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WORKPLANS

Date:

May 2010

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REMEDICATION SUMMARY AND PROPOSED SOIL CLOSURE STRATEGY

PLAINS PIPELINE, L.P. (231735)
14 Inch Vac to Jal Legacy
Lea County, New Mexico
Plains SRS # 2009-092

UNIT LTR "F" (SE ¼ /NW ¼), Section 25, Township 25 South, Range 37 East
Latitude 32° 06' 10.7" North, Longitude 103° 07' 10.3" West
NMOCD Reference # 1RP-2162

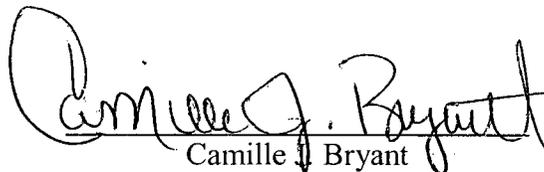
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INTRODUCTION AND BACKGROUND INFORMATION

Basin Environmental Consulting, LLC (Basin), on behalf of Plains Pipeline, L.P. (Plains), has prepared this Remediation Summary and Proposed Soil Closure Strategy for the release site known as 14 Inch Vac to Jal Legacy (SRS # 2009-092). The legal description of the release site is Unit Letter "F" (SE ¼ NW ¼), Section 25, Township 25 South, Range 37 East, in Lea County, New Mexico. The property affected by the release is owned by Legacy Reserves, L.P. The release site GPS coordinates are 32° 06' 10.7" North and 103° 07' 10.3" West. Please reference Figure 1 for a Site Location Map and Figure 2 for a Site and Sample Location Map. The Release Notification and Corrective Action (Form C-141) is provided as Appendix D.

On April 9, 2009, Plains discovered a crude oil release from a fourteen (14)-inch steel pipeline. The cause of the release was attributed to external corrosion of the pipeline and was reported to the New Mexico Oil Conservation Division (NMOCD) on April 9, 2009. During initial response activities, Plains installed a temporary pipeline clamp on the pipeline to mitigate the release. Approximately two hundred fifty (250) barrels of crude oil was released from the pipeline, with no recovery. General photographs of the site are provided as Appendix C.

The release site is bisected by two (2) fourteen (14) inch Plains pipelines that run parallel through the site. Due to safety concerns associated with excavating and supporting the two (2) large diameter pipelines, Plains requested and received NMOCD approval to leave the soil beneath and adjacent to the Plains pipelines in-situ.

The 14 Inch Vac to Jal release site is located approximately 1,147 feet to the south-southeast of a documented groundwater remediation site (Arco South Justis Unit F-230). Information regarding this site can be found on the NMOCD imaging system.

NMOCD SITE CLASSIFICATION

According to data obtained from the New Mexico Office of the State Engineer (NMOSE), no water wells are registered in Section 25, Township 25S, Range 37E. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately fifty five (55) feet below ground surface (bgs). Soil boring (SB-1) was advanced by Plains and subsequently converted to a groundwater monitor well (MW-1). Groundwater was encountered at a depth of approximately sixty five (65) feet bgs in monitor well MW-1. The analytical results of the soil samples collected during the advancement of the soil boring, indicated hydrocarbon impact exceeding the NMOCD regulatory standard, was present at the groundwater interface. The depth of hydrocarbon impact results in a score of twenty (20) being assigned to the site based on the NMOCD depth to groundwater criteria.

The water well database, maintained by the NMOSE, indicated there are no water wells less than 1,000 feet from the release, resulting in zero (0) points being assigned to this site as a result of this criteria.

There are no surface water bodies located within 1,000 feet of the site. Based on the NMOCD ranking system zero (0) points will be assigned to the site as a result of the criteria.

The NMOCD guidelines indicate the 14 Inch Vac to Jal Legacy release site has an initial ranking score of twenty (20). Based on this score, the soil remediation levels for a site with a ranking score of twenty (20) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- BTEX – 50 mg/Kg (ppm)
- TPH – 100 mg/Kg (ppm)

SUMMARY OF SOIL REMEDIATION ACTIVITIES

On April 9, 2009, following initial response activities, excavation of the hydrocarbon impacted soil began at the site. Approximately 18,000 cubic yards (cy) of impacted soil was excavated and stockpiled on-site, pending final disposition. Final dimensions of the Main Excavation were approximately four hundred (400) feet in length, approximately two hundred (200) feet in width, and varied in depth from five (5) to fourteen (14) feet in depth. The West Excavation measured approximately one hundred fifty (150) feet in length, approximately one hundred five (105) feet width and approximately ten (10) feet in depth. The soil beneath and adjacent to the two (2) Plains pipelines was left in-situ, due to safety concerns associated with excavating and supporting the two (2) large diameter pipelines.

On April 15, 2009, a soil sample (Chloride Baseline) was collected from the stockpiled material to determine chloride concentration of the soil. The soil sample was submitted to the laboratory for chloride analysis using method E 300. The analytical results indicated a chloride concentration of 796 mg/Kg. Table 1 summarizes the Concentrations of Benzene, BTEX, TPH and Chlorides in Soil. Analytical reports are provided as Appendix B.

On May 18, 2009, two (2) soil samples (Stockpile #1 and Stockpile #2) were collected from the stockpiled material and submitted to the laboratory for analysis. The soil samples were analyzed for concentrations of benzene, toluene, ethyl-benzene and xylenes (BTEX) and total petroleum hydrocarbons (TPH) using EPA SW 846-8021b and EPA SW 846-8015M, respectively. Laboratory analytical results indicated benzene concentrations of 3.549 mg/Kg for soil sample Stockpile #1 and 23.2 mg/Kg for soil sample Stockpile #2. BTEX concentrations were 275.569 mg/Kg for soil sample Stockpile #1 and 545.4 mg/Kg for soil sample Stockpile #2. TPH concentrations were 8,880 mg/Kg for soil sample Stockpile #1 and 18,269 mg/Kg for soil sample Stockpile #2.

On May 18, 2009, four (4) soil samples (Main Exc. NWSW, Main Exc. NESW, Main Exc. WSW and Main Exc. ESW) were collected from the Main Excavation sidewalls at depths ranging from 4.5 feet to 9 feet bgs. The soil samples were submitted to the laboratory for determination of BTEX and TPH constituent concentrations. Laboratory analytical results indicated benzene concentrations ranged from less than the appropriate laboratory method detection limit (MDL) for soil samples Main Exc. WSW and Main Exc. ESW to 0.0073 mg/Kg for soil sample Main Exc. NWSW. BTEX concentrations ranged from less than the appropriate laboratory MDL for soil samples Main Exc. WSW and Main Exc. ESW to 0.0924 mg/Kg for soil sample Main Exc. NWSW. TPH concentrations ranged from less than the laboratory MDL for soil sample Main Exc. WSW to 43.3 mg/Kg for soil sample Main Exc. NESW. Please reference Figure 2 for the Site and Sample Location Map.

In addition, four (4) soil samples (Main Exc. Floor #1, Main Exc. Floor #2, Main Exc. Floor #3 and Main Exc. Floor #4) were collected from the floor of the Main Excavation and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from less than the laboratory MDL for soil sample Main Exc. Floor #2 to 9.459 mg/Kg for soil sample Main Exc. Floor #4. BTEX concentrations ranged from 0.0046 mg/Kg for soil sample Main Exc. Floor #1 to 371.119 mg/Kg for soil sample Main Exc. Floor #4. TPH concentrations ranged from 19.8 mg/Kg for soil sample Main Exc. Floor #1 to 13,233 mg/Kg for soil sample Main Exc. Floor #4.

On May 26, 2009, nine (9) trenches were excavated to vertically and horizontally investigate the extent of hydrocarbon impacted soil at the site. Selected soil samples were submitted to the laboratory for determination of BTEX and TPH concentrations.

Trench T-1 was located in the northeast corner of the Main Excavation. The trench was completed to a total depth of approximately ten (10) feet bgs. One (1) soil sample (T-1 @ 10' bgs) was collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL.

Trench T-2 was located in the eastern portion of the Main Excavation. The trench was completed to a total depth of approximately of approximately eighteen (18) feet bgs. Three (3) soil samples (T-2 @ 12' bgs, T-2 @ 14' bgs and T-2 @ 18' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from 0.0023 mg/Kg for soil sample T-2 @ 18' bgs to 34.76 mg/Kg for soil sample T-2 @ 12' bgs. BTEX concentrations ranged from 0.0353 mg/Kg for soil sample T-2 @ 18' bgs to 930.1 mg/Kg for soil sample T-2 @ 12' bgs. TPH concentrations ranged from 131.3 mg/Kg for soil sample T-2 @ 18' bgs to 28,240 mg/Kg for soil sample T-2 @ 12' bgs.

Trench T-3 was located in the western portion of the Main Excavation. The trench was completed to a total depth of approximately thirty (30) feet bgs. Six (6) soil samples (T-3 @ 12' bgs, T-3 @ 14' bgs, T-3 @ 18' bgs, T-3 @ 22', T-3 @ 26' bgs and T-3 @ 30' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from less than the appropriate laboratory MDL for soil samples T-3 @ 26' bgs and T-3 @ 30' bgs to 11.28 mg/Kg for soil sample T-3 @ 18' bgs. BTEX concentrations ranged from 0.0568 mg/Kg for soil sample T-3 @ 22' bgs to 255.439 mg/Kg for soil sample T-3 @ 14' bgs. TPH concentrations ranged from 59 mg/Kg for soil sample T-3 @ 22' bgs to 18,110 mg/Kg for soil sample T-3 @ 18' bgs.

Trench T-4 was located in the southern portion of the Main Excavation. The trench was completed to a total depth of approximately thirty (30) feet bgs. Six (6) soil samples (T-4 @ 12' bgs, T-4 @ 14' bgs, T-4 @ 18' bgs, T-4 @ 22' bgs, T-4 @ 26' bgs and T-4 @ 30' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from 8.783 mg/Kg for soil sample T-4 @ 14' to 48.18 mg/Kg for soil sample T-4 @ 12' bgs. BTEX concentrations ranged from 303.923 mg/Kg for soil sample T-4 @ 14' bgs to 1,097.58 mg/Kg for soil sample T-4 @ 12' bgs. TPH concentrations ranged from 8,224 mg/Kg for soil sample T-4 @ 14' bgs to 37,550 mg/Kg for soil sample T-4 @ 12' bgs.

Trench T-5 was located in the southern portion of the West Excavation. The trench was completed to a total depth of approximately fourteen (14) feet bgs. One (1) soil sample (T-5 @ 14' bgs) was collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated a benzene concentration of 0.0078 mg/Kg, a BTEX concentration of 0.0119 mg/Kg and a TPH concentration of 32 mg/kg.

Trench T-6 was located at the release point to a total depth of approximately eighteen (18) feet bgs. Three (3) soil samples (T-6 @ 10' bgs, T-6 @ 14' bgs and T-6 @ 18' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from less than the laboratory MDL for soil sample T-6 @ 18' bgs to 1.999 mg/Kg for soil sample T-6 @ 10' bgs. BTEX concentrations ranged from 0.006 mg/Kg for soil sample T-6 @ 18' bgs to 89.099 mg/Kg for soil sample T-6 @ 10' bgs. TPH concentrations ranged from 28.3 mg/Kg for soil sample T-6 @ 14' bgs to 3,996 mg/Kg for soil sample T-6 @ 10' bgs.

Trench T-7 was located to the north of the release point adjacent to the Plains pipelines. The trench was completed to a total depth of approximately eighteen (18) feet bgs. Three (3) soil samples (T-7 @ 10' bgs, T-7 @ 14' bgs and T-7 @ 18' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from less than the laboratory MDL for soil sample T-7 @ 18' bgs to 9.257 mg/Kg for soil sample T-7 @ 10' bgs. BTEX concentrations ranged from 153.34 mg/Kg for soil sample T-7 @ 18' bgs to 212.818 mg/Kg for soil sample T-7 @ 14' bgs. TPH concentrations ranged from 9,061 mg/Kg for soil sample T-7 @ 18' bgs to 9,840 mg/Kg for soil sample T-7 @ 10' bgs.

Trench T-8 was located in the central portion of the Main Excavation. The trench was completed to a total depth of approximately fourteen (14) feet bgs. Two (2) soil samples (T-8 @ 10' bgs and T-8 @ 14' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL, with the exception of soil sample T-8 @ 10' bgs which exhibited a TPH concentration of 91.7 mg/Kg.

Trench T-9 was located in the southeast corner of the Main Excavation. The trench was completed to a total depth of approximately fourteen (14) feet bgs. Two (2) soil samples (T-9 @ 10' bgs and T-9 @ 14' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from 0.0062 mg/Kg for soil sample T-9 @ 14' bgs to 0.0072 mg/Kg for soil sample T-9 @ 10' bgs. BTEX concentrations ranged from 0.0249 mg/Kg for soil sample T-9 @ 14' bgs to 1.3389 mg/Kg for soil sample T-9 @ 10' bgs. TPH concentrations ranged from 106 mg/Kg for soil sample T-9 @ 14' bgs to 4,751 mg/Kg for soil sample T-9 @ 10' bgs.

On May 28, 2009, four (4) soil samples (Main Exc. ESW-1 @ 8' bgs, Main Exc. ESW-2 @ 5' bgs, Main Exc. ESW-3 @ 3' bgs and Main Exc. SSW @ 9.5' bgs) were collected from the Main Excavation sidewalls and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all the soil samples submitted, with the exception of soil samples Main Exc. ESW-1 @

8' bgs and Main Exc. ESW-3 @ 3' bgs, which exhibited TPH concentrations of 38.8 mg/Kg and 86.2 mg/Kg, respectively.

Based on the analytical results of the soil samples collected from the delineation trenches, further investigation of the vertical extent of hydrocarbon impacted soil at the site was warranted.

On July 1 and 2, 2009, three (3) soil borings (SB-1, SB-2 and SB-3) were advanced at the site to further delineate the vertical extent of hydrocarbon impacted soil at the site. Soil boring logs are provided as Appendix A. Soil samples were collected at five (5) foot drilling intervals and field screened using a Photo-Ionization Detector (PID). Selected soil samples were submitted to the laboratory for determination of concentrations of BTEX, TPH and chlorides.

Soil boring SB-1 was located in the southern portion of the Main Excavation at approximately ten (10) feet bgs. The soil boring was advanced to a total depth of approximately seventy (70) feet bgs. Soil samples collected at drilling depths of five (5) feet, fifteen (15) feet, twenty five (25) feet, thirty five (35) feet, forty five (45) feet, fifty (50) feet and fifty five (55) feet were submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from less than the appropriate laboratory MDL for soil samples SB-1/MW-1 @ 45', SB-1/MW-1 @ 50' and SB-1/MW-1 @ 55' to 1.447 mg/Kg for soil sample SB-1/MW-1 @ 5'. BTEX concentrations ranged from 0.0025 mg/Kg for soil sample SB-1/MW-1 @ 50' to 79.4979 mg/Kg for soil sample SB-1/MW-1 @ 25'. TPH concentrations ranged from 445 mg/Kg for soil sample SB-1/MW-1 @ 55' to 9,655 mg/Kg for soil sample SB-1/MW-1 @ 25'. Chloride concentrations ranged from 10.3 mg/Kg for soil sample SB-1/MW-1 @ 25' to 179 mg/Kg for soil sample SB-1/MW-1 @ 55'. During advancement of the soil boring, groundwater was encountered at approximately fifty four (54) feet drilling depth or approximately sixty four (64) feet bgs. On July 1, 2009, soil boring SB-1 was converted to monitor well MW-1.

Soil boring SB-2 was located in the northwest portion of the Main Excavation at approximately ten (10) feet bgs. The soil boring was advanced to a total depth of approximately seventy (70) feet bgs. Soil samples collected at drilling depths of five (5) feet, fifteen (15) feet, twenty five (25) feet, thirty five (35) feet, forty five (45) feet, fifty (50) feet and fifty five (55) feet were submitted to the laboratory for analysis. The laboratory analytical results indicated benzene concentrations were less than the appropriate laboratory MDL in all the submitted soil samples, with the exception of soil sample SB-2 @ 15', which exhibited a benzene concentration of 0.2671 mg/Kg. BTEX concentrations ranged from less than the appropriate laboratory MDL for soil samples SB-2 @ 45', SB-2 @ 50' and SB-2 @ 55' to 26.391 mg/Kg for soil sample SB-2 @ 5'. TPH concentrations ranged from 57.8 mg/Kg for soil sample SB-2 @ 35' to 4,655 mg/Kg for soil sample SB-2 @ 5'. Chloride concentrations ranged from less than the laboratory MDL for soil sample SB-2 @ 35' to 952 mg/Kg for soil sample SB-2 @ 55'. During the advancement of the soil boring, groundwater was encountered at approximately fifty four (54) feet drilling depth or approximately sixty four (64) feet bgs. A temporary casing was installed in the soil boring to allow a "preliminary" groundwater sample to be collected for analysis. On July 2, 2009, a groundwater sample (Prelim GW SB-2) was collected from the temporary casing and submitted to the laboratory for analysis. Following the collection of the groundwater sample, the temporary casing was removed from the soil boring and the soil boring was plugged with cement and bentonite, as required by the New Mexico Office of the State Engineer (NMOSE). A description of the analytical results of the collected groundwater sample (Prelim GW SB-2) is included in the Summary of Groundwater Remediation Activities below.

