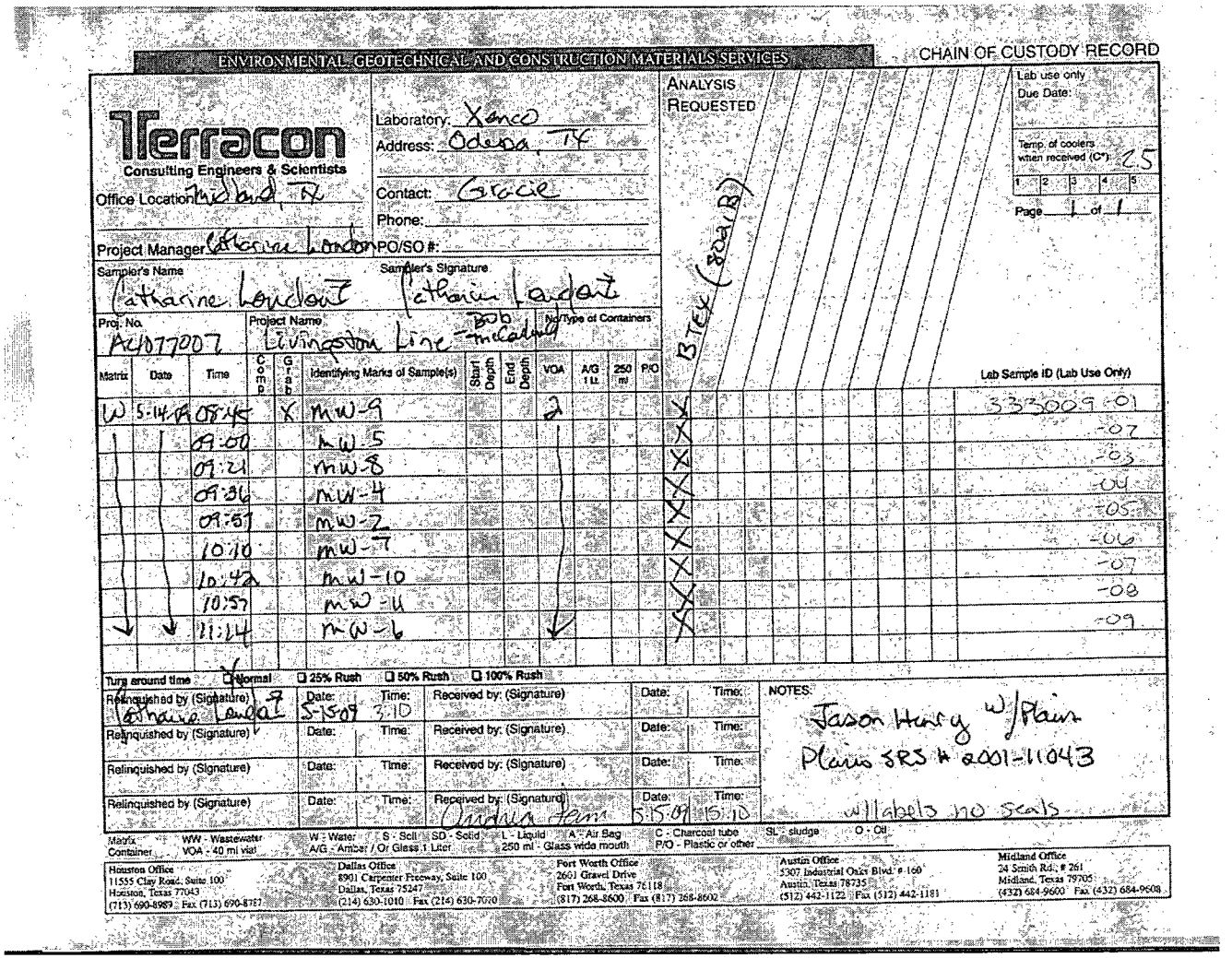
Reporting Units: mg/L

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	0.0862	86	0.1000	0.0954	95	10	70-125	25	
Toluene	ND	0.1000	0.0823	82	0.1000	0.0911	91	10	70-125	25	
Ethylbenzene	ND	0.1000	0.0880	88	0.1000	0.0983	98	11	71-129	25	
m,p-Xylenes	ND	0.2000	0.1773	89	0.2000	0.1976	99	11	70-131	25	
o-Xylene	ND	0.1000	0.0837	84	0.1000	0.0939	94	11	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, TX