Soil boring SB-3 was located to the north of the release point adjacent to the Plains pipeline, to a total depth of approximately seventy (70) feet bgs. Soil samples collected at five (5) feet, fifteen (15) feet, twenty five (25) feet, thirty five (35) feet, forty five (45) feet, fifty (50) feet, fifty five (55) feet and sixty (60) feet were submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations were less than the laboratory MDL for all the submitted soil samples, with the exception of soil sample SB-3 @ 5', which exhibited a benzene concentration of 0.0644 mg/Kg. BTEX concentrations ranged from less than the laboratory MDL for soil sample SB-3 @ 35' to 17.728 mg/Kg for soil sample SB-3 @ 25'. TPH concentrations ranged from 72.2 mg/Kg for soil sample SB-3 @ 50' to 6,226 mg/Kg for soil sample SB-3 @ 5'. Chloride concentrations ranged from 8.94 mg/Kg for soil sample SB-3 @ 50' to 152 mg/Kg for soil sample SB-3 @ 5'. During the advancement of the soil boring, groundwater was encountered at approximately sixty four (64) feet bgs. A temporary casing was installed in the soil boring to allow a "preliminary" groundwater sample to be collected for analysis. On July 2, 2009, a groundwater sample (Prelim GW SB-3) was collected from the temporary casing and submitted to the laboratory for analysis. Following the collection of the groundwater sample, the temporary casing was removed from the soil boring and the soil boring was plugged with cement and bentonite, as required by the NMOSE. A description of the analytical results of the collected groundwater sample (Prelim GW SB-3) is included in the Summary of Groundwater Remediation Activities below.

On September 18, 2009, approximately five hundred (500) cubic yards of impacted soil was placed in a treatment cell and treated by blending and aeration methods.

On September 24, 2009, one (1) soil sample (Treatment Cell #1) was collected from the treatment cell and submitted to the laboratory for analysis. Laboratory analytical results indicated a benzene concentration of 1.539 mg/Kg, a BTEX concentration of 136.31 mg/Kg and a TPH concentration of 11,310 mg/Kg.

On September 30, 2009, three (3) soil samples (West Exc. NSW-1, West Exc. WSW-1 and West Exc. SSW-1) were collected from the West Excavation sidewalls and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all the submitted soil samples, with the exception of soil sample West Exc. SSW-1, which exhibited a TPH concentration of 20.7 mg/Kg.

Two (2) soil samples (West Exc. Floor-1 and West Exc. Floor-2) were collected from the floor of the excavation and submitted to the laboratory for analysis. The laboratory analytical results indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all the submitted soil samples.

On November 10, 2009, at the request of the NMOCD, the excavations were divided into seventy five (75) foot grids. Fourteen (14) soil samples (GP #1 @ 6', GP #2 @ Grade, GP #3 @ Grade, GP #4 @ 5', GP #5 @ 7', GP #6 @ 9', GP #7 @ 9', GP #8 @ 9', GP #9 @ 10', GP #10 @ 7', GP #11 @ 7', GP #12 @ 10', GP #13 @ 10' and GP #14 @ 12') were collected from the Main Excavation grid points and submitted to the laboratory for analysis of concentrations of TPH and chloride. Laboratory analytical results indicated TPH concentrations ranged from less than the laboratory MDL for soil sample GP #8 @ 9' to 4,696 mg/Kg for soil sample GP #6 @

9'. Chloride concentrations ranged from less than the appropriate laboratory MDL for soil samples GP #6 @ 9' and GP # 12 @ 10' to 3,510 mg/Kg for soil sample GP #3 @ Grade.

Two (2) soil samples (GP #15 @ 10' and GP # 16 @ 10') were collected from the West Excavation grid points and submitted to the laboratory for analysis of concentrations of TPH and chlorides. Laboratory analytical results indicated TPH concentrations ranged from less than the laboratory MDL for soil sample GP #16 @ 10' to 69.7 mg/Kg for soil sample GP #15 @ 10'. Chloride concentrations ranged from 9.57 mg/Kg for soil sample GP # 16 @ 10' to 62.9 mg/Kg for soil sample GP #15 @ 10'.

On December 10, 2009, two (2) soil borings (SB #4 and SB #5) were installed up gradient of the excavation to evaluate the potential groundwater impact from an up gradient, off-site source.

Soil boring SB #4 was located approximately two hundred fifty (250) feet to the north northwest of the site, to a total depth of approximately seventy five (75) feet bgs. Soil samples collected at ten (10) feet, twenty (20) feet, thirty (30) feet, forty (40) feet and fifty (50) feet were submitted to the laboratory for analysis of concentrations of chlorides. Laboratory analytical results indicated chloride concentrations ranged from less than the laboratory MDL for soil sample SB #4 @ 50' to 85.3 mg/Kg for soil sample SB #4 @ 10'. Groundwater was encountered at approximately sixty four (64) feet bgs in the soil boring. A temporary casing was installed in the soil boring to allow a "preliminary" groundwater sample to be collected for analysis. On December 22, 2009, a groundwater sample (SB-4 GW) was collected from the temporary casing and submitted to the laboratory for analysis. Following the collection of the groundwater sample, the temporary casing was removed from the soil boring and the soil boring was plugged with cement and bentonite, as required by the NMOSE. A description of the analytical results of the collected groundwater sample (SB-4 GW) is included in the Summary of Groundwater Remediation Activities below.

Soil boring SB #5 was located approximately seven hundred fifteen (715) feet to the north northwest of the site to a total depth of approximately eighty (80) feet bgs. Soil samples collected at ten (10) feet, twenty (20) feet, thirty (30) feet, forty (40) feet and forty five (45) feet were submitted to the laboratory for analysis of concentrations of chlorides. Laboratory analytical results indicated chloride concentrations ranged from 6.71 mg/Kg for soil sample SB #5 @ 45' to 263 mg/Kg for soil sample SB #5 @ 20'. Groundwater was encountered at approximately sixty four (64) feet bgs in the soil boring. A temporary casing was installed in the soil boring to allow a "preliminary" groundwater sample to be collected for analysis. On December 22, 2009, a groundwater sample (SB-5 GW) was collected from the temporary casing and submitted to the laboratory for analysis. Following the collection of the groundwater sample, the temporary casing was removed from the soil boring and the soil boring was plugged with cement and bentonite, as required by the NMOSE. A description of the analytical results of the collected groundwater sample (SB-5 GW) is included in the Summary of Groundwater Remediation Activities below.

On April 28 and 29, 2010, Basin transported approximately 1,440 cy of impacted soil to Sundance Services, Inc. (NMOCD Permit # NM-01003) for disposal.

SUMMARY OF GROUNDWATER REMEDIATION ACTIVITIES

On July 2, 2009, groundwater samples were collected from the temporary casing installed in soil borings SB-2 and SB-3. The analytical results of the groundwater collected from SB-2 indicated a benzene concentration of 0.0063 mg/L, a toluene concentration of 0.0158 mg/L, an ethyl-benzene concentration of 0.0054 mg/L and a total xylene concentration of 0.0107 mg/L. The results further indicated a chloride concentration of 10,200 mg/L and a TDS concentration of 19,700 mg/L. The analytical results of the groundwater collected from SB-3 indicated benzene and BTEX concentrations were less than the appropriate laboratory MDL. The results further indicated a chloride concentration of 10,500 mg/L and a TDS concentration of 20,500 mg/L. Laboratory analytical results indicated benzene and BTEX concentrations were less than the NMOCD regulatory standards for SB-2 and SB-3. Laboratory analytical results exceeded NMOCD regulatory standards for concentrations of chlorides and TDS in SB-1 and SB-2. Table 2 summarizes the Concentrations of Benzene, BTEX, Chlorides and Total Dissolved Solids in Groundwater.

The site monitor well (MW-1) was gauged, purged and sampled on July 6, 2009, October 21, 2009 and March 11, 2010. The monitor well was gauged and purged of a minimum of three (3) well volumes of water or until the wells were dry using a PVC bailer or electrical Grundfos Pump. Groundwater was allowed to recharge and samples were obtained using disposable Teflon bailers. Water samples were stored in clean, glass containers provided by the laboratory and placed on ice in the field. Purge water was collected in a trailer mounted polystyrene tank and disposed of at an approved disposal in Monument, New Mexico.

The analytical results of the July 6, 2009, groundwater sampling event indicated all BTEX constituent concentrations were less than the laboratory MDL. The analytical results indicated a chloride concentration of 5,300 mg/L and a TDS concentration of 14,300 mg/L. Laboratory analytical results indicated benzene and BTEX concentrations were less than the NMOCD regulatory standards. Analytical results indicated concentrations of chlorides and TDS exceeded NMOCD regulatory standards.

The analytical results of the October 21, 2009, groundwater sampling event indicated a benzene concentration of 0.0125 mg/L, a toluene concentration of 0.0049 mg/L, ethyl-benzene and total xylene concentrations were less than the appropriate laboratory MDL. Laboratory analytical results indicated benzene concentrations exceeded NMOCD regulatory standards. Analytical results indicated concentrations of toluene, ethyl-benzene and total xylenes were less than NMOCD regulatory standards.

The analytical results of the March 11, 2010, groundwater sampling event indicated a benzene concentration of 0.072 mg/L, a toluene concentration of 0.0243 mg/L, an ethyl-benzene concentration of 0.002 mg/L and total xylene concentration of 0.0017 mg/L. Laboratory analytical results indicated benzene concentrations exceeded NMOCD regulatory standards. Analytical results indicated concentrations of toluene, ethyl-benzene and total xylenes were less than NMOCD regulatory standards.

On December 22, 2009, groundwater samples were collected from the temporary casing installed in soil boring SB-4 and SB-5. Analytical results of the groundwater collected from SB-4 indicated chloride concentration of 8,580 mg/L and a TDS concentration of 15,700 mg/L. The

analytical results of the groundwater collected from SB-5 indicated a chloride concentration of 9,920 mg/L and a TDS concentration of 18,200 mg/L. Laboratory analytical results indicated concentrations of chlorides and TDS exceeded NMOCD regulatory standards in the two (2) up gradient soil borings.

The 14 Inch Vac to Jal release site is located approximately 1,147 feet to the south-southeast of a documented groundwater remediation site (Arco South Justis Unit F-230). Information regarding this release can be found on the NMOCD imaging system.

PROPOSED SOIL CLOSURE STRATEGY

Plains proposes the following soil remediation activities designed to progress the 14 Inch Vac to Jal Legacy release site toward an NMOCD approved soil closure:

- Plains will mechanically screen the on-site stockpiles to segregate large blocks of caliche from the soil. The large blocks of caliche will be placed in the existing excavation during backfilling activities. Plains proposes to collect a stockpile soil sample for each 500 cubic yards of segregated soil. The soil samples will be submitted to the laboratory and analyzed for concentrations of BTEX using EPA method 8021b and TPH using SW-846 8015M. Provided the analytical results indicate the TPH concentration of the soil sample is less than 5,000 mg/Kg as approved by the NMOCD, the soil will be stockpiled and used as backfill. Should the analytical results indicate the TPH concentration of any of the stockpile soil samples exceed 5,000 mg/Kg, the affected soil will be blended and re-sampled until TPH concentrations are less than 5,000 mg/Kg TPH.
- Plains proposes to backfill the excavation with the blended material. The excavation will be backfilled and compacted in twelve (12) inch lifts. The upper one half (0.5) to one (1) foot of soil will be non-impacted soil locally purchased. Following backfill activities the surface will be contoured to fit the surrounding topography. Reseeding of the site with vegetation acceptable to the landowner will take place at the conclusion of the proposed remediation activities.

REPORTING

On completion of the proposed soil closure strategy activities, Plains will submit a Remediation Summary and Site Closure Request for NMOCD approval. On NMOCD approval, Plains will request permission to plug and abandon the on-site monitor well.

LIMITATIONS

Basin Environmental Consulting, LLC has prepared this Remediation Summary and Soil Closure Strategy to the best of its ability. No other warranty, expressed or implied, is made or intended.

Basin Environmental Consulting, LLC has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. Basin Environmental Consulting, LLC has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and

that the information provided in documents or statements is true and accurate. Basin Environmental Consulting, LLC has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin Environmental Consulting, LLC also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of Plains Pipeline, L.P. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Consulting, LLC and/or Plains Pipeline, L.P.

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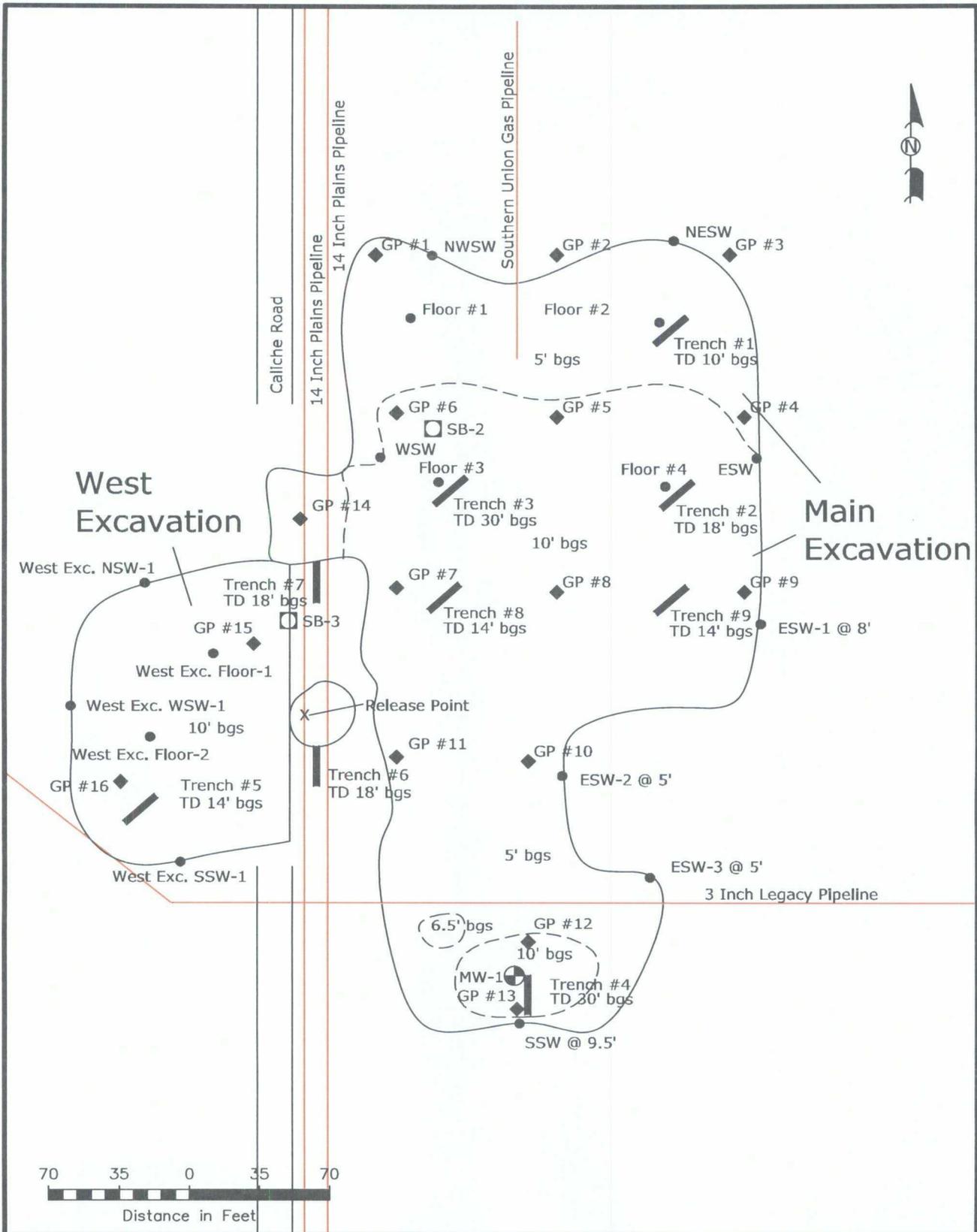
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Figures



LEGEND:

- Soil Sample Location
- Pipeline
- Excavation Extent
- ⊕ Monitor Well Location
- Soil Boring Location

Figure 2
 Site and Sample Location Map
 Plains Pipeline, L.P.
 14-Inch Vac to Jal - Legacy
 Lea County, NM
 SRS # 2009-092
 1RP-2162

Basin Environmental Consulting

Scale: 1" = 70'	Drawn By: CDS	Prepared By: CDS
November 11, 2009		

Tables

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDES IN SOIL

PLAINS PIPELINE, L.P.
14" VAC TO JAL - LEGACY
LEA COUNTY, NEW MEXICO
SRS: 2009-092

NMOC REFERENCE NO: IRP-2162

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	DATE ANALYZED	SOIL STATUS	METHOD: EPA SW 846-802 LB, 5030				METHOD: 8015M				TOTAL TPH C ₉ -C ₃₅ (mg/Kg)	E 300 CHLORIDE (mg/Kg)	
					BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M.P.-XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₂ (mg/Kg)	DRO C ₁₂ -C ₂₈ (mg/Kg)			ORO C ₂₈ -C ₃₅ (mg/Kg)
Chloride Baseline	N/A	04/15/09	04/17/09	N/A											796
Stockpile #1	N/A	05/18/09	05/27/09	N/A	3.549	88.56	63.06	88.09	32.31	275.569	3.990	4.890	<333	8.880	-
Stockpile #2	N/A	05/18/09	05/27/09	N/A	23.2	233	111	165.8	12.4	545.4	8.260	9.340	669	18.269	-
Main Exc. NWSW	4.5 Feet	05/18/09	05/27/09	In-Situ	0.0073	0.0354	0.0158	0.0249	0.0099	0.0924	18	18.1	<15.4	36.1	-
Main Exc. NESW	4.5 Feet	05/18/09	05/27/09	In-Situ	0.0013	<0.0022	<0.0011	<0.0022	<0.0011	0.0013	<16.4	43.3	<16.4	43.3	-
Main Exc. WSW	9 Feet	05/18/09	05/27/09	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	<16.2	<16.2	<16.2	-
Main Exc. ESWS	8 Feet	05/18/09	05/27/09	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.4	21.3	<15.4	21.3	-
Main Exc. Floor #1	5 Feet	05/18/09	05/27/09	In-Situ	0.0013	0.0033	<0.0010	<0.0021	<0.0010	0.0046	<15.4	19.8	<15.4	19.8	-
Main Exc. Floor #2	5 Feet	05/18/09	05/27/09	In-Situ	<2.397	26.82	41.51	71.76	27.42	167.51	4.460	7.640	<359	12.100	-
Main Exc. Floor #3	10 Feet	05/18/09	05/27/09	In-Situ	0.0022	0.0071	0.0013	<0.0020	<0.0010	0.0106	50.9	1.460	95.4	1,606.3	-
Main Exc. Floor #4	10 Feet	05/18/09	05/27/09	In-Situ	9.459	106.7	84.72	123	47.24	371.119	4.970	7.740	523	13,233	-
T-1 @ 10' bgs	10 Feet	05/26/09	05/31/09	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.4	<16.4	<16.4	<16.4	-
T-2 @ 12' bgs	12 Feet	05/26/09	05/31/09	In-Situ	34.76	323.9	189.7	285	96.74	930.1	10,300	16,500	1,440	28,240	-
T-2 @ 14' bgs	14 Feet	05/26/09	05/31/09	In-Situ	18.84	223.7	136.1	206	70.99	655.63	7,000	10,500	1,050	18,550	-
T-2 @ 18' bgs	18 Feet	05/26/09	05/31/09	In-Situ	0.0023	0.0088	0.0069	0.0121	0.0052	0.0353	22.3	109	<17.3	131.3	-
T-3 @ 12' bgs	12 Feet	05/26/09	05/31/09	In-Situ	4.046	55.43	43.23	66.87	23.7	193.276	3.550	6.450	725	10,725	-
T-3 @ 14' bgs	14 Feet	05/26/09	05/31/09	In-Situ	4.059	74.4	58.59	87.36	31.03	255.439	3.980	7.300	785	12,065	-
T-3 @ 18' bgs	18 Feet	05/26/09	05/31/09	In-Situ	11.28	83.91	48.65	73.01	24.87	241.72	5.930	11,100	1,080	18,110	-
T-3 @ 22' bgs	22 Feet	05/26/09	05/31/09	In-Situ	0.007	0.025	0.0085	0.011	0.0053	0.0568	<18.5	59	<18.5	59	-
T-3 @ 26' bgs	26 Feet	05/26/09	05/31/09	In-Situ	<0.1194	0.6279	1.565	4.657	2.401	9.2509	2.89	910	81.9	1,280.9	-
T-3 @ 30' bgs	30 Feet	05/26/09	05/31/09	In-Situ	<1.073	2.587	3.671	6.086	2.512	14.856	4.20	1,400	118	1,938	-
T-4 @ 12' bgs	12 Feet	05/26/09	05/31/09	In-Situ	48.18	400.1	211.1	327.2	111	1097.58	13,200	22,300	2,050	37,550	-
T-4 @ 14' bgs	14 Feet	05/26/09	05/31/09	In-Situ	8.783	102	63.4	96	33.74	303.923	3,100	4,600	524	8,224	-
T-4 @ 18' bgs	18 Feet	05/26/09	05/31/09	In-Situ	29.02	277.2	142.5	215.4	73.52	737.64	9,680	14,200	1,340	25,220	-
T-4 @ 22' bgs	22 Feet	05/26/09	05/31/09	In-Situ	20.63	163.3	80.59	111.1	39.38	415	8,240	13,700	1,130	23,070	-
T-4 @ 26' bgs	26 Feet	05/26/09	05/31/09	In-Situ	31.62	213.1	111	158.5	55.5	569.72	5,040	7,900	853	13,793	-
T-4 @ 30' bgs	30 Feet	05/26/09	05/31/09	In-Situ	23.12	250.2	143	214.8	74.02	705.14	7,750	11,000	1,290	20,040	-
T-5 @ 14' bgs	14 Feet	05/26/09	05/31/09	In-Situ	0.0078	0.0041	<0.0012	<0.0025	<0.0012	0.0119	<18.6	32	<18.6	32	-
T-6 @ 10' bgs	10 Feet	05/26/09	05/31/09	In-Situ	1.999	20.67	21.2	32.8	12.43	89.099	1,080	2,620	296	3,996	-
T-6 @ 14' bgs	14 Feet	05/26/09	05/31/09	In-Situ	0.0013	0.0053	0.0015	<0.0025	<0.0013	0.0081	<18.9	28.3	<18.9	28.3	-
T-6 @ 18' bgs	18 Feet	05/26/09	05/31/09	In-Situ	<0.0012	0.0042	0.0018	<0.0024	<0.0012	0.006	<18.3	66.6	<18.3	66.6	-
T-7 @ 10' bgs	10 Feet	05/26/09	05/31/09	In-Situ	9.257	56.21	35.25	54.67	19.97	175.357	3,460	5,480	900	9,840	-
T-7 @ 14' bgs	14 Feet	05/26/09	05/31/09	In-Situ	5.998	62.42	46.94	71.87	25.59	212.818	3,170	5,270	799	9,239	-
T-7 @ 18' bgs	18 Feet	05/26/09	05/31/09	In-Situ	<1.2	33.32	37.7	59.77	22.55	153.34	3,190	5,010	861	9,061	-
T-8 @ 10' bgs	10 Feet	05/26/09	05/31/09	In-Situ	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<17.0	47.4	44.3	91.7	-
T-8 @ 14' bgs	14 Feet	05/26/09	05/31/09	In-Situ	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<17.4	<17.4	<17.4	<17.4	-
T-9 @ 10' bgs	10 Feet	05/26/09	05/31/09	In-Situ	0.0072	0.3247	0.2975	0.4625	0.247	1.3389	383	3,720	648	4,751	-

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDES IN SOIL

PLAINS PIPELINE, L.P.
14" VAC TO JAL - LEGACY
LEA COUNTY, NEW MEXICO
SRS: 2009-092

NMOC REFERENCE NO: IRP-2162

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	DATE ANALYZED	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030				METHOD: 80ISM					TOTAL TPH C ₆ -C ₃₅ (mg/Kg)	E 300 CHLORIDE (mg/Kg)
					BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M.P.-XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₂ (mg/Kg)	DRO C ₁₂ -C ₃₈ (mg/Kg)	ORO C ₃₈ -C ₃₅ (mg/Kg)		
T-9 @ 14' bgs	14 Feet	05/26/09	05/31/09	In-Situ	0.0062	<0.0023	0.0018	0.0097	0.0072	0.0249	<17.6	69.7	36.3	106	-
Main Exc. ESW-1 @ 8' bgs	8 Feet	05/28/09	06/01/09	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.8	38.8	<16.8	38.8	-
Main Exc. ESW-2 @ 5' bgs	5 Feet	05/28/09	06/01/09	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	-
Main Exc. ESW-3 @ 3' bgs	3 Feet	05/28/09	06/01/09	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.5	59.9	26.3	86.2	-
Main Exc. SSW @ 9.5' bgs	9.5 Feet	05/28/09	06/01/09	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.6	<16.6	<16.6	<16.6	-
SB-1 / MW-1 @ 5'	15 feet	07/01/09	07/10/09	In-Situ	1.447	13.56	10.15	14.23	6.562	45.949	731	2,310	<183	3,041	53.4
SB-1 / MW-1 @ 15'	25 Feet	07/01/09	07/10/09	In-Situ	1.197	12.27	8.475	12.21	5.658	39.81	551	1,980	126	2,657	23
SB-1 / MW-1 @ 25'	35 Feet	07/01/09	07/10/09	In-Situ	0.5279	18.58	18.72	29.75	11.92	79.4979	1,950	7,270	435	9,655	10.3
SB-1 / MW-1 @ 35'	45 Feet	07/01/09	07/10/09	In-Situ	0.556	10.74	17.45	30.49	11.55	70.7856	66.8	827	51.6	945.4	12.5
SB-1 / MW-1 @ 45'	55 Feet	07/01/09	07/10/09	In-Situ	<0.0010	0.0127	0.0642	0.1268	0.0578	0.2615	98	1,060	70.7	1,229.1	22.1
SB-1 / MW-1 @ 50'	60 Feet	07/01/09	07/10/09	In-Situ	<0.0010	<0.0021	<0.0010	0.0025	<0.0010	0.0025	336	2,910	195	3,441	19.6
SB-1 / MW-1 @ 55'	65 Feet	07/01/09	07/10/09	In-Situ	<0.0011	<0.0021	0.0068	0.0094	0.0083	0.0245	25.8	392	27.6	445	179
SB-2 @ 5'	15 Feet	07/01/09	07/14/09	In-Situ	<0.0279	2.41	7.296	11.59	5.095	26.391	904	3,610	141	4,655	47.7
SB-2 @ 15'	25 Feet	07/01/09	07/13/09	In-Situ	0.2671	4.984	2.384	9.315	3.829	20.7791	555	2,210	107	2,872	34
SB-2 @ 25'	35 Feet	07/01/09	07/12/09	In-Situ	<0.0011	<0.0023	0.0019	0.0058	0.0032	0.0109	21.1	196	<16.9	217.1	32.3
SB-2 @ 35'	45 Feet	07/01/09	07/10/09	In-Situ	<0.0010	<0.0021	0.0032	0.0078	0.0035	0.0145	<15.4	57.8	<15.4	57.8	<15.15
SB-2 @ 45'	55 Feet	07/01/09	07/13/09	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	27.2	261	20.2	308.4	51.2
SB-2 @ 50'	60 Feet	07/01/09	07/12/09	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	19.6	105	<16.0	124.6	47.1
SB-2 @ 55'	65 Feet	07/01/09	07/12/09	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	16.8	86.8	<16.8	103.6	95.2
SB-3 @ 5'	5 Feet	07/02/09	07/13/09	In-Situ	0.0644	1.411	1.604	2.708	0.9809	6.7683	1,550	4,450	226	6,226	152
SB-3 @ 15'	15 Feet	07/02/09	07/14/09	In-Situ	<0.0272	0.6387	2.621	4.548	1.919	9.7267	477	2,660	155	3,292	73
SB-3 @ 25'	25 Feet	07/02/09	07/14/09	In-Situ	<0.5550	2.969	4.529	7.355	2.875	17.728	887	4,560	268	5,715	54.4
SB-3 @ 35'	35 Feet	07/02/09	07/10/09	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	103	<15.6	103	24.8
SB-3 @ 45'	45 Feet	07/02/09	07/10/09	In-Situ	<0.0010	<0.0021	0.0023	0.0054	0.0028	0.0105	17.3	113	18	148.3	17.2
SB-3 @ 50'	50 Feet	07/02/09	07/10/09	In-Situ	<0.0010	<0.0020	0.0015	0.0035	0.0018	0.0068	<15.3	72.2	<15.3	72.2	8.94
SB-3 @ 55'	55 Feet	07/02/09	07/10/09	In-Situ	<0.0010	0.0035	0.0142	0.0305	0.0137	0.0619	23.3	159	18.2	200.5	24.1
SB-3 @ 60'	60 Feet	07/02/09	07/10/09	In-Situ	<0.0010	<0.0021	0.0038	0.0087	0.0041	0.0166	23.7	126	18.5	168.2	46.1
Treatment Cell #1	Backfill	09/24/09	09/30/09	In-Situ	1.539	31.4	30.15	51.23	21.99	136.31	2,560.0	8,530	220.0	11,310.0	-
West Exc. NSW-1	8 Feet	09/30/09	10/03/09	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.7	<16.7	<16.7	<16.7	-
West Exc. WSW-1	8 Feet	09/30/09	10/03/09	In-Situ	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0024	<18.3	<18.3	<18.3	<18.3	-
West Exc. SSW-1	8 Feet	09/30/09	10/03/09	In-Situ	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<17.2	20.7	<17.2	20.7	-
West Exc. Floor-1	10 Feet	09/30/09	10/03/09	In-Situ	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<17.6	<17.6	<17.6	<17.6	-
West Exc. Floor-2	10 Feet	09/30/09	10/03/09	In-Situ	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0024	<18.0	<18.0	<18.0	<18.0	-
GP #1 @ 6'	6 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	<16.1	31.4	<16.1	31.4	119
GP #2 @ Grade	Surface	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	31.1	522	134	687.1	11.6
GP #3 @ Grade	Surface	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	<15.5	263	74.8	337.8	3.510
GP #4 @ 5'	5 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	<16.3	19.7	<16.3	19.7	772

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDES IN SOIL

PLAINS PIPELINE, L.P.
14" VAC TO JAL - LEGACY
LEA COUNTY, NEW MEXICO
SRS: 2009-092

NMOC REFERENCE NO: IRP-2162

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	DATE ANALYZED	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030					METHOD: 8015M				TOTAL TPH C ₉ -C ₃₅ (mg/Kg)	E 300 CHLORIDE (mg/Kg)	
					BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M.P.-XYLENES (mg/Kg)	O-XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₂ (mg/Kg)	DRO C ₁₂ -C ₂₈ (mg/Kg)	ORO C ₂₈ -C ₃₅ (mg/Kg)			
GP #5 @ 7'	7 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	<15.7	62.1	<15.7	62.1	142
GP #6 @ 9'	9 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	216	4,190	290	4,696	<5.22
GP #7 @ 9'	9 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	<16.2	40.6	<16.2	40.6	71.5
GP #8 @ 9'	9 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	<16.5	<16.5	<16.5	<16.5	378
GP #9 @ 10'	10 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	36.4	286	16.2	338.6	6.72
GP #10 @ 7'	7 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	<15.9	23.2	<15.9	23.2	16.6
GP #11 @ 7'	7 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	<15.4	170	18.6	188.6	21.3
GP #12 @ 10'	10 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	688	3,670	227	4,585	<5.17
GP #13 @ 10'	10 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	<17.1	51.9	<17.1	51.9	219
GP #14 @ 12'	12 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	212	2,920	199	3,331	9.32
GP #15 @ 10'	10 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	<16.2	69.7	<16.2	69.7	62.9
GP #16 @ 10'	10 Feet	11/10/09	11/10/09	In-Situ	-	-	-	-	-	-	-	<18.8	<18.8	<18.8	<18.8	9.57
SB #4 @ 10'	10 Feet	12/10/09	12/15/09	In-Situ	-	-	-	-	-	-	-	-	-	-	-	85.3
SB #4 @ 20'	20 Feet	12/10/09	12/15/09	In-Situ	-	-	-	-	-	-	-	-	-	-	-	26.8
SB #4 @ 30'	30 Feet	12/10/09	12/15/09	In-Situ	-	-	-	-	-	-	-	-	-	-	-	61.8
SB #4 @ 40'	40 Feet	12/10/09	12/15/09	In-Situ	-	-	-	-	-	-	-	-	-	-	-	26.5
SB #4 @ 50'	50 Feet	12/10/09	12/15/09	In-Situ	-	-	-	-	-	-	-	-	-	-	-	<5.02
SB #5 @ 10'	10 Feet	12/10/09	12/15/09	In-Situ	-	-	-	-	-	-	-	-	-	-	-	117
SB #5 @ 20'	20 Feet	12/10/09	12/15/09	In-Situ	-	-	-	-	-	-	-	-	-	-	-	263
SB #5 @ 30'	30 Feet	12/10/09	12/15/09	In-Situ	-	-	-	-	-	-	-	-	-	-	-	55.5
SB #5 @ 40'	40 Feet	12/10/09	12/15/09	In-Situ	-	-	-	-	-	-	-	-	-	-	-	<6.71
SB #5 @ 45'	45 Feet	12/10/09	12/15/09	In-Situ	-	-	-	-	-	-	-	-	-	-	-	183

TABLE 2

CONCENTRATIONS OF BENZENE, BTEX, CHLORIDES AND TOTAL DISSOLVED SOLIDS IN GROUNDWATER

PLAINS PIPELINE, L.P.
 14-INCH VAC TO JAL LEGACY
 LEA COUNTY, NEW MEXICO
 PLAINS SRS NO. 2009-092
 NMOCD REFERENCE NO: 1R-2162

SAMPLE LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021B, 5030							CHLORIDES (mg/L)	TDS (mg/L)
		BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P-XYLENES (mg/L)	O-XYLENES (mg/L)	TOTAL BTEX (mg/L)			
Prelim GW (SB-2)	07/02/09	0.0063	0.0158	0.0054	0.007	0.0037	0.0382	10,200	19,700	
Prelim GW (SB-3)	07/02/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	10,500	20,500	
MW-1	07/06/09	<0.001	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	5,300	14,300	
MW-1	10/21/09	0.0125	0.0049	<0.0010	<0.0020	<0.0010	0.0174	-	-	
MW-1	03/11/10	0.072	0.0243	0.002	<0.0020	0.0017	0.1	-	-	
SB-4 GW	12/22/09	-	-	-	-	-	-	8,580	15,700	
SB-5 GW	12/22/09	-	-	-	-	-	-	9,920	18,200	
NMOCD CRITERIA		0.01	0.75	0.75	TOTAL XYLENES 0.62			250	10,000	