Laboratory: Xenco
Address: Odessa, TX
Contact: Gracie
Phone:

Project Manager: Catharine Loudon
PO/SO #:

Sampler's Name: Catharine Loudon
Sampler's Signature: Catharine Loudon

Proj. No.: A2077007
Project Name: Livingston Line - Bob McCaleb
No./Type of Containers

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	A/G 1 L	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	5-14-09	08:45		X	MW-9			2				333009-01
		09:00			MW-5							-02
		09:21			MW-8							-03
		09:36			MW-4							-04
		09:57			MW-2							-05
		10:10			MW-7							-06
		10:42			MW-10							-07
		10:57			MW-11							-08
		11:14			MW-6							-09

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

Relinquished by (Signature): Catharine Loudon	Date: 5-15-09	Time: 3:10	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature) Cindy Tam	Date: 5-15-09	Time: 15:10

NOTES:
Jason Hurst w/Plains
Plains SRS # 2001-11043
w/labels no seals

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

Houston Office
11555 Clay Road, Suite 100
Houston, Texas 77043
(713) 690-8989 Fax (713) 690-8787

Dallas Office
6901 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: 5.15.09 15:10

Lab ID # : 333009

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 340923

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Line

2001-10043

18-AUG-09

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-08-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00308), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87428), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Miramar (EPA Lab code: FL01246): Florida (E86349)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-08-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-08-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370-08-TX)

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

18-AUG-09

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

Reference: XENCO Report No: **340923**
Livingston Line
Project Address:

Jason Henry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 340923. 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. 340923 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 340923

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Line

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-11	W	Aug-12-09 09:36		340923-001
MW-10	W	Aug-12-09 10:06		340923-002
MW-5	W	Aug-12-09 10:26		340923-003
MW-8	W	Aug-12-09 10:36		340923-004
MW-7	W	Aug-12-09 13:00		340923-006
MW-3	W	Aug-12-09 13:21		340923-007
MW-6	W	Aug-12-09 13:43		340923-008
MW-9	W	Aug-12-09 14:06		340923-009
MW-4	W	Aug-12-09 12:30		340923-010

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Livingston Line

Project ID:	*2001-10043*	*Report Date:*	*18-AUG-09*
Work Order Number:	*340923*	*Date Received:*	*08/13/2009*

Sample receipt non conformances and Comments:

Sample Issues:
Sxs -003 time on container conflicts with time on chain of custody.
Sxs -005 not present.
Sxs -010 quantity of containers conflicts with chain of custody, coc reflects received two voas, actually received four voas.
Issues Resolutions:
Sxs -003 time confirmed with time on chain of custody.
Sxs -005 confirmed not present due to not having been sampled.
Sxs -010 quantity of four voa containers confirmed with client.

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-768705 BTEX-MTBE EPA 8021B
SW8021BM

Batch 768705, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 535466-1-BLK,340923-002,340923-003,340923-010,340923-006,340923-007,340923-008,340923-009,340923-001,340923-004.

Certificate of Analysis Summary 340923

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

Project Id: 2001-10043
Contact: Jason Henry
Project Location:

Date Received in Lab: Thu Aug-13-09 04:20 pm
Report Date: 18-AUG-09
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	340923-001		340923-002		340923-003		340923-004		340923-006		340923-007	
	Field Id:	MW-11		MW-10		MW-5		MW-8		MW-7		MW-3	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Aug-12-09 09:36		Aug-12-09 10:06		Aug-12-09 10:26		Aug-12-09 10:36		Aug-12-09 13:00		Aug-12-09 13:21	
BTEX by EPA 8021B	***Extracted:***	Aug-14-09 13:00		Aug-14-09 13:00		Aug-14-09 13:00		Aug-14-09 13:00		Aug-14-09 13:00		Aug-14-09 13:00	
	Analyzed:	Aug-15-09 04:44		Aug-15-09 09:14		Aug-15-09 10:26		Aug-15-09 10:44		Aug-15-09 11:03		Aug-15-09 11:21	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	0.0014	0.0010	0.0570	0.0010	0.0138	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	0.0021	0.0010	0.0041	0.0010	0.0057	0.0010	ND	0.0010	ND	0.0010
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	0.0057	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	0.0016	0.0010	0.0020	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total Xylenes		ND	0.0010	0.0016	0.0010	0.0020	0.0010	0.0057	0.0010	ND	0.0010	ND	0.0010
Total BTEX		ND	0.0010	0.0051	0.0010	0.0631	0.0010	0.0252	0.0010	ND	0.0010	ND	0.0010