TABLE 2

CONCENTRATIONS OF BENZENE, BTEX, CHLORIDES AND TOTAL DISSOLVED SOLIDS IN GROUNDWATER

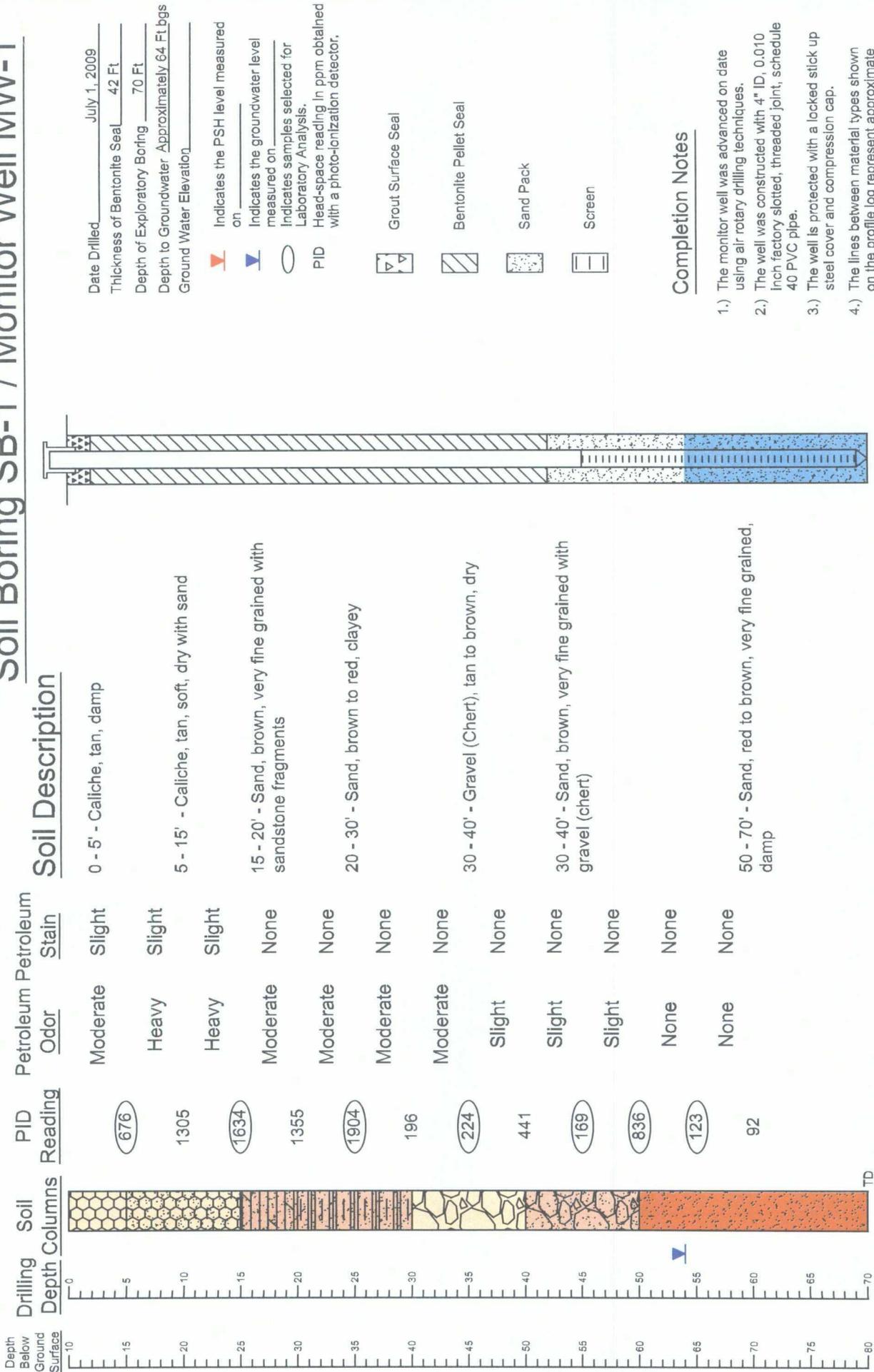
PLAINS PIPELINE, L.P.
 14-INCH VAC TO JAL LEGACY
 LEA COUNTY, NEW MEXICO
 PLAINS SRS NO. 2009-092
 NMOCD REFERENCE NO: 1R-2162

SAMPLE LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021B, 5030							CHLORIDES (mg/L)	TDS (mg/L)
		BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P-XYLENES (mg/L)	O-XYLENES (mg/L)	TOTAL BTEX (mg/L)			
Prelim GW (SB-2)	07/02/09	0.0063	0.0158	0.0054	0.007	0.0037	0.0382	10,200	19,700	
Prelim GW (SB-3)	07/02/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	10,500	20,500	
MW-1	07/06/09	<0.001	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	5,300	14,300	
MW-1	10/21/09	0.0125	0.0049	<0.0010	<0.0020	<0.0010	0.0174	-	-	
MW-1	03/11/10	0.072	0.0243	0.002	<0.0020	0.0017	0.1	-	-	
MW-1	06/04/10	0.1407	0.0637	0.0047	0.0041	0.0026	0.2158	-	-	
SB-4 GW	12/22/09	-	-	-	-	-	-	8,580	15,700	
SB-5 GW	12/22/09	-	-	-	-	-	-	9,920	18,200	
NMOCD CRITERIA		0.01	0.75	0.75	TOTAL XYLENES 0.62			250	10,000	

Appendices

Appendix A
Soil Boring and Monitor Well Logs

Soil Boring SB-1 / Monitor Well MW-1



Date Drilled July 1, 2009
 Thickness of Bentonite Seal 42 Ft
 Depth of Exploratory Boring 70 Ft
 Depth to Groundwater Approximately 64 Ft bgs
 Ground Water Elevation _____

- Indicates the PSH level measured on _____
- Indicates the groundwater level measured on _____
- Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.

- Grout Surface Seal
- Bentonite Pellet Seal
- Sand Pack
- Screen

Completion Notes

- 1.) The monitor well was advanced on date using air rotary drilling techniques.
- 2.) The well was constructed with 4" ID, 0.010 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- 3.) The well is protected with a locked stick up steel cover and compression cap.
- 4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Boring Details
 SB-1
 Monitor Well Details
 MW-1

14-Inch Vac to Jal - Legacy
 Lea County, New Mexico
 Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS
 August 4, 2009
 Checked By: CDS

Soil Boring SB-2

Date Drilled July 1, 2009
 Thickness of Bentonite Seal 60 Ft
 Depth of Exploratory Boring 60 Ft
 Depth to Groundwater Approximately 64 Ft bgs
 Ground Water Elevation _____

-  Indicates the PSH level measured on _____
-  Indicates the groundwater level measured on _____
-  Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.

Notes

- 1.) The soil boring was advanced on date _____ using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Depth Below Ground Surface	Drilling Depth Columns	Soil	PID Reading	Petroleum Odor	Petroleum Stain	Petroleum Description
0						
5			1308	Heavy	Moderate	0 - 10' - Caliche, tan, soft, dry
10			1482	Heavy	Moderate	10 - 15' - Sand, brown, very fine grained with sandstone fragments, dry
15			1463	Heavy	None	15 - 20' - Sand, reddish brown, very fine grained with sandstone fragments, dry
20			529	Moderate	None	20 - 25' - Clay, reddish brown, sandy with sandstone fragments, dry
25			1116	Slight	None	25 - 30' - Sand, brown, some clay, damp
30			27.1	Slight	None	
35			94	Slight	None	30 - 45' - Sand, brown, with gravel (chert), dry
40			178	Slight	None	
45			157	Slight	None	
50			90.2	None	None	30 - 45' - Sand, brown, very fine grained with gravel (chert), damp
55			42.3	None	None	
60				None	None	
65				None	None	
70			46.1	None	None	

Soil Boring SB-3

Date Drilled July 2, 2009
 Thickness of Bentonite Seal 70 Ft.
 Depth of Exploratory Boring 70 Ft.
 Depth to Groundwater Approximately 64 Ft bgs
 Ground Water Elevation _____

-  Indicates the PSH level measured on _____
-  Indicates the groundwater level measured on _____
-  Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.

Soil Columns	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
	<u>1550</u>	Heavy	Heavy	0 - 5' - Caliche, tan, hard, dry
	1465	Heavy	Heavy	5 - 10' - Sand, tan, dry with caliche nodules
	<u>1128</u>	Heavy	Slight	10 - 20' - Sand, tan to white, dry with caliche nodules
	1367	Heavy	Slight	
	<u>1487</u>	Moderate	None	20 - 30' - Clay, brown, sandy with sandstone fragments, dry
	381	Moderate	None	
	<u>125</u>	Slight	None	30 - 35' - Clay, reddish brown, sandy, dry
	87	None	None	
	<u>75</u>	None	None	35 - 50' - Sand, reddish brown, dry with gravel
	<u>85.6</u>	None	None	
	<u>136</u>	None	None	
	96.1	None	None	50 - 70' - Sand, reddish brown, damp with gravel
	157	None	None	
	84.4	None	None	

Notes

- 1.) The soil boring was advanced on date using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Boring SB-4

Date Drilled December 10, 2009
 Thickness of Bentonite Seal 75 Ft
 Depth of Exploratory Boring 75 Ft
 Depth to Groundwater _____
 Ground Water Elevation _____

-  Indicates the PSH level measured on _____
-  Indicates the groundwater level measured on _____
-  Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.

Notes

- 1.) The soil boring was advanced on date using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Description

0 - 1' - Clay, brown, sandy with some white caliche
 1 - 6' - Caliche, white to grey, sandy, soft, dry

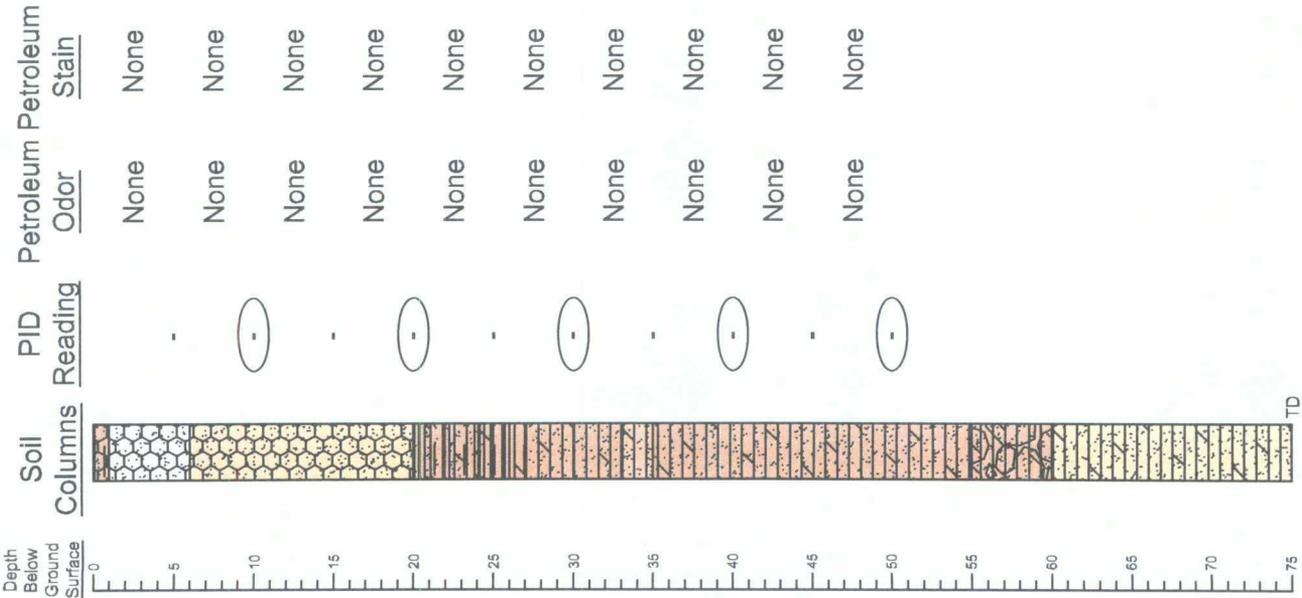
6 - 20' - Sand, light brown and caliche, white to grey, soft, dry

20 - 25' - Sand, brown to dark brown, coarse grained, clayey with some sandstone fragments
 25 - 27' - Clay, dark brown with some sandstone fragments, dry
 27 - 30' - Sand, dark brown, very fine grained with some sandstone fragments, dry
 30 - 33' - Sand, dark brown, very fine grained with some sandstone fragments and clayey, dry
 33 - 35' - Sand, reddish brown, very fine grained with some sandstone fragments

35 - 55' - Sand, dark brown to reddish brown with some sandstone fragments, dry, Lost circulation at 55' bgs, No sample collected at 55' bgs

55 - 60' - Sand, dark brown to reddish brown with some sandstone fragments and some well rounded gravel, dry

60 - 75' - Sand, brown with some sandstone, No samples collected due to lost circulation, wet



Soil Boring SB-5

Date Drilled December 10, 2009
 Thickness of Bentonite Seal 80 Ft
 Depth of Exploratory Boring 80 Ft
 Depth to Groundwater _____
 Ground Water Elevation _____

-  Indicates the PSH level measured on _____
-  Indicates the groundwater level measured on _____
-  Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.

Notes

- 1.) The soil boring was advanced on date using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Description

Soil Columns	PID Reading	Petroleum Odor	Petroleum Stain
0 - 23' - Caliche, white, and brown sand, dry	-	None	None
23 - 30' - Sand, brown, very fine grained with some sandstone fragments, dry	-	None	None
30 - 34' - Sand, brown, very fine grained with some sandstone fragments and some red to dark red clay	-	None	None
34 - 80' - Sand, brown, very fine grained with some sandstone fragments. Lost circulation at 45' bgs, No samples below 45' bgs	-	None	None

Appendix B
Analytical Reports

Analytical Report 330360

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vacuum to Jal Lagacy

2009-092

20-APR-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

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



20-APR-09

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

Reference: XENCO Report No: **330360**
14" Vacuum to Jal Lagacy
Project Address: Lea County, NM

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 330360. 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. 330360 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

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

Certified and approved by numerous States and Agencies.

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Sample Cross Reference 330360



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vacuum to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Chloride Baseline	S	Apr-15-09 15:00		330360-001



Certificate of Analysis Summary 330360
PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092 Date Received in Lab: Fri Apr-17-09 08:07 am
 Contact: Jason Henry Report Date: 20-APR-09
 Project Location: Lea County, NM Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	330360-001			
	Field Id:	Chloride Baseline			
	Depth:				
Anions by EPA 300	Matrix:	SOIL			
	Sampled:	Apr-15-09 15:00			
	Extracted:				
Percent Moisture	Analyzed:	Apr-17-09 14:47			
	Units/RL:	mg/kg RL			
	Units/RL:	796 10.3			
Percent Moisture	Extracted:				
	Analyzed:	Apr-17-09 17:00			
	Units/RL:	% RL			
Percent Moisture	Units/RL:	3.28 1.00			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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


 Brent Barron
 Odessa Laboratory Director



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- 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.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Blank Spike Recovery



Project Name: 14" Vacuum to Jal Legacy

Work Order #: 330360

Project ID:

2009-092

Lab Batch #: 756272

Sample: 756272-1-BKS

Matrix: Solid

Date Analyzed: 04/17/2009

Date Prepared: 04/17/2009

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	10.5	105	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]

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



Form 3 - MS Recoveries



Project Name: 14" Vacuum to Jal Legacy

Work Order #: 330360

Lab Batch #: 756272

Project ID: 2009-092

Date Analyzed: 04/17/2009

Date Prepared: 04/17/2009

Analyst: LATCOR

QC- Sample ID: 330360-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	796	207	939	69	80-120	X

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

Relative Percent Difference [E] = $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes



Sample Duplicate Recovery



Project Name: 14" Vacuum to Jal Lagacy

Work Order #: 330360

Lab Batch #: 756272

Project ID: 2009-092

Date Analyzed: 04/17/2009

Date Prepared: 04/17/2009

Analyst: LATCOR

QC- Sample ID: 330360-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	796	793	0	20	

Lab Batch #: 756187

Date Analyzed: 04/17/2009

Date Prepared: 04/17/2009

Analyst: BEV

QC- Sample ID: 330355-021 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	7.90	7.38	7	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.

Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Plains / Basin
Date/ Time: 01-17-09 @ 0907
Lab ID #: 330360
Initials: JMF

Sample Receipt Checklist

			Client Initials		
#1	Temperature of container/ cooler?	<input checked="" type="radio"/> Yes	No	2.5 °C	
#2	Shipping container in good condition?	<input checked="" type="radio"/> Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	<input checked="" type="radio"/> Yes	No	<input checked="" type="radio"/> Not Present	
#4	Custody Seals intact on sample bottles/ container? / <i>label</i>	<input checked="" type="radio"/> Yes	No	<input checked="" type="radio"/> Not Present	
#5	Chain of Custody present?	<input checked="" type="radio"/> Yes	No		
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="radio"/> Yes	No		
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="radio"/> Yes	No		
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="radio"/> Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<input checked="" type="radio"/> Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="radio"/> Yes	No		
#11	Containers supplied by ELOT?	<input checked="" type="radio"/> Yes	No		
#12	Samples in proper container/ bottle?	<input checked="" type="radio"/> Yes	No	See Below	
#13	Samples properly preserved?	<input checked="" type="radio"/> Yes	No	See Below	
#14	Sample bottles intact?	<input checked="" type="radio"/> Yes	No		
#15	Preservations documented on Chain of Custody?	<input checked="" type="radio"/> Yes	No		
#16	Containers documented on Chain of Custody?	<input checked="" type="radio"/> Yes	No		
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="radio"/> Yes	No	See Below	
#18	All samples received within sufficient hold time?	<input checked="" type="radio"/> Yes	No	See Below	
#19	Subcontract of sample(s)?	<input checked="" type="radio"/> Yes	No	<input checked="" type="radio"/> Not Applicable	
#20	VOC samples have zero headspace?	<input checked="" type="radio"/> 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 333087

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy

2009-92

29-MAY-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



29-MAY-09

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

Reference: XENCO Report No: **333087**
14" Vac to Jal Legacy
Project Address: Lea County, NM

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 333087. 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. 333087 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

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Sample Cross Reference 333087



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Stockpile # 1	S	May-18-09 14:30		333087-001
Stockpile # 2	S	May-18-09 14:40		333087-002
Main Exc. - NWSW	S	May-18-09 14:45		333087-003
Main Exc. - NESW	S	May-18-09 14:50		333087-004
Main Exc. - WSW	S	May-18-09 15:00		333087-005
Main Exc. - ESW	S	May-18-09 15:10		333087-006
Main Exc. Floor # 1	S	May-18-09 15:20		333087-007
Main Exc. Floor # 2	S	May-18-09 15:30		333087-008
Main Exc. Floor # 3	S	May-18-09 15:40		333087-009
Main Exc. Floor # 4	S	May-18-09 15:50		333087-010

CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy

Project ID: 2009-92

Report Date: 29-MAY-09

Work Order Number: 333087

Date Received: 05/19/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-759451 Percent Moisture

None

Batch: LBA-759476 TPH by SW8015 Mod

SW8015MOD_NM

Batch 759476, 1-Chlorooctane recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 333087-010.

Batch: LBA-759977 BTEX-MTBE EPA 8021B

SW8021BM

Batch 759977, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 333087-003,333087-008.