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 340923

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

Project Id: 2001-10043
Contact: Jason Henry
Project Location:

Date Received in Lab: Thu Aug-13-09 04:20 pm
Report Date: 18-AUG-09
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	340923-008		340923-009		340923-010					
	Field Id:	MW-6		MW-9		MW-4					
	Depth:										
	Matrix:	WATER		WATER		WATER					
	Sampled:	Aug-12-09 13:43		Aug-12-09 14:06		Aug-12-09 12:30					
BTEX by EPA 8021B	***Extracted:***	Aug-14-09 13:00		Aug-14-09 13:00		Aug-14-09 13:00					
	Analyzed:	Aug-15-09 11:40		Aug-15-09 13:49		Aug-15-09 14:08					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Benzene		0.0080	0.0010	0.0452	0.0200	1.357	0.0200				
Toluene		ND	0.0020	ND	0.0400	ND	0.0400				
Ethylbenzene		ND	0.0010	0.0568	0.0200	0.1026	0.0200				
m,p-Xylenes		ND	0.0020	ND	0.0400	0.1532	0.0400				
o-Xylene		ND	0.0010	0.0288	0.0200	ND	0.0200				
Total Xylenes		ND	0.0010	0.0288	0.0200	0.1532	0.0200				
Total BTEX		0.0080	0.0010	0.1308	0.0200	1.613	0.0200				

Brent Barron, II
Odessa Laboratory Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

BRL Below Reporting Limit.

RL Reporting Limit

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Line

Work Orders : 340923,

Project ID: 2001-10043

Lab Batch #: 768705 **Sample:** 535466-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 03:31

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 768705 **Sample:** 535466-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 03:49

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	0.0331	0.0300	110	80-120	

Lab Batch #: 768705 **Sample:** 535466-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 04:25

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	0.0147	0.0300	49	80-120	*

Lab Batch #: 768705 **Sample:** 340923-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 04:44

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0169	0.0300	56	80-120	*

Lab Batch #: 768705 **Sample:** 340923-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 09:14

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0218	0.0300	73	80-120	*

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Line

Work Orders : 340923,

Project ID: 2001-10043

Lab Batch #: 768705 **Sample:** 340923-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 10:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0191	0.0300	64	80-120	*

Lab Batch #: 768705 **Sample:** 340923-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 10:44

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0220	0.0300	73	80-120	*

Lab Batch #: 768705 **Sample:** 340923-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 11:03

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0182	0.0300	61	80-120	*

Lab Batch #: 768705 **Sample:** 340923-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 11:21

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	0.0155	0.0300	52	80-120	*

Lab Batch #: 768705 **Sample:** 340923-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 11:40

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0163	0.0300	54	80-120	*

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Line

Work Orders : 340923,

Project ID: 2001-10043

Lab Batch #: 768705 **Sample:** 340923-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 13:49

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0216	0.0300	72	80-120	*

Lab Batch #: 768705 **Sample:** 340923-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 14:08

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	0.0179	0.0300	60	80-120	*

Lab Batch #: 768705 **Sample:** 340923-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 14:46

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	0.0356	0.0300	119	80-120	

Lab Batch #: 768705 **Sample:** 340923-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 15:04

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	0.0355	0.0300	118	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Livingston Line

Work Order #: 340923 **Project ID:** 2001-10043

Analyst: ASA **Date Prepared:** 08/14/2009 **Date Analyzed:** 08/15/2009

Lab Batch ID: 768705 **Sample:** 535466-1-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	0.1053	105	0.1	0.1037	104	2	70-125	25	
Toluene	ND	0.1000	0.1009	101	0.1	0.0993	99	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1119	112	0.1	0.1107	111	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.2289	114	0.2	0.2233	112	2	70-131	25	
o-Xylene	ND	0.1000	0.1083	108	0.1	0.1072	107	1	71-133	25	

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

Form 3 - MS / MSD Recoveries

Project Name: Livingston Line

Work Order # : 340923 **Project ID:** 2001-10043

Lab Batch ID: 768705 **QC- Sample ID:** 340923-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 08/15/2009 **Date Prepared:** 08/14/2009 **Analyst:** ASA

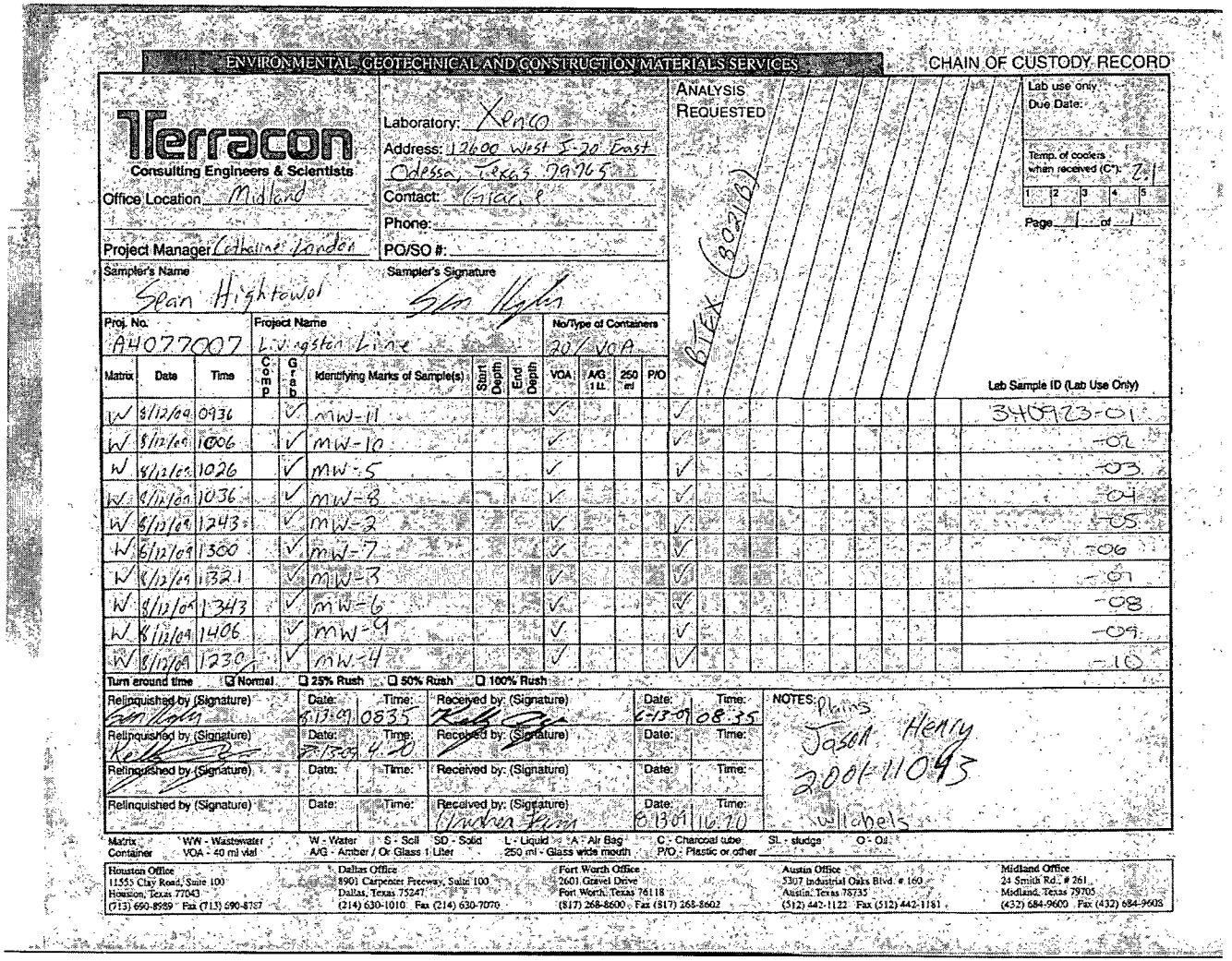
Reporting Units: mg/L

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	0.0965	97	0.1000	0.0977	98	1	70-125	25	
Toluene	ND	0.1000	0.0930	93	0.1000	0.0943	94	1	70-125	25	
Ethylbenzene	ND	0.1000	0.1047	105	0.1000	0.1063	106	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2147	107	0.2000	0.2159	108	1	70-131	25	
o-Xylene	ND	0.1000	0.1014	101	0.1000	0.1022	102	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: Catherine London
Sampler's Name: Sean Hightower
Sampler's Signature: Sean Hightower

Laboratory: Xenco
Address: 12600 West I-20 East, Odessa, Texas 79765
Contact: Linda P.
Phone:
PO/SO #:

Proj. No.: A4077007
Project Name: Livingston Line
No/Type of Containers: 20/VOA

ANALYSIS REQUESTED: BTEX (8021B)

Lab use only
Due Date:
Temp. of coolers when received (C°): 2.1
1 2 3 4 5
Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lit.	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	8/12/09	0936		✓	MW-11			✓			✓	340923-01
W	8/12/09	1006		✓	MW-10			✓			✓	-02
W	8/12/09	1026		✓	MW-5			✓			✓	-03
W	8/12/09	1036		✓	MW-8			✓			✓	-04
W	8/12/09	1243		✓	MW-2			✓			✓	-05
W	8/12/09	1300		✓	MW-7			✓			✓	-06
W	8/12/09	1321		✓	MW-3			✓			✓	-07
W	8/12/09	1343		✓	MW-6			✓			✓	-08
W	8/12/09	1406		✓	MW-9			✓			✓	-09
W	8/12/09	1230		✓	MW-4			✓			✓	-10

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

	Date	Time		Date	Time
Relinquished by (Signature)	8/13/09	0835	Received by: (Signature)	8-13-09	08:35
Relinquished by (Signature)	8/13/09	4:20	Received by: (Signature)		
Relinquished by (Signature)			Received by: (Signature)		
Relinquished by (Signature)			Received by: (Signature)	8/13/09	16:20

NOTES: Plains