4-Bromofluorobenzene recovered below QC limits; QC Data not confirmed by re-analysis.

Samples affected are: 530571-1-BLK.

SW8021BM

Batch 759977, Benzene, Toluene recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 333087-003, -010, -008, -005, -007, -009, -004, -006.

The Laboratory Control Sample for Toluene, Benzene is within laboratory Control Limits

CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy

Project ID: 2009-92

Work Order Number: 333087

Report Date: 29-MAY-09

Date Received: 05/19/2009

*Batch: LBA-760298 BTEX-MTBE EPA 8021B
SW8021BM*

Batch 760298, 4-Bromofluorobenzene recovered below QC limits; QC Data not confirmed by re-analysis. Samples affected are: 530774-1-BLK.

SW8021BM

Batch 760298, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 333087-001.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits

*Batch: LBA-760452 BTEX-MTBE EPA 8021B
BTEX by 8021B*

760452, The Beginning and ending CCV for this batch was within QC limits, However, due to carry-over from an extremely contaminated sample immediately prior to it, the Middle CCV was above the QC limits. All Batch QC and sample surrogates were within QC limits, therefore this QC failure has negligible effect on this sample.



Certificate of Analytical Summary 333087
PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Tue May-19-09 08:12 am

Report Date: 29-MAY-09

Project Manager: Brent Barron, II

Analysis Requested		Lab Id:	333087-001	333087-002	333087-003	333087-004	333087-005	333087-006
Field Id:		Stockpile # 1	Stockpile # 2	Main Exc. - NWSW	Main Exc. - NESW	Main Exc. - WSW	Main Exc. - ESW	
Depth:								
Matrix:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampled:		May-18-09 14:30	May-18-09 14:40	May-18-09 14:45	May-18-09 14:50	May-18-09 15:00	May-18-09 15:10	
Extracted:		May-27-09 10:00	May-28-09 16:00	May-22-09 12:09	May-22-09 12:09	May-22-09 12:09	May-22-09 12:09	
Analyzed:		May-27-09 13:18	May-28-09 16:28	May-22-09 19:03	May-22-09 19:24	May-22-09 19:46	May-22-09 20:07	
Units/RL:		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		3.549 0.5545	23.20 2.187	0.0073 0.0010	0.0013 0.0011	ND 0.0011	ND 0.0010	
Toluene		88.56 1.109	233.0 4.373	0.0354 0.0020	ND 0.0022	ND 0.0022	ND 0.0020	
Ethylbenzene		63.06 0.5545	111.0 2.187	0.0158 0.0010	ND 0.0011	ND 0.0011	ND 0.0010	
m,p-Xylenes		88.09 1.109	165.8 4.373	0.0249 0.0020	ND 0.0022	ND 0.0022	ND 0.0020	
o-Xylene		32.31 0.5545	12.40 2.187	0.0090 0.0010	ND 0.0011	ND 0.0011	ND 0.0010	
Total Xylenes		120.4 0.5545	178.2 2.187	0.0339 0.0010	ND 0.0011	ND 0.0011	ND 0.0010	
Total BTEX		275.569 0.5545	545.4 2.187	0.0924 0.0010	0.0013 0.0011	ND 0.0011	ND 0.0010	
Percent Moisture		9.83 1.00	8.54 1.00	2.34 1.00	8.37 1.00	7.38 1.00	2.31 1.00	
TPH By SW8015 Mod		May-20-09 08:59	May-20-09 08:59	May-20-09 08:59	May-20-09 08:59	May-20-09 08:59	May-20-09 08:59	
Extracted:		May-19-09 12:58	May-19-09 12:58	May-19-09 12:58	May-19-09 12:58	May-19-09 12:58	May-19-09 12:58	
Analyzed:		May-19-09 15:59	May-19-09 16:24	May-19-09 16:49	May-19-09 17:14	May-19-09 17:39	May-19-09 18:04	
Units/RL:		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		3990 333	8260 164	18.0 15.4	ND 16.4	ND 16.2	ND 15.4	
C12-C28 Diesel Range Hydrocarbons		4890 333	9340 164	18.1 15.4	43.3 16.4	ND 16.2	21.3 15.4	
C28-C35 Oil Range Hydrocarbons		ND 333	669 164	ND 15.4	ND 16.4	ND 16.2	ND 15.4	
Total TPH		8880 333	18269 164	36.1 15.4	43.3 16.4	ND 16.2	21.3 15.4	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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 Brent Barron
 Odessa Laboratory Director



Certificate of Analytical Summary 333087

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Tue May-19-09 08:12 am

Report Date: 29-MAY-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	333087-007	333087-008	333087-009	333087-010
	Field Id:	Main Exc. Floor # 1	Main Exc. Floor # 2	Main Exc. Floor # 3	Main Exc. Floor # 4
Depth:					
Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
Sampled:	May-18-09 15:20	May-18-09 15:30	May-18-09 15:40	May-18-09 15:50	
BTEX by EPA 8021B	Extracted:	May-22-09 12:09	May-22-09 12:09	May-22-09 12:09	May-22-09 12:09
	Analyzed:	May-22-09 21:11	May-22-09 17:58	May-22-09 21:33	May-22-09 18:19
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.0013 0.0010	ND 2.397	0.0022 0.0010	9.459 0.5842
Toluene		0.0033 0.0021	26.82 4.793	0.0071 0.0020	106.7 1.168
Ethylbenzene		ND 0.0010	41.51 2.397	0.0013 0.0010	84.72 0.5842
m,p-Xylenes		ND 0.0021	71.76 4.793	ND 0.0020	123.0 1.168
o-Xylene		ND 0.0010	27.42 2.397	ND 0.0010	47.24 0.5842
Total Xylenes		ND 0.0010	99.18 2.397	ND 0.0010	170.24 0.5842
Total BTEX		0.0046 0.0010	167.51 2.397	0.0106 0.0010	371.119 0.5842
Percent Moisture	Extracted:				
	Analyzed:	May-20-09 08:59	May-20-09 08:59	May-20-09 08:59	May-20-09 08:59
	Units/RL:	% RL	% RL	% RL	% RL
Percent Moisture		2.77 1.00	16.55 1.00	ND 1.00	14.42 1.00
TPH By SW8015 Mod	Extracted:				
	Analyzed:	May-19-09 12:58	May-19-09 12:58	May-19-09 12:58	May-19-09 12:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		ND 15.4	4460 359	50.9 15.1	4970 175
C12-C28 Diesel Range Hydrocarbons		19.8 15.4	7640 359	1460 15.1	7740 175
C28-C35 Oil Range Hydrocarbons		ND 15.4	ND 359	95.4 15.1	523 175
Total TPH		19.8 15.4	12100 359	1606.3 15.1	13233 175

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The information and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty of the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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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.

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(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116





Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 333087,
Lab Batch #: 759977

Sample: 530571-1-BKS / BKS

Project ID: 2009-92

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/22/09 14:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 759977

Sample: 530571-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/22/09 15:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0339	0.0300	113	80-120	

Lab Batch #: 759977

Sample: 530571-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/22/09 15:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0230	0.0300	77	80-120	*

Lab Batch #: 759977

Sample: 333087-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/22/09 17:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0233	0.0300	78	80-120	*
4-Bromofluorobenzene	0.0377	0.0300	126	80-120	*

Lab Batch #: 759977

Sample: 333087-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/22/09 18:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0416	0.0300	139	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: 14" Vac to Jal Legacy

Work Orders : 333087,
Lab Batch #: 759977

Sample: 333087-003 / SMP

Project ID: 2009-92
Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/22/09 19:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0237	0.0300	79	80-120	*
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

Lab Batch #: 759977

Sample: 333087-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/22/09 19:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

Lab Batch #: 759977

Sample: 333087-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/22/09 19:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0243	0.0300	81	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 759977

Sample: 333087-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/22/09 20:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0246	0.0300	82	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 759977

Sample: 333087-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/22/09 21:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	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: 14" Vac to Jal Legacy

Work Orders : 333087,
Lab Batch #: 759977

Sample: 333087-009 / SMP

Project ID: 2009-92

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/22/09 21:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0240	0.0300	80	80-120	
4-Bromofluorobenzene	0.0353	0.0300	118	80-120	

Lab Batch #: 759977

Sample: 333087-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/23/09 00:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

Lab Batch #: 759977

Sample: 333087-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/23/09 01:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 760298

Sample: 530774-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/27/09 10:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0242	0.0300	81	80-120	

Lab Batch #: 760298

Sample: 530774-1-BSD / BSD

Batch: 1 Matrix: Solid

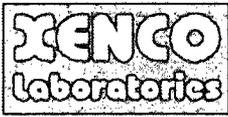
Units: mg/kg

Date Analyzed: 05/27/09 10:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	80-120	
4-Bromofluorobenzene	0.0251	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: 14" Vac to Jal Legacy

Work Orders : 333087,
Lab Batch #: 760298

Sample: 530774-1-BLK / BLK

Project ID: 2009-92

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 05/27/09 11:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0164	0.0300	55	80-120	*

Lab Batch #: 760298

Sample: 333087-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/27/09 13:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 760298

Sample: 333233-020 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/27/09 19:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 760298

Sample: 333233-020 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/27/09 20:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 760452

Sample: 530869-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 05/28/09 13:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

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



Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 333087,

Project ID: 2009-92

Lab Batch #: 760452

Sample: 530869-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/28/09 13:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 760452

Sample: 530869-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/28/09 14:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0248	0.0300	83	80-120	

Lab Batch #: 760452

Sample: 333087-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/28/09 16:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 759476

Sample: 530300-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/19/09 13:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	45.8	50.0	92	70-135	

Lab Batch #: 759476

Sample: 530300-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/19/09 14:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	46.0	50.0	92	70-135	

* 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: 14" Vac to Jal Legacy

Work Orders : 333087,
Lab Batch #: 759476

Sample: 530300-1-BLK / BLK

Project ID: 2009-92
Batch: 1 Matrix: Solid

Units: mg/kg		Date Analyzed: 05/19/09 14:45		SURROGATE RECOVERY STUDY		
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
l-Chlorooctane		91.9	100	92	70-135	
o-Terphenyl		52.3	50.0	105	70-135	

Lab Batch #: 759476
Units: mg/kg

Sample: 333087-001 / SMP

Batch: 1 Matrix: Soil

Date Analyzed: 05/19/09 15:59		SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
l-Chlorooctane		119	100	119	70-135	
o-Terphenyl		48.6	50.0	97	70-135	

Lab Batch #: 759476
Units: mg/kg

Sample: 333087-002 / SMP

Batch: 1 Matrix: Soil

Date Analyzed: 05/19/09 16:24		SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
l-Chlorooctane		127	100	127	70-135	
o-Terphenyl		52.7	50.0	105	70-135	

Lab Batch #: 759476
Units: mg/kg

Sample: 333087-003 / SMP

Batch: 1 Matrix: Soil

Date Analyzed: 05/19/09 16:49		SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
l-Chlorooctane		88.6	100	89	70-135	
o-Terphenyl		49.7	50.0	99	70-135	

Lab Batch #: 759476
Units: mg/kg

Sample: 333087-004 / SMP

Batch: 1 Matrix: Soil

Date Analyzed: 05/19/09 17:14		SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
l-Chlorooctane		86.3	100	86	70-135	
o-Terphenyl		49.1	50.0	98	70-135	

* 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: 14" Vac to Jal Legacy

Work Orders : 333087,

Project ID: 2009-92

Lab Batch #: 759476

Sample: 333087-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 17:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.2	100	90	70-135	
o-Terphenyl	50.9	50.0	102	70-135	

Lab Batch #: 759476

Sample: 333087-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 18:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	59.2	50.0	118	70-135	

Lab Batch #: 759476

Sample: 333087-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 18:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.6	100	91	70-135	
o-Terphenyl	50.7	50.0	101	70-135	

Lab Batch #: 759476

Sample: 333087-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 18:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

Lab Batch #: 759476

Sample: 333087-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 19:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.3	100	89	70-135	
o-Terphenyl	49.7	50.0	99	70-135	

* 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: 14" Vac to Jal Legacy

Work Orders : 333087,
Lab Batch #: 759476

Sample: 333087-010 / SMP

Project ID: 2009-92

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/19/09 20:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	140	100	140	70-135	*
o-Terphenyl	53.8	50.0	108	70-135	

Lab Batch #: 759476 Sample: 333087-005 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/19/09 23:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	49.2	50.0	98	70-135	

Lab Batch #: 759476 Sample: 333087-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/20/09 00:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	49.2	50.0	98	70-135	

* 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: 14" Vac to Jal Legacy

Work Order #: 333087

Analyt: BRB

Lab Batch ID: 759977

Sample: 530571-1-BKS

Batch #: 1

Date Prepared: 05/22/2009

Project ID: 2009-92

Date Analyzed: 05/22/2009

Matrix: Solid

Units: mg/kg

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.1183	118	0.1	0.1172	117	1	70-130	35	
Toluene	ND	0.1000	0.1143	114	0.1	0.1132	113	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1190	119	0.1	0.1181	118	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2396	120	0.2	0.2368	118	1	70-135	35	
o-Xylene	ND	0.1000	0.1148	115	0.1	0.1140	114	1	71-133	35	

Date Prepared: 05/27/2009

Date Analyzed: 05/27/2009

Analyt: ASA

Lab Batch ID: 760298

Sample: 530774-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.1000	100	0.1	0.1002	100	0	70-130	35	
Toluene	ND	0.1000	0.0963	96	0.1	0.0968	97	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1030	103	0.1	0.1046	105	2	71-129	35	
m,p-Xylenes	ND	0.2000	0.2083	104	0.2	0.2113	106	1	70-135	35	
o-Xylene	ND	0.1000	0.0985	99	0.1	0.1001	100	2	71-133	35	

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: 14" Vac to Jal Legacy

Work Order #: 333087

Analyst: BRB

Lab Batch ID: 760452

Sample: 530869-1-BKS

Batch #: 1

Date Prepared: 05/28/2009

Project ID: 2009-92

Date Analyzed: 05/28/2009

Matrix: Solid

Units: mg/kg

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0958	96	0.1	0.0944	94	1	70-130	35	
Toluene	ND	0.1000	0.0931	93	0.1	0.0922	92	1	70-130	35	
Ethylbenzene	ND	0.1000	0.0987	99	0.1	0.0973	97	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2007	100	0.2	0.1975	99	2	70-135	35	
o-Xylene	ND	0.1000	0.0952	95	0.1	0.0940	94	1	71-133	35	

Analyst: BHW

Lab Batch ID: 759476

Sample: 530300-1-BKS

Batch #: 1

Date Prepared: 05/19/2009

Date Analyzed: 05/19/2009

Matrix: Solid

Units: mg/kg

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH By SW8015 Mod											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1010	101	1000	990	99	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	964	96	1000	954	95	1	70-135	35	

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 - MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 333087

Lab Batch ID: 759977

Date Analyzed: 05/23/2009

Reporting Units: mg/kg

Project ID: 2009-92

QC- Sample ID: 333087-003 S

Date Prepared: 05/22/2009

Batch #: 1

Analyst: BRB

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spiked Sample %R [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0073	0.1024	0.2245	212	0.1024	0.2088	197	7	70-130	35	X
Toluene	0.0354	0.1024	0.3688	326	0.1024	0.3445	302	7	70-130	35	X
Ethylbenzene	0.0158	0.1024	0.1478	129	0.1024	0.1382	120	7	71-129	35	
m,p-Xylenes	0.0249	0.2048	0.2332	102	0.2048	0.2213	96	5	70-135	35	
o-Xylene	0.0090	0.1024	0.1041	93	0.1024	0.0991	88	5	71-133	35	

Lab Batch ID: 760298

Date Analyzed: 05/27/2009

Reporting Units: mg/kg

QC- Sample ID: 333233-020 S

Date Prepared: 05/27/2009

Batch #: 1

Analyst: ASA

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spiked Sample %R [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1092	0.0619	57	0.1092	0.0656	60	6	70-130	35	X
Toluene	ND	0.1092	0.0606	55	0.1092	0.0644	59	6	70-130	35	X
Ethylbenzene	ND	0.1092	0.0677	62	0.1092	0.0720	66	6	71-129	35	X
m,p-Xylenes	ND	0.2183	0.1392	64	0.2183	0.1474	68	6	70-135	35	X
o-Xylene	ND	0.1092	0.0628	58	0.1092	0.0671	61	7	71-133	35	X

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

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

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



Form 3 - MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 333087

Project ID: 2009-92

Lab Batch ID: 759476

QC- Sample ID: 333087-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 05/19/2009

Date Prepared: 05/19/2009

Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod	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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1150	106	1080	1160	107	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1100	102	1080	1120	104	2	70-135	35	

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

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

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



Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 333087

Lab Batch #: 759451

Project ID: 2009-92

Date Analyzed: 05/20/2009

Date Prepared: 05/20/2009

Analyst: BEV

QC- Sample ID: 333088-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	ND	ND	NC	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST
 12800 West 20 East
 Odessa, Texas 79765
 Phone: 432-562-1850
 Fax: 432-563-1713

Project Manager: Camille Bryant
 Company Name: Basin Environmental Consulting, LLC
 Company Address: P.O. Box 393
 City/State/Zip: Levington, NM 87260
 Telephone No: (505) 895-7230
 Sampler Signature: Camille Bryant
 Fax No: (505) 395-1429
 e-mail: cibryant@basin-consulting.com

Project Name: 14" Vac to Jal Legacy
 Project #: SRSR 2009-92
 Project Loc: Lee County, NM