Jason Henry
200-1104
williams

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) 684-9503

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Terracon / Plains

Date/ Time: 8.13.09 16:20

Lab ID # : 340923

Initials: CL

Sample Receipt Checklist

				Client Initials
#1 Temperature of container/ cooler?	(Yes)	No	2.1 °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: C. London Contacted by: G. Avalos Date/ Time: 08/14/09 8:30 AM

Regarding: -003 time on container conflicts w/time on COC.; -005 not present; -010 qty of containers conflicts w/COC.

Corrective Action Taken:

-003 correct time is on COC per client; -005 confirmed not present & not sampled; -010 confirmed qty of containers per e-mail from client.

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

Gracie Avalos

From: London, Catharine H. [chlondon@terracon.com]
Sent: Friday, August 14, 2009 11:28 AM
To: Gracie Avalos
Subject: Livingston Line Samples

Gracie

For the groundwater sample MW-5, the correct time is on the chain of custody 10:26. There is no sample MW-2 - it was listed on the chain in error. There were a total of 4 VOAs for MW-4. Thanks for your help in this matter.

Catharine London, P. G.
Senior Project Manager
Terracon
24 Smith Road, Suite 261 I Midland, Texas 79705
P 432-684-9600 I F 432-684-9608 I M 432-894-6701
chlondon@terracon.com I www.terracon.com

8/14/2009

Analytical Report 351958

for

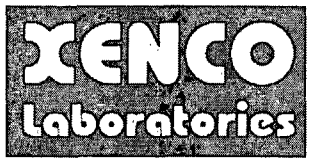
PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Line

2001-11005

17-NOV-09



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-08-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00308), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87428), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-08-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-08-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370-08-TX)
Xenco-Boca Raton (EPA Lab Code: FL00449): Florida(E86240),
South Carolina(96031001), Louisiana(04154), Georgia(917)