PO #: PAA-J. Henry
 Report Format: Standard TRRP NPDES

ORDER #: 533087

FIELD CODE

Lab # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Field # of Containers	Analysis For:
01	STACKPILE #1			5/18	1430		1	<input checked="" type="checkbox"/> TOC <input checked="" type="checkbox"/> TOTAL <input checked="" type="checkbox"/> RUSH TAT (Pre-Screen) 24, 42, 72 hrs <input checked="" type="checkbox"/> Standard TAT 4 DAY <input type="checkbox"/> NORM <input type="checkbox"/> GSI <input type="checkbox"/> GTE (SOLIDS) BTEX 3000 <input type="checkbox"/> Volatiles <input type="checkbox"/> Metals As Mg On Ca Cl/Phos/Sr <input type="checkbox"/> Sulf/RSR/CEM <input type="checkbox"/> Metals (Ca Mg, Ni, K) <input type="checkbox"/> Copper (Ca Mg, Ni, K) <input type="checkbox"/> Pb (1, 100) <input type="checkbox"/> TX 1000 <input type="checkbox"/> TPH 4.12 (ASTM 3015) <input type="checkbox"/> NP - Non-Halogenated Hydrocarbons <input type="checkbox"/> CW - Condensable Sulfides <input type="checkbox"/> OW - Drinking Water Sulfides <input type="checkbox"/> Other Specialty <input type="checkbox"/> Ni <input type="checkbox"/> Hg <input type="checkbox"/> HCl <input type="checkbox"/> H2SO4 <input type="checkbox"/> HNO3 <input type="checkbox"/> H2O2 <input type="checkbox"/> Se <input type="checkbox"/> Total # of Containers
02	STACKPILE #2				1440			
03	MAIN Exc. - NWSW				1445			
04	MAIN Exc. - NESW				1450			
05	MAIN Exc. - WSW				1500			
06	MAIN Exc. - ESW				1510			
07	MAIN Exc. - FLOOR #1				1520			
08	MAIN Exc. - FLOOR #2				1530			
09	MAIN Exc. - FLOOR #3				1540			
10	MAIN Exc. - FLOOR #4			5/18	1550			

Special Instructions:

Received by: Camille Bryant Date: 5/18/09 Time: 1600
 Received by: Camille Bryant Date: 5/19/09 Time: 0812
 Received by: Camille Bryant Date: 5/19/09 Time: 0812

Received by ELOE: Camille Bryant

Temperature Upon Receipt: 15 °C

Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Basin / Plains
 Date/ Time: 05/19/09 8:12
 Lab ID #: 533087
 Initials: AK

Sample Receipt Checklist

	Yes	No	Client Initials
#1 Temperature of container/ cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.5 °C
#2 Shipping container in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#3 Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(Not Present)
#4 Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Present
#5 Chain of Custody present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#6 Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#7 Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#8 Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ID written on Cont / Lid
#9 Container label(s) legible and intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#11 Containers supplied by ELOI?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#12 Samples in proper container/ bottle?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#13 Samples properly preserved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#14 Sample bottles intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#15 Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#16 Containers documented on Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#17 Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#18 All samples received within sufficient hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#19 Subcontract of sample(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Applicable
#20 VOC samples have zero headspace?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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 333729

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14-Inch Vac to Jal - Legacy

2009-092

03-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



03-JUN-09

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

Reference: XENCO Report No: **333729**
14-Inch Vac to Jal - Legacy
Project Address: Lea County, NM

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 333729. 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. 333729 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

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

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Sample Cross Reference 333729



PLAINS ALL AMERICAN EH&S, Midland, TX

14-Inch Vac to Jal - Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1 @ 10' bgs	S	May-26-09 10:00		333729-001
T-2 @ 12' bgs	S	May-26-09 10:05		333729-002
T-2 @ 14' bgs	S	May-26-09 10:10		333729-003
T-2 @ 18' bgs	S	May-26-09 10:20		333729-004
T-3 @ 12' bgs	S	May-26-09 10:30		333729-005
T-3 @ 14' bgs	S	May-26-09 10:40		333729-006
T-3 @ 18' bgs	S	May-26-09 10:50		333729-007
T-3 @ 22' bgs	S	May-26-09 11:00		333729-008
T-3 @ 26' bgs	S	May-26-09 11:10		333729-009
T-3 @ 30' bgs	S	May-26-09 11:20		333729-010
T-4 @ 12' bgs	S	May-26-09 11:30		333729-011
T-4 @ 14' bgs	S	May-26-09 11:40		333729-012
T-4 @ 18' bgs	S	May-26-09 11:50		333729-013
T-4 @ 22' bgs	S	May-26-09 12:00		333729-014
T-4 @ 26' bgs	S	May-26-09 12:10		333729-015
T-4 @ 30' bgs	S	May-26-09 12:20		333729-016
T-5 @ 14' bgs	S	May-26-09 12:30		333729-017
T-6 @ 10' bgs	S	May-26-09 12:40		333729-018
T-6 @ 14' bgs	S	May-26-09 12:50		333729-019
T-6 @ 18' bgs	S	May-26-09 13:00		333729-020
T-7 @ 10' bgs	S	May-26-09 13:10		333729-021
T-7 @ 14' bgs	S	May-26-09 13:20		333729-022
T-7 @ 18' bgs	S	May-26-09 13:30		333729-023
T-8 @ 10' bgs	S	May-26-09 13:40		333729-024
T-8 @ 14' bgs	S	May-26-09 13:50		333729-025
T-9 @ 10' bgs	S	May-26-09 14:00		333729-026
T-9 @ 14' bgs	S	May-26-09 14:10		333729-027

CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal - Legacy

Project ID: 2009-092

Report Date: 03-JUN-09

Work Order Number: 333729

Date Received: 05/27/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-760246 Percent Moisture

None

Batch: LBA-760247 Percent Moisture

None

Batch: LBA-760705 BTEX-MTBE EPA 8021B
SW8021BM

Batch 760705, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 333729-005,333729-007.

4-Bromofluorobenzene recovered below QC limits. Matrix Interference is suspected. Sample Data confirmed by re-analysis. Samples affected are: 530985-1-BLK,333729-017,333729-010,333729-001. QC data not confirmed by reanalysis.

Batch: LBA-760797 BTEX-MTBE EPA 8021B
SW8021BM

Batch 760797, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 333729-023,333729-021,333729-022.

4-Bromofluorobenzene recovered below QC limits Data confirmed by re-analysis. Samples affected are: 531040-1-BLK,333729-024,333729-019,333729-025. QC data is not confirmed by reanalysis.

SW8021BM

Batch 760797, Ethylbenzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 333729-025, -026, -021, -022, -019, -023, -020, -024, -027.

The Laboratory Control Sample for Ethylbenzene is within laboratory Control Limits



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal - Legacy

Project ID: 2009-092
Work Order Number: 333729

Report Date: 03-JUN-09
Date Received: 05/27/2009

Batch: LBA-760837 TPH by SW8015 Mod
None

Batch: LBA-760842 TPH by SW8015 Mod
None

Batch: LBA-760926 BTEX-MTBE EPA 8021B
SW8021BM

Batch 760926, 4-Bromofluorobenzene recovered below QC limits; QC Data not confirmed by re-analysis. Samples affected are: 531104-1-BLK.

SW8021BM

Batch 760926, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. This failure is most likely due to matrix interference with the sample chosen for MS/MSD analysis.

Samples affected are: 333729-016, -011, -013, -003, -002.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits



Certificate of Analysis Summary 333729

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed May-27-09 08:34 am

Report Date: 03-JUN-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	333729-001	333729-002	333729-003	333729-004	333729-005	333729-006
BTEX by EPA 8021B	Extracted:	May-30-09 11:00	May-26-09 10:05	SOIL	T-2 @ 12' bgs	May-26-09 10:00	May-26-09 10:05	May-26-09 10:10	May-26-09 10:20	May-26-09 10:30	May-26-09 10:40
	Analyzed:	May-31-09 16:41	Jun-01-09 16:30	SOIL	T-2 @ 12' bgs	May-30-09 11:00	Jun-01-09 16:30	Jun-01-09 16:30	May-30-09 11:00	May-30-09 11:00	May-30-09 11:00
	Units/RL:	mg/kg RL	mg/kg RL	SOIL	T-2 @ 12' bgs	mg/kg RL					
Benzene		ND 0.0011	34.76 5.852	SOIL	T-2 @ 12' bgs	18.84 5.886	223.7 11.77	0.0023 0.0011	4.046 1.153	55.43 2.305	74.40 2.293
Toluene		ND 0.0022	323.9 11.70	SOIL	T-2 @ 14' bgs	136.1 5.886	0.0088 0.0023	0.0069 0.0011	43.23 1.153	66.87 2.305	87.36 2.293
Ethylbenzene		ND 0.0011	189.7 5.852	SOIL	T-2 @ 14' bgs	206.0 11.77	0.0121 0.0023	0.0121 0.0023	23.70 1.153	90.57 1.153	118.39 1.147
m,p-Xylenes		ND 0.0022	285.0 11.70	SOIL	T-2 @ 14' bgs	70.99 5.886	0.0052 0.0011	0.0173 0.0011	193.276 1.153	255.439 1.147	
o-Xylene		ND 0.0011	96.74 5.852	SOIL	T-2 @ 12' bgs	381.74 5.852	930.1 5.852	0.0353 0.0011	Jun-01-09 11:07	Jun-01-09 11:07	Jun-01-09 11:07
Total Xylenes		ND 0.0011	381.74 5.852	SOIL	T-2 @ 12' bgs	10300 177	16500 177	10500 178	3550 173	6450 173	3980 174
Total BTEX		ND 0.0011	930.1 5.852	SOIL	T-2 @ 12' bgs	1440 177	28240 177	18550 178	10725 173	7300 174	785 174
TPH By SW8015 Mod	Extracted:	Jun-01-09 11:07	Jun-01-09 11:07	SOIL	T-2 @ 12' bgs	Jun-01-09 11:07					
	Analyzed:	Jun-01-09 14:25	Jun-01-09 14:50	SOIL	T-2 @ 12' bgs	Jun-01-09 14:50	Jun-01-09 15:40	Jun-01-09 15:40	Jun-01-09 16:05	Jun-01-09 16:30	Jun-01-09 16:30
	Units/RL:	mg/kg RL	mg/kg RL	SOIL	T-2 @ 12' bgs	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 16.4	10300 177	SOIL	T-2 @ 12' bgs	7000 178	22.3 17.3	22.3 17.3	3550 173	6450 173	3980 174
C12-C28 Diesel Range Hydrocarbons		ND 16.4	16500 177	SOIL	T-2 @ 12' bgs	10500 178	109 17.3	109 17.3	6450 173	7300 174	785 174
C28-C35 Oil Range Hydrocarbons		ND 16.4	1440 177	SOIL	T-2 @ 12' bgs	1050 178	ND 17.3	ND 17.3	725 173	785 174	785 174
Total TPH		ND 16.4	28240 177	SOIL	T-2 @ 12' bgs	18550 178	131.3 17.3	131.3 17.3	10725 173	12065 174	12065 174

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Brent Barron
Odessa Laboratory Director



Certificate of Analysis Summary 333729

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092
 Contact: Jason Henry
 Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal - Legacy

Date Received in Lab: Wed May-27-09 08:34 am

Report Date: 03-JUN-09
 Project Manager: Brent Barron, II

Analysis Requested	Lab Id: Field Id: Depth: Matrix: Sampled:	333729-007 T-3 @ 18' bgs SOIL May-26-09 10:50	333729-008 T-3 @ 22' bgs SOIL May-26-09 11:00	333729-009 T-3 @ 26' bgs SOIL May-30-09 11:00 May-31-09 18:28	333729-010 T-3 @ 30' bgs SOIL May-26-09 11:20	333729-011 T-4 @ 12' bgs SOIL May-26-09 11:30	333729-012 T-4 @ 14' bgs SOIL May-26-09 11:40
BTEX by EPA 8021B	Extracted: Analyzed: Units/RL:	May-30-09 11:00 May-31-09 20:59 mg/kg RL 11.28 1.141	May-30-09 11:00 May-31-09 17:24 mg/kg RL 0.0070 0.0012	May-30-09 11:00 May-31-09 18:28 mg/kg RL ND 0.1194	May-30-09 11:00 May-31-09 21:20 mg/kg RL ND 1.073	Jun-01-09 16:30 Jun-02-09 12:46 mg/kg RL 48.18 6.038	May-30-09 11:00 May-31-09 22:03 mg/kg RL 8.783 1.280
Benzene		83.91 2.283	0.0250 0.0025	0.6279 0.2388	2.387 2.147	400.1 12.08	102.0 2.561
Toluene		48.65 1.141	0.0085 0.0012	1.565 0.1194	3.671 1.073	211.1 6.038	63.40 1.280
Ethylbenzene		73.01 2.283	0.0110 0.0025	4.657 0.2388	6.086 2.147	327.2 12.08	96.00 2.561
m,p-Xylenes		24.87 1.141	0.0053 0.0012	2.401 0.1194	2.512 1.073	111.0 6.038	33.74 1.280
o-Xylene		97.88 1.141	0.0163 0.0012	7.058 0.1194	8.598 1.073	438.2 6.038	129.74 1.280
Total Xylenes		241.72 1.141	0.0568 0.0012	9.2509 0.1194	14.856 1.073	1097.58 6.038	303.923 1.280
Total BTEX							
TPH By SW8015 Mod	Extracted: Analyzed: Units/RL:	Jun-01-09 11:07 Jun-01-09 16:55 mg/kg RL 5930 171	Jun-01-09 11:07 Jun-01-09 17:20 mg/kg RL ND 18.5	Jun-01-09 11:07 Jun-01-09 17:45 mg/kg RL 289 18.2	Jun-01-09 11:07 Jun-01-09 18:10 mg/kg RL 420 16.2	Jun-01-09 11:07 Jun-01-09 19:00 mg/kg RL 13200 364	Jun-01-09 11:07 Jun-01-09 19:24 mg/kg RL 3100 193
C6-C12 Gasoline Range Hydrocarbons		11100 171	59.0 18.5	910 18.2	1400 16.2	22300 364	4600 193
C12-C28 Diesel Range Hydrocarbons		1080 171	ND 18.5	81.9 18.2	118 16.2	2050 364	524 193
C28-C35 Oil Range Hydrocarbons		18110 171	59 18.5	1280.9 18.2	1938 16.2	37550 364	8224 193
Total TPH							

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 Brent Barron
 Odessa Laboratory Director



Certificate of Analysis Summary 333729

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed May-27-09 08:34 am

Report Date: 03-JUN-09

Project Manager: Brent Barron, II

Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	Extracted:	Analyzed:	Units/RL:	333729-007	333729-008	333729-009	333729-010	333729-011	333729-012
	T-3 @ 18' bgs	T-3 @ 22' bgs	T-3 @ 26' bgs	T-3 @ 30' bgs	T-4 @ 12' bgs	T-4 @ 14' bgs		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	May-26-09 10:50	May-26-09 11:00	May-26-09 11:10	May-26-09 11:20	May-26-09 11:30	May-26-09 11:40		May-28-09 08:46					
	%	%	%	%	%	%		RL	RL	RL	RL	RL	RL
	12.39	19.12	17.55	7.39	17.52	22.36		1.00	1.00	1.00	1.00	1.00	1.00
Percent Moisture													

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Odessa Laboratory Director



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Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed May-27-09 08:34 am

Report Date: 03-JUN-09

Project Manager: Brent Barron, II

Analysis Requested		Lab Id:	333729-013	333729-014	333729-015	333729-016	333729-017	333729-018
		Field Id:	T-4 @ 18' bgs	T-4 @ 22' bgs	T-4 @ 26' bgs	T-4 @ 30' bgs	T-5 @ 14' bgs	T-6 @ 10' bgs
		Depth:						
		Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled:	May-26-09 11:50	May-26-09 12:00	May-26-09 12:10	May-26-09 12:20	May-26-09 12:30	May-26-09 12:40
		Extracted:	Jun-01-09 16:30	May-30-09 11:00	May-30-09 11:00	Jun-01-09 16:30	May-30-09 11:00	May-30-09 11:00
		Analyzed:	Jun-02-09 13:08	May-31-09 22:46	May-31-09 23:07	Jun-02-09 13:50	May-31-09 17:46	May-31-09 23:50
		Units/RL:	mg/kg RL					
Benzene	BTEX by EPA 8021B		29.02 6.241	20.63 1.178	31.62 1.129	23.12 5.694	0.0078 0.0012	1.999 1.234
Toluene			277.2 12.48	163.3 2.356	213.1 2.258	230.2 11.39	0.0041 0.0025	20.67 2.468
Ethylbenzene			142.5 6.241	80.59 1.178	111.0 1.129	143.0 5.694	ND 0.0012	21.20 1.234
m,p-Xylenes			215.4 12.48	111.1 2.356	158.5 2.258	214.8 11.39	ND 0.0025	32.80 2.468
o-Xylene			73.52 6.241	39.38 1.178	55.50 1.129	74.02 5.694	ND 0.0012	12.43 1.234
Total Xylenes			288.92 6.241	130.48 1.178	214 1.129	288.82 5.694	ND 0.0012	45.23 1.234
Total BTEX			757.64 6.241	415 1.178	569.72 1.129	705.14 5.694	0.0119 0.0012	89.099 1.234
	TPH By SW8015 Mod	Extracted:	Jun-01-09 11:07					
		Analyzed:	Jun-01-09 19:49	Jun-01-09 20:14	Jun-01-09 20:39	Jun-01-09 21:04	Jun-01-09 21:28	Jun-01-09 21:53
		Units/RL:	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons			9680 188	8240 177	5040 170	7750 343	ND 18.6	1080 92.6
C12-C28 Diesel Range Hydrocarbons			14200 188	13700 177	7900 170	11000 343	32.0 18.6	2620 92.6
C28-C35 Oil Range Hydrocarbons			1340 188	1130 177	853 170	1290 343	ND 18.6	296 92.6
Total TPH			25220 188	23070 177	13793 170	20040 343	32 18.6	3996 92.6

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Brent Barron
Odessa Laboratory Director