17-NOV-09

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

Reference: XENCO Report No: **351958**
Livingston Line
Project Address:

Jason Henry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 351958. 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. 351958 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 351958

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Line

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	Nov-11-09 14:40		351958-001
MW-3	W	Nov-11-09 14:20		351958-002
MW-5	W	Nov-11-09 15:45		351958-003
MW-6	W	Nov-11-09 13:55		351958-004
MW-7	W	Nov-11-09 15:00		351958-005
MW-8	W	Nov-11-09 15:25		351958-006
MW-9	W	Nov-11-09 13:30		351958-007
MW-10	W	Nov-11-09 16:10		351958-008
MW-11	W	Nov-11-09 16:30		351958-009

CASE NARRATIVE

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

Project ID: 2001-11005 | *Report Date:* 17-NOV-09
Work Order Number: 351958 | *Date Received:* 11/12/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-781922 BTEX by EPA 8021
SW8021BM

Batch 781922, Ethylbenzene recovered below QC limits in the Matrix Spike.
Samples affected are: 351958-006, -007, -009, -003, -001, -002, -005, -008, -004.
The Laboratory Control Sample for Ethylbenzene is within laboratory Control Limits

Certificate of Analysis Summary 351958

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

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

Date Received in Lab: Thu Nov-12-09 11:00 am
Report Date: 17-NOV-09
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	351958-001		351958-002		351958-003		351958-004		351958-005		351958-006	
	Field Id:	MW-2		MW-3		MW-5		MW-6		MW-7		MW-8	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Nov-11-09 14:40		Nov-11-09 14:20		Nov-11-09 15:45		Nov-11-09 13:55		Nov-11-09 15:00		Nov-11-09 15:25	
BTEX by EPA 8021	***Extracted:***	Nov-14-09 10:30		Nov-14-09 10:30		Nov-14-09 10:30		Nov-14-09 10:30		Nov-14-09 10:30		Nov-14-09 10:30	
	Analyzed:	Nov-16-09 01:15		Nov-16-09 02:17		Nov-16-09 04:44		Nov-16-09 02:38		Nov-16-09 02:59		Nov-16-09 03:20	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.0476	0.0010	ND	0.0010	0.1185	0.0050	0.0072	0.0010	ND	0.0010	0.0085	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0100	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		0.0068	0.0010	ND	0.0010	0.0248	0.0050	ND	0.0010	ND	0.0010	0.0024	0.0010
m,p-Xylenes		0.0047	0.0020	ND	0.0020	ND	0.0100	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0050	ND	0.0010	ND	0.0010	ND	0.0010
Xylenes, Total		0.0047	0.0010	ND	0.0010	ND	0.0050	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX		0.0591	0.0010	ND	0.0010	0.1433	0.0050	0.0072	0.0010	ND	0.0010	0.0109	0.0010

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 351958

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Line

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

Date Received in Lab: Thu Nov-12-09 11:00 am
Report Date: 17-NOV-09
Project Manager: Brent Barron, II

Analysis Requested												
	Lab Id:	351958-007		351958-008		351958-009						
	Field Id:	MW-9		MW-10		MW-11						
	Depth:											
	Matrix:	WATER		WATER		WATER						
	Sampled:	Nov-11-09 13:30		Nov-11-09 16:10		Nov-11-09 16:30						
BTEX by EPA 8021	*Extracted:*	Nov-14-09 10:30		Nov-14-09 10:30		Nov-14-09 10:30						
	Analyzed:	Nov-16-09 03:41		Nov-16-09 04:02		Nov-16-09 04:23						
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL					
Benzene		0.0363	0.0010	ND	0.0010	ND	0.0010					
Toluene		ND	0.0020	ND	0.0020	ND	0.0020					
Ethylbenzene		0.0403	0.0010	0.0022	0.0010	ND	0.0010					
m,p-Xylenes		0.0119	0.0020	ND	0.0020	ND	0.0020					
o-Xylene		0.0089	0.0010	0.0011	0.0010	ND	0.0010					
Xylenes, Total		0.0208	0.0010	0.0011	0.0010	ND	0.0010					
Total BTEX		0.0974	0.0010	0.0033	0.0010	ND	0.0010					

Brent Barron, II
Odessa Laboratory Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

BRL Below Reporting Limit.