Certificate of Analysis Summary 333729

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed May-27-09 08:34 am

Report Date: 03-JUN-09

Project Manager: Brent Barron, II

Analysis Requested		Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	333729-019	333729-020	333729-021	333729-022	333729-023	333729-024
			T-6 @ 14' bgs		SOIL	May-26-09 12:50	T-6 @ 18' bgs	T-7 @ 10' bgs	T-7 @ 14' bgs	T-7 @ 18' bgs	T-7 @ 18' bgs	T-8 @ 10' bgs
			May-26-09 08:00		SOIL	Jun-01-09 08:00	May-26-09 13:00	May-26-09 13:10	May-26-09 13:20	May-26-09 13:30	May-26-09 13:40	
			Jun-01-09 10:55		SOIL	Jun-01-09 11:17	Jun-01-09 08:00					
			mg/kg RL		mg/kg RL							
			0.0013 0.0013		ND 0.0012	9.257 1.137	5.998 1.190	56.21 2.274	62.42 2.380	33.32 2.400	33.32 2.400	ND 0.0011
			0.0053 0.0025		0.0042 0.0024	35.25 1.137	46.94 1.190	54.67 2.274	71.87 2.380	59.77 2.400	59.77 2.400	ND 0.0011
			0.0015 0.0013		0.0018 0.0012	ND 0.0024	ND 0.0024	ND 0.0012	ND 0.0012	ND 0.0012	ND 0.0012	ND 0.0011
			ND 0.0013		ND 0.0012	19.97 1.137	ND 0.0012	19.97 1.137	25.59 1.190	22.55 1.200	22.55 1.200	ND 0.0011
			ND 0.0013		ND 0.0012	74.64 1.137	ND 0.0012	74.64 1.137	97.46 1.190	82.32 1.200	82.32 1.200	ND 0.0011
			0.0081 0.0013		0.006 0.0012	175.357 1.137	0.006 0.0012	175.357 1.137	212.818 1.190	153.34 1.200	153.34 1.200	ND 0.0011
			Jun-01-09 11:07		Jun-01-09 11:07	Jun-01-09 12:14						
			Jun-01-09 22:18		Jun-01-09 22:43	Jun-01-09 13:33	Jun-01-09 13:56	Jun-01-09 13:33	Jun-01-09 13:56	Jun-01-09 14:20	Jun-01-09 14:43	Jun-01-09 14:43
			mg/kg RL		mg/kg RL							
			ND 18.9		ND 18.3	3460 344	3170 360	3460 344	3170 360	3190 360	3190 360	ND 17.0
			28.3 18.9		66.6 18.3	5480 344	5270 360	5480 344	5270 360	5010 360	5010 360	47.4 17.0
			ND 18.9		ND 18.3	900 344	799 360	900 344	799 360	861 360	861 360	44.3 17.0
			28.3 18.9		66.6 18.3	9840 344	9239 360	9840 344	9239 360	9061 360	9061 360	91.7 17.0
BTEX by EPA 8021B		Benzene										
		Toluene										
		Ethylbenzene										
		m,p-Xylenes										
		o-Xylene										
		Total Xylenes										
		Total BTEX										
TPH By SW8015 Mod												
		C6-C12 Gasoline Range Hydrocarbons										
		C12-C28 Diesel Range Hydrocarbons										
		C28-C35 Oil Range Hydrocarbons										
		Total TPH										

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Brent Barron
Odessa Laboratory Director



Certificate of Analysis Summary 333729

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: 14-Inch Vac to Jal - Legacy

Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed May-27-09 08:34 am

Report Date: 03-JUN-09

Project Manager: Brent Barron, II

Lab Id:	333729-019	333729-020	333729-021	333729-022	333729-023	333729-024
Field Id:	T-6 @ 14' bgs	T-6 @ 18' bgs	T-7 @ 10' bgs	T-7 @ 14' bgs	T-7 @ 18' bgs	T-8 @ 10' bgs
Depth:						
Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampled:	May-26-09 12:50	May-26-09 13:00	May-26-09 13:10	May-26-09 13:20	May-26-09 13:30	May-26-09 13:40
Extracted:						
Analyzed:	May-28-09 08:46	May-28-09 08:46	May-28-09 08:54	May-28-09 08:54	May-28-09 08:54	May-28-09 08:54
Units/RL:	% RL					
Percent Moisture	20.72 1.00	18.18 1.00	12.76 1.00	16.64 1.00	16.68 1.00	11.94 1.00

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Brent Barron
Odessa Laboratory Director



Certificate of Analysis Summary 333729
PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092
 Contact: Jason Henry
 Project Location: Lea County, NM

Date Received in Lab: Wed May-27-09 08:34 am
 Report Date: 03-JUN-09
 Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	Extracted:	Analyzed:	Units/RL:
BTEX by EPA 8021B	333729-025	T-8 @ 14' bgs		SOIL	May-26-09 13:50	Jun-01-09 08:00	Jun-01-09 11:59	mg/kg RL
Benzene	ND	0.0012						0.0072 0.0011
Toluene	ND	0.0023						0.3247 0.0023
Ethylbenzene	ND	0.0012						0.2975 0.0011
m,p-Xylenes	ND	0.0023						0.4625 0.0021
o-Xylene	ND	0.0012						0.2470 0.0011
Total Xylenes	ND	0.0012						0.7095 0.0011
Total BTEX	ND	0.0012						1.3389 0.0011
TPH By SW8015 Mod								
	333729-026	T-9 @ 10' bgs		SOIL	May-26-09 14:00	Jun-01-09 08:00	Jun-01-09 12:43	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons	ND	17.4						383 160
C12-C28 Diesel Range Hydrocarbons	ND	17.4						3720 160
C28-C35 Oil Range Hydrocarbons	ND	17.4						648 160
Total TPH	ND	17.4						4751 160
	333729-027	T-9 @ 14' bgs		SOIL	May-26-09 14:10	Jun-01-09 08:00	Jun-01-09 12:21	mg/kg RL
								0.0062 0.0012
								ND 0.0023
								0.0018 0.0012
								0.0097 0.0023
								0.0072 0.0012
								0.0169 0.0012
								0.0249 0.0012
								ND 17.6
								69.7 17.6
								36.3 17.6
								106 17.6

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 Brent Barron
 Odessa Laboratory Director



Certificate of Analysis Summary 333729
PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: 14-Inch Vac to Jal - Legacy

Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed May-27-09 08:34 am

Report Date: 03-JUN-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: Field Id: Depth: Matrix: Sampled:	333729-025 T-8 @ 14' bgs May-26-09 13:50 SOIL	333729-026 T-9 @ 10' bgs May-26-09 14:00 SOIL	333729-027 T-9 @ 14' bgs May-26-09 14:10 SOIL
Percent Moisture	Extracted: Analyzed: Units/RL:	May-28-09 08:54 % 13.92 1.00	May-28-09 08:54 % 6.37 1.00	May-28-09 08:54 % 14.57 1.00
Percent Moisture				

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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.

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Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760705

Sample: 530985-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/31/09 14:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 760705

Sample: 530985-1-bsd / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/31/09 15:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 760705

Sample: 530985-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/31/09 15:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0195	0.0300	65	80-120	*

Lab Batch #: 760705

Sample: 333729-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 16:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0189	0.0300	63	80-120	**

Lab Batch #: 760705

Sample: 333729-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 17:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760705

Project ID: 2009-092

Sample: 333729-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 17:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 760705

Sample: 333729-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 17:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0224	0.0300	75	80-120	**

Lab Batch #: 760705

Sample: 333729-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 18:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0455	0.0300	152	80-120	**

Lab Batch #: 760705

Sample: 333729-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 19:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0238	0.0300	79	80-120	**
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 760705

Sample: 333729-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 20:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760705

Project ID: 2009-092

Sample: 333729-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 20:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0233	0.0300	78	80-120	**
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 760705

Sample: 333729-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 21:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0231	0.0300	77	80-120	**

Lab Batch #: 760705

Sample: 333729-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 22:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 760705

Sample: 333729-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 22:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0243	0.0300	81	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 760705

Sample: 333729-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 23:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760705

Project ID: 2009-092

Sample: 333729-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 23:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 760705

Sample: 333729-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 00:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 760705

Sample: 333729-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 00:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 760797

Sample: 531040-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 09:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 760797

Sample: 531040-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 09:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

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



Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760797

Project ID: 2009-092

Sample: 531040-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 10:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0220	0.0300	73	80-120	*

Lab Batch #: 760797

Sample: 333729-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 10:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0208	0.0300	69	80-120	**

Lab Batch #: 760797

Sample: 333729-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 11:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 760797

Sample: 333729-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 11:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0244	0.0300	81	80-120	
4-Bromofluorobenzene	0.0205	0.0300	68	80-120	**

Lab Batch #: 760797

Sample: 333729-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 11:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0204	0.0300	68	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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760797

Project ID: 2009-092

Sample: 333729-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 12:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 760797

Sample: 333729-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 12:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.1156	0.0300	385	80-120	**

Lab Batch #: 760797

Sample: 333729-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 13:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0238	0.0300	79	80-120	**
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 760797

Sample: 333729-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 13:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0232	0.0300	77	80-120	**
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 760797

Sample: 333729-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 13:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0227	0.0300	76	80-120	**
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

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



Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 333729-025 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 19:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 760797

Sample: 333729-025 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 19:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 760926

Sample: 531104-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 09:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0322	0.0300	107	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 760926

Sample: 531104-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 09:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 760926

Sample: 531104-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 10:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0192	0.0300	64	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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760926

Project ID: 2009-092

Sample: 333729-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 11:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 760926

Sample: 333729-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 12:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 760926

Sample: 333729-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 12:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 760926

Sample: 333729-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 13:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 760926

Sample: 333729-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 13:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760926

Sample: 334047-004 S / MS

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 14:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0425	0.0300	142	80-120	*

Lab Batch #: 760926

Sample: 334047-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 14:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0448	0.0300	149	80-120	*

Lab Batch #: 760837

Sample: 531068-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 12:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	42.0	50.0	84	70-135	

Lab Batch #: 760837

Sample: 531068-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 12:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	42.8	50.0	86	70-135	

Lab Batch #: 760837

Sample: 531068-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 13:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.3	100	92	70-135	
o-Terphenyl	47.0	50.0	94	70-135	

* 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760837

Sample: 333729-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 13:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	122	100	122	70-135	
o-Terphenyl	55.4	50.0	111	70-135	

Lab Batch #: 760837

Sample: 333729-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 13:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	128	100	128	70-135	
o-Terphenyl	53.0	50.0	106	70-135	

Lab Batch #: 760837

Sample: 333729-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 14:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	124	100	124	70-135	
o-Terphenyl	49.8	50.0	100	70-135	

Lab Batch #: 760837

Sample: 333729-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 14:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	92.8	100	93	70-135	
o-Terphenyl	49.5	50.0	99	70-135	

Lab Batch #: 760837

Sample: 333729-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 15:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	93.4	100	93	70-135	
o-Terphenyl	48.7	50.0	97	70-135	

* 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760837

Sample: 333729-026 / SMP

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 15:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	51.8	50.0	104	70-135	

Lab Batch #: 760837

Sample: 333729-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 15:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.1	100	95	70-135	
o-Terphenyl	49.6	50.0	99	70-135	

Lab Batch #: 760837

Sample: 333729-027 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	47.5	50.0	95	70-135	

Lab Batch #: 760837

Sample: 333729-027 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	49.1	50.0	98	70-135	

Lab Batch #: 760842

Sample: 531073-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 13:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	44.7	50.0	89	70-135	

* 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760842

Project ID: 2009-092

Sample: 531073-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 13:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	44.8	50.0	90	70-135	

Lab Batch #: 760842

Sample: 531073-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 14:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	100	90	70-135	
o-Terphenyl	48.4	50.0	97	70-135	

Lab Batch #: 760842

Sample: 333729-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 14:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.8	100	92	70-135	
o-Terphenyl	49.3	50.0	99	70-135	

Lab Batch #: 760842

Sample: 333729-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 14:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.0	100	85	70-135	
o-Terphenyl	55.2	50.0	110	70-135	

Lab Batch #: 760842

Sample: 333729-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 15:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.4	50.0	107	70-135	

* 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760842

Project ID: 2009-092

Sample: 333729-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 15:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.8	100	94	70-135	
o-Terphenyl	50.3	50.0	101	70-135	

Lab Batch #: 760842

Sample: 333729-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 16:05

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	47.4	50.0	95	70-135	

Lab Batch #: 760842

Sample: 333729-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 16:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 760842

Sample: 333729-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 16:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	50.2	50.0	100	70-135	

Lab Batch #: 760842

Sample: 333729-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 17:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.1	100	97	70-135	
o-Terphenyl	52.1	50.0	104	70-135	

* 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760842

Project ID: 2009-092

Sample: 333729-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 17:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	52.3	50.0	105	70-135	

Lab Batch #: 760842 Sample: 333729-010 / SMP
Units: mg/kg Date Analyzed: 06/01/09 18:10

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.4	100	96	70-135	
o-Terphenyl	48.9	50.0	98	70-135	

Lab Batch #: 760842 Sample: 333729-011 / SMP
Units: mg/kg Date Analyzed: 06/01/09 19:00

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	56.6	50.0	113	70-135	

Lab Batch #: 760842 Sample: 333729-012 / SMP
Units: mg/kg Date Analyzed: 06/01/09 19:24

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 760842 Sample: 333729-013 / SMP
Units: mg/kg Date Analyzed: 06/01/09 19:49

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	57.1	50.0	114	70-135	

* 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,
Lab Batch #: 760842

Project ID: 2009-092

Sample: 333729-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 20:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	55.1	50.0	110	70-135	

Lab Batch #: 760842

Sample: 333729-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 20:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

Lab Batch #: 760842

Sample: 333729-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

Lab Batch #: 760842

Sample: 333729-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.5	100	96	70-135	
o-Terphenyl	51.2	50.0	102	70-135	

Lab Batch #: 760842

Sample: 333729-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

* 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760842

Sample: 333729-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 22:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.2	100	96	70-135	
o-Terphenyl	52.1	50.0	104	70-135	

Lab Batch #: 760842

Sample: 333729-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 22:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.1	100	93	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 760842

Sample: 333729-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 23:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	48.4	50.0	97	70-135	

Lab Batch #: 760842

Sample: 333729-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 23:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	50.4	50.0	101	70-135	

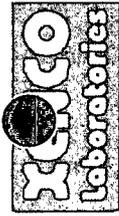
* Surrogate outside of Laboratory QC limits

** 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: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Project ID: 2009-092

Analyst: ASA

Date Prepared: 05/30/2009

Date Analyzed: 05/31/2009

Lab Batch ID: 760705

Sample: 530985-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.1043	104	0.1	0.1094	109	5	70-130	35	
Toluene	ND	0.1000	0.1019	102	0.1	0.1068	107	5	70-130	35	
Ethylbenzene	ND	0.1000	0.1079	108	0.1	0.1133	113	5	71-129	35	
m,p-Xylenes	ND	0.2000	0.2179	109	0.2	0.2281	114	5	70-135	35	
o-Xylene	ND	0.1000	0.1031	103	0.1	0.1085	109	5	71-133	35	

Analyst: ASA

Date Prepared: 06/01/2009

Date Analyzed: 06/01/2009

Lab Batch ID: 760797

Sample: 531040-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.1105	111	0.1	0.1094	109	1	70-130	35	
Toluene	ND	0.1000	0.1066	107	0.1	0.1053	105	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1109	111	0.1	0.1096	110	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2246	112	0.2	0.2219	111	1	70-135	35	
o-Xylene	ND	0.1000	0.1060	106	0.1	0.1053	105	1	71-133	35	

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: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Project ID: 2009-092

Analyst: ASA

Date Prepared: 06/01/2009

Date Analyzed: 06/02/2009

Lab Batch ID: 760926

Batch #: 1

Sample: 531104-1-BKS

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.1107	111	0.1	0.1118	112	1	70-130	35	
Toluene	ND	0.1000	0.1069	107	0.1	0.1082	108	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1118	112	0.1	0.1133	113	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2249	112	0.2	0.2274	114	1	70-135	35	
o-Xylene	ND	0.1000	0.1067	107	0.1	0.1081	108	1	71-133	35	

Analyst: BHW

Date Prepared: 06/01/2009

Date Analyzed: 06/01/2009

Lab Batch ID: 760837

Batch #: 1

Sample: 531068-1-BKS

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH By SW8015 Mod											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	842	84	1000	841	84	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1040	104	1000	1040	104	0	70-135	35	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Analyst: BHW

Lab Batch ID: 760842

Sample: 531073-1-BKS

Date Prepared: 06/01/2009

Batch #: 1

Project ID: 2009-092

Date Analyzed: 06/01/2009

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod		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	1000	908	91	1000	904	90	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons		ND	1000	1080	108	1000	1070	107	1	70-135	35	

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 - MSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Lab Batch ID: 760705

Date Analyzed: 06/01/2009

Reporting Units: mg/kg

Project ID: 2009-092

QC-Sample ID: 333729-004 S

Batch #: 1

Matrix: Soil

Date Prepared: 05/30/2009

Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										Control Limits %RPD	Control Limits %R	Control Limits %RPD	Flag		
	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						
BTEX by EPA 8021B																
Benzene	0.0023	0.1141	0.0980	84	0.1141	0.0977	84	0	70-130	35						
Toluene	0.0088	0.1141	0.1059	85	0.1141	0.0984	79	7	70-130	35						
Ethylbenzene	0.0069	0.1141	0.0971	79	0.1141	0.0978	80	1	71-129	35						
m,p-Xylenes	0.0121	0.2282	0.1902	78	0.2282	0.1946	80	2	70-135	35						
o-Xylene	0.0052	0.1141	0.0926	77	0.1141	0.0935	77	1	71-133	35						

Lab Batch ID: 760797

Date Analyzed: 06/01/2009

Reporting Units: mg/kg

QC-Sample ID: 333729-025 S

Batch #: 1

Matrix: Soil

Date Prepared: 06/01/2009

Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										Control Limits %RPD	Control Limits %R	Control Limits %RPD	Flag		
	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						
BTEX by EPA 8021B																
Benzene	ND	0.1162	0.1004	86	0.1162	0.1043	90	4	70-130	35						
Toluene	ND	0.1162	0.0976	84	0.1162	0.0997	86	2	70-130	35						
Ethylbenzene	ND	0.1162	0.0802	69	0.1162	0.0777	67	3	71-129	35					X	
m,p-Xylenes	ND	0.2323	0.2091	90	0.2323	0.2156	93	3	70-135	35						
o-Xylene	ND	0.1162	0.1001	86	0.1162	0.1025	88	2	71-133	35						