RL Reporting Limit

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Line

Work Orders : 351958,

Project ID: 2001-11005

Lab Batch #: 781922 **Sample:** 543292-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 20:40

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 781922 **Sample:** 543292-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 21:01

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 781922 **Sample:** 543292-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 21:44

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 781922 **Sample:** 351958-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 01:15

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

Lab Batch #: 781922 **Sample:** 351958-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 02:17

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Line

Work Orders : 351958,

Project ID: 2001-11005

Lab Batch #: 781922 **Sample:** 351958-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 02:38

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 781922 **Sample:** 351958-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 02:59

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 781922 **Sample:** 351958-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 03:20

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 781922 **Sample:** 351958-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 03:41

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 781922 **Sample:** 351958-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 04:02

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Livingston Line

Work Orders : 351958,

Project ID: 2001-11005

Lab Batch #: 781922 **Sample:** 351958-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 04:23

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 781922 **Sample:** 351958-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 04:44

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 781922 **Sample:** 351955-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 05:04

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 781922 **Sample:** 351955-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 05:25

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

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

BS / BSD Recoveries

Project Name: Livingston Line

Work Order #: 351958 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 11/14/2009 **Date Analyzed:** 11/15/2009

Lab Batch ID: 781922 **Sample:** 543292-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0854	85	0.1	0.0845	85	1	70-125	25	
Toluene	ND	0.1000	0.0853	85	0.1	0.0845	85	1	70-125	25	
Ethylbenzene	ND	0.1000	0.0835	84	0.1	0.0817	82	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.1805	90	0.2	0.1754	88	3	70-131	25	
o-Xylene	ND	0.1000	0.0893	89	0.1	0.0877	88	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 Line

Work Order # : 351958 **Project ID:** 2001-11005

Lab Batch ID: 781922 **QC- Sample ID:** 351955-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/16/2009 **Date Prepared:** 11/14/2009 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0725	0.1000	0.1463	74	0.1000	0.1831	111	22	70-125	25	
Toluene	ND	0.1000	0.0708	71	0.1000	0.0891	89	23	70-125	25	
Ethylbenzene	0.0414	0.1000	0.1107	69	0.1000	0.1378	96	22	71-129	25	X
m,p-Xylenes	0.0074	0.2000	0.1516	72	0.2000	0.1889	91	22	70-131	25	
o-Xylene	ND	0.1000	0.0717	72	0.1000	0.0890	89	22	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, Tx

Project Manager: Catharine London

Laboratory: Xenco
Address: 12600 West I-20 East
Odessa, Texas 79765
Contact:
Phone:
PO/SO #:

ANALYSIS REQUESTED: BTEX (8021B)

Lab use only
Due Date:

Temp. of coolers when received (C°): .1

1	2	3	4	5

Page 1 of 1

Sampler's Name: Sean Hightower
Sampler's Signature:

Proj. No.: A4077007
Project Name: Livingston Line
No/Type of Containers: 18/VOA

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	11/11/09	1440		✓	MW-2			2				2	351958-01
W	11/11/09	1420		✓	MW-3			2				2	-02
W	11/11/09	1545		✓	MW-5			2				2	-03
W	11/11/09	1355		✓	MW-6			2				2	-04
W	11/11/09	1500		✓	MW-7			2				2	-05
W	11/11/09	1525		✓	MW-8			2				2	-06
W	11/11/09	1330		✓	MW-9			2				2	-07
W	11/11/09	1610		✓	MW-10			2				2	-08
W	11/11/09	1630		✓	MW-11			2				2	-09

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	11/12/09	0830		11-12-09	0831
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Catharine London	11-12-09	11:00	Andrea Lam	11-12-09	11:00
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES: Jason Henry 2001-11005

w/labels as seals

Matrix: W - Water, S - Soil, SD - Solid, L - Liquid, A - Air Bag, C - Charcoal tube, SL - sludge, O - Oil
Container: WW - Wastewater, 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: 11.12.09 11:00

Lab ID # : 351958

Initials: AL

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	0.1 °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

APPENDIX D

CD of the 2009 Annual Groundwater Monitoring Report