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

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

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



Form 3 - MSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Project ID: 2009-092

Lab Batch ID: 760926

QC-Sample ID: 334047-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/02/2009

Date Prepared: 06/01/2009 Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	0.0316	0.1162	0.0582	23	0.1162	0.0535	19	8	70-130	35	X
	0.0370	0.1162	0.0447	7	0.1162	0.0421	4	6	71-129	35	X
	0.0469	0.2323	0.1022	24	0.2323	0.0944	20	8	70-135	35	X
	0.0475	0.1162	0.0447	0	0.1162	0.0418	0	7	71-133	35	X

Lab Batch ID: 760837

QC-Sample ID: 333729-027 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 06/01/2009 Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	69.7	1170	1320	107	1170	1380	112	4	70-135	35	

Lab Batch ID: 760842

QC-Sample ID: 333729-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 06/01/2009 Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	16.4	1100	1170	105	1100	1300	117	11	70-135	35	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable, N = See Narrative, EQ, L = Estimated Quantitation Limit



Sample Duplicate Recovery



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Lab Batch #: 760246

Project ID: 2009-092

Date Analyzed: 05/28/2009

Date Prepared: 05/28/2009

Analyst: BEV

QC- Sample ID: 333729-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	8.71	10.5	18	20	

Lab Batch #: 760247

Date Analyzed: 05/28/2009

Date Prepared: 05/28/2009

Analyst: BEV

QC- Sample ID: 333729-021 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	12.8	12.9	1	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas

Page 1 of 3

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST
 Phone: 432-563-1800
 Fax: 432-563-1713

13500 West 130 East
 Odessa, Texas 79765

Project Name: 14-inch Vaz to Jal - Legacy

Project #: 2009-092

Project Loc: Lea County, NM

Project Manager: Camille Bryant

Company Name: Basin Environmental Service Technologies, LLC

Company Address: P. O. Box 301

City/State/Zip: Lewington, NM 88260

Telephone NO: (505) 396-429

Fax No: (505) 396-429

Sampler Signature: *[Signature]* e-mail: cbryant@basin-consulting.com

PO #: PAA - J. Henry

Report Format: Standard TRAP NPDES

Lab # (for use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field # of Containers	Field Filled	Preservatives & # of Containers	Matrix	TPH	TPH: 4181	TPH: 1X 1005	TPH: 1X 1006	TPH: 1X 1008	TPH: 1X 1009	TPH: 1X 1010	TPH: 1X 1011	TPH: 1X 1012	TPH: 1X 1013	TPH: 1X 1014	TPH: 1X 1015	TPH: 1X 1016	TPH: 1X 1017	TPH: 1X 1018	TPH: 1X 1019	TPH: 1X 1020	TPH: 1X 1021	TPH: 1X 1022	TPH: 1X 1023	TPH: 1X 1024	TPH: 1X 1025	TPH: 1X 1026	TPH: 1X 1027	TPH: 1X 1028	TPH: 1X 1029	TPH: 1X 1030	TPH: 1X 1031	TPH: 1X 1032	TPH: 1X 1033	TPH: 1X 1034	TPH: 1X 1035	TPH: 1X 1036	TPH: 1X 1037	TPH: 1X 1038	TPH: 1X 1039	TPH: 1X 1040	TPH: 1X 1041	TPH: 1X 1042	TPH: 1X 1043	TPH: 1X 1044	TPH: 1X 1045	TPH: 1X 1046	TPH: 1X 1047	TPH: 1X 1048	TPH: 1X 1049	TPH: 1X 1050	TPH: 1X 1051	TPH: 1X 1052	TPH: 1X 1053	TPH: 1X 1054	TPH: 1X 1055	TPH: 1X 1056	TPH: 1X 1057	TPH: 1X 1058	TPH: 1X 1059	TPH: 1X 1060	TPH: 1X 1061	TPH: 1X 1062	TPH: 1X 1063	TPH: 1X 1064	TPH: 1X 1065	TPH: 1X 1066	TPH: 1X 1067	TPH: 1X 1068	TPH: 1X 1069	TPH: 1X 1070	TPH: 1X 1071	TPH: 1X 1072	TPH: 1X 1073	TPH: 1X 1074	TPH: 1X 1075	TPH: 1X 1076	TPH: 1X 1077	TPH: 1X 1078	TPH: 1X 1079	TPH: 1X 1080	TPH: 1X 1081	TPH: 1X 1082	TPH: 1X 1083	TPH: 1X 1084	TPH: 1X 1085	TPH: 1X 1086	TPH: 1X 1087	TPH: 1X 1088	TPH: 1X 1089	TPH: 1X 1090	TPH: 1X 1091	TPH: 1X 1092	TPH: 1X 1093	TPH: 1X 1094	TPH: 1X 1095	TPH: 1X 1096	TPH: 1X 1097	TPH: 1X 1098	TPH: 1X 1099	TPH: 1X 1100	TPH: 1X 1101	TPH: 1X 1102	TPH: 1X 1103	TPH: 1X 1104	TPH: 1X 1105	TPH: 1X 1106	TPH: 1X 1107	TPH: 1X 1108	TPH: 1X 1109	TPH: 1X 1110	TPH: 1X 1111	TPH: 1X 1112	TPH: 1X 1113	TPH: 1X 1114	TPH: 1X 1115	TPH: 1X 1116	TPH: 1X 1117	TPH: 1X 1118	TPH: 1X 1119	TPH: 1X 1120	TPH: 1X 1121	TPH: 1X 1122	TPH: 1X 1123	TPH: 1X 1124	TPH: 1X 1125	TPH: 1X 1126	TPH: 1X 1127	TPH: 1X 1128	TPH: 1X 1129	TPH: 1X 1130	TPH: 1X 1131	TPH: 1X 1132	TPH: 1X 1133	TPH: 1X 1134	TPH: 1X 1135	TPH: 1X 1136	TPH: 1X 1137	TPH: 1X 1138	TPH: 1X 1139	TPH: 1X 1140	TPH: 1X 1141	TPH: 1X 1142	TPH: 1X 1143	TPH: 1X 1144	TPH: 1X 1145	TPH: 1X 1146	TPH: 1X 1147	TPH: 1X 1148	TPH: 1X 1149	TPH: 1X 1150	TPH: 1X 1151	TPH: 1X 1152	TPH: 1X 1153	TPH: 1X 1154	TPH: 1X 1155	TPH: 1X 1156	TPH: 1X 1157	TPH: 1X 1158	TPH: 1X 1159	TPH: 1X 1160	TPH: 1X 1161	TPH: 1X 1162	TPH: 1X 1163	TPH: 1X 1164	TPH: 1X 1165	TPH: 1X 1166	TPH: 1X 1167	TPH: 1X 1168	TPH: 1X 1169	TPH: 1X 1170	TPH: 1X 1171	TPH: 1X 1172	TPH: 1X 1173	TPH: 1X 1174	TPH: 1X 1175	TPH: 1X 1176	TPH: 1X 1177	TPH: 1X 1178	TPH: 1X 1179	TPH: 1X 1180	TPH: 1X 1181	TPH: 1X 1182	TPH: 1X 1183	TPH: 1X 1184	TPH: 1X 1185	TPH: 1X 1186	TPH: 1X 1187	TPH: 1X 1188	TPH: 1X 1189	TPH: 1X 1190	TPH: 1X 1191	TPH: 1X 1192	TPH: 1X 1193	TPH: 1X 1194	TPH: 1X 1195	TPH: 1X 1196	TPH: 1X 1197	TPH: 1X 1198	TPH: 1X 1199	TPH: 1X 1200	TPH: 1X 1201	TPH: 1X 1202	TPH: 1X 1203	TPH: 1X 1204	TPH: 1X 1205	TPH: 1X 1206	TPH: 1X 1207	TPH: 1X 1208	TPH: 1X 1209	TPH: 1X 1210	TPH: 1X 1211	TPH: 1X 1212	TPH: 1X 1213	TPH: 1X 1214	TPH: 1X 1215	TPH: 1X 1216	TPH: 1X 1217	TPH: 1X 1218	TPH: 1X 1219	TPH: 1X 1220	TPH: 1X 1221	TPH: 1X 1222	TPH: 1X 1223	TPH: 1X 1224	TPH: 1X 1225	TPH: 1X 1226	TPH: 1X 1227	TPH: 1X 1228	TPH: 1X 1229	TPH: 1X 1230	TPH: 1X 1231	TPH: 1X 1232	TPH: 1X 1233	TPH: 1X 1234	TPH: 1X 1235	TPH: 1X 1236	TPH: 1X 1237	TPH: 1X 1238	TPH: 1X 1239	TPH: 1X 1240	TPH: 1X 1241	TPH: 1X 1242	TPH: 1X 1243	TPH: 1X 1244	TPH: 1X 1245	TPH: 1X 1246	TPH: 1X 1247	TPH: 1X 1248	TPH: 1X 1249	TPH: 1X 1250	TPH: 1X 1251	TPH: 1X 1252	TPH: 1X 1253	TPH: 1X 1254	TPH: 1X 1255	TPH: 1X 1256	TPH: 1X 1257	TPH: 1X 1258	TPH: 1X 1259	TPH: 1X 1260	TPH: 1X 1261	TPH: 1X 1262	TPH: 1X 1263	TPH: 1X 1264	TPH: 1X 1265	TPH: 1X 1266	TPH: 1X 1267	TPH: 1X 1268	TPH: 1X 1269	TPH: 1X 1270	TPH: 1X 1271	TPH: 1X 1272	TPH: 1X 1273	TPH: 1X 1274	TPH: 1X 1275	TPH: 1X 1276	TPH: 1X 1277	TPH: 1X 1278	TPH: 1X 1279	TPH: 1X 1280	TPH: 1X 1281	TPH: 1X 1282	TPH: 1X 1283	TPH: 1X 1284	TPH: 1X 1285	TPH: 1X 1286	TPH: 1X 1287	TPH: 1X 1288	TPH: 1X 1289	TPH: 1X 1290	TPH: 1X 1291	TPH: 1X 1292	TPH: 1X 1293	TPH: 1X 1294	TPH: 1X 1295	TPH: 1X 1296	TPH: 1X 1297	TPH: 1X 1298	TPH: 1X 1299	TPH: 1X 1300	TPH: 1X 1301	TPH: 1X 1302	TPH: 1X 1303	TPH: 1X 1304	TPH: 1X 1305	TPH: 1X 1306	TPH: 1X 1307	TPH: 1X 1308	TPH: 1X 1309	TPH: 1X 1310	TPH: 1X 1311	TPH: 1X 1312	TPH: 1X 1313	TPH: 1X 1314	TPH: 1X 1315	TPH: 1X 1316	TPH: 1X 1317	TPH: 1X 1318	TPH: 1X 1319	TPH: 1X 1320	TPH: 1X 1321	TPH: 1X 1322	TPH: 1X 1323	TPH: 1X 1324	TPH: 1X 1325	TPH: 1X 1326	TPH: 1X 1327	TPH: 1X 1328	TPH: 1X 1329	TPH: 1X 1330	TPH: 1X 1331	TPH: 1X 1332	TPH: 1X 1333	TPH: 1X 1334	TPH: 1X 1335	TPH: 1X 1336	TPH: 1X 1337	TPH: 1X 1338	TPH: 1X 1339	TPH: 1X 1340	TPH: 1X 1341	TPH: 1X 1342	TPH: 1X 1343	TPH: 1X 1344	TPH: 1X 1345	TPH: 1X 1346	TPH: 1X 1347	TPH: 1X 1348	TPH: 1X 1349	TPH: 1X 1350	TPH: 1X 1351	TPH: 1X 1352	TPH: 1X 1353	TPH: 1X 1354	TPH: 1X 1355	TPH: 1X 1356	TPH: 1X 1357	TPH: 1X 1358	TPH: 1X 1359	TPH: 1X 1360	TPH: 1X 1361	TPH: 1X 1362	TPH: 1X 1363	TPH: 1X 1364	TPH: 1X 1365	TPH: 1X 1366	TPH: 1X 1367	TPH: 1X 1368	TPH: 1X 1369	TPH: 1X 1370	TPH: 1X 1371	TPH: 1X 1372	TPH: 1X 1373	TPH: 1X 1374	TPH: 1X 1375	TPH: 1X 1376	TPH: 1X 1377	TPH: 1X 1378	TPH: 1X 1379	TPH: 1X 1380	TPH: 1X 1381	TPH: 1X 1382	TPH: 1X 1383	TPH: 1X 1384	TPH: 1X 1385	TPH: 1X 1386	TPH: 1X 1387	TPH: 1X 1388	TPH: 1X 1389	TPH: 1X 1390	TPH: 1X 1391	TPH: 1X 1392	TPH: 1X 1393	TPH: 1X 1394	TPH: 1X 1395	TPH: 1X 1396	TPH: 1X 1397	TPH: 1X 1398	TPH: 1X 1399	TPH: 1X 1400	TPH: 1X 1401	TPH: 1X 1402	TPH: 1X 1403	TPH: 1X 1404	TPH: 1X 1405	TPH: 1X 1406	TPH: 1X 1407	TPH: 1X 1408	TPH: 1X 1409	TPH: 1X 1410	TPH: 1X 1411	TPH: 1X 1412	TPH: 1X 1413	TPH: 1X 1414	TPH: 1X 1415	TPH: 1X 1416	TPH: 1X 1417	TPH: 1X 1418	TPH: 1X 1419	TPH: 1X 1420	TPH: 1X 1421	TPH: 1X 1422	TPH: 1X 1423	TPH: 1X 1424	TPH: 1X 1425	TPH: 1X 1426	TPH: 1X 1427	TPH: 1X 1428	TPH: 1X 1429	TPH: 1X 1430	TPH: 1X 1431	TPH: 1X 1432	TPH: 1X 1433	TPH: 1X 1434	TPH: 1X 1435	TPH: 1X 1436	TPH: 1X 1437	TPH: 1X 1438	TPH: 1X 1439	TPH: 1X 1440	TPH: 1X 1441	TPH: 1X 1442	TPH: 1X 1443	TPH: 1X 1444	TPH: 1X 1445	TPH: 1X 1446	TPH: 1X 1447	TPH: 1X 1448	TPH: 1X 1449	TPH: 1X 1450	TPH: 1X 1451	TPH: 1X 1452	TPH: 1X 1453	TPH: 1X 1454	TPH: 1X 1455	TPH: 1X 1456	TPH: 1X 1457	TPH: 1X 1458	TPH: 1X 1459	TPH: 1X 1460	TPH: 1X 1461	TPH: 1X 1462	TPH: 1X 1463	TPH: 1X 1464	TPH: 1X 1465	TPH: 1X 1466	TPH: 1X 1467	TPH: 1X 1468	TPH: 1X 1469	TPH: 1X 1470	TPH: 1X 1471	TPH: 1X 1472	TPH: 1X 1473	TPH: 1X 1474	TPH: 1X 1475	TPH: 1X 1476	TPH: 1X 1477	TPH: 1X 1478	TPH: 1X 1479	TPH: 1X 1480	TPH: 1X 1481	TPH: 1X 1482	TPH: 1X 1483	TPH: 1X 1484	TPH: 1X 1485	TPH: 1X 1486	TPH: 1X 1487	TPH: 1X 1488	TPH: 1X 1489	TPH: 1X 1490	TPH: 1X 1491	TPH: 1X 1492	TPH: 1X 1493	TPH: 1X 1494	TPH: 1X 1495	TPH: 1X 1496	TPH: 1X 1497	TPH: 1X 1498	TPH: 1X 1499	TPH: 1X 1500	TPH: 1X 1501	TPH: 1X 1502	TPH: 1X 1503	TPH: 1X 1504	TPH: 1X 1505	TPH: 1X 1506	TPH: 1X 1507	TPH: 1X 1508	TPH: 1X 1509	TPH: 1X 1510	TPH: 1X 1511	TPH: 1X 1512	TPH: 1X 1513	TPH: 1X 1514	TPH: 1X 1515	TPH: 1X 1516	TPH: 1X 1517	TPH: 1X 1518	TPH: 1X 1519	TPH: 1X 1520	TPH: 1X 1521	TPH: 1X 1522	TPH: 1X 1523	TPH: 1X 1524	TPH: 1X 1525	TPH: 1X 1526	TPH: 1X 1527	TPH: 1X 1528	TPH: 1X 1529	TPH: 1X 1530	TPH: 1X 1531	TPH: 1X 1532	TPH: 1X 1533	TPH: 1X 1534	TPH: 1X 1535	TPH: 1X 1536	TPH: 1X 1537	TPH: 1X 1538	TPH: 1X 1539	TPH: 1X 1540	TPH: 1X 1541	TPH: 1X 1542	TPH: 1X 1543	TPH: 1X 1544	TPH: 1X 1545	TPH: 1X 1546	TPH: 1X 1547	TPH: 1X 1548	TPH: 1X 1549	TPH: 1X 1550	TPH: 1X 1551	TPH: 1X 1552	TPH: 1X 1553	TPH: 1X 1554	TPH: 1X 1555	TPH: 1X 1556	TPH: 1X 1557	TPH: 1X 1558	TPH: 1X 1559	TPH: 1X 1560	TPH: 1X 1561	TPH: 1X 1562	TPH: 1X 1563	TPH: 1X 1564	TPH: 1X 1565	TPH: 1X 1566	TPH: 1X 1567	TPH: 1X 1568	TPH: 1X 1569	TPH: 1X 1570	TPH: 1X 1571	TPH: 1X 1572	TPH: 1X 1573	TPH: 1X 1574	TPH: 1X 1575	TPH: 1X 1576	TPH: 1X 1577	TPH: 1X 1578	TPH: 1X 1579	TPH: 1X 1580	TPH: 1X 1581	TPH: 1X 1582	TPH: 1X 1583	TPH: 1X 1584	TPH: 1X 1585	TPH: 1X 1586	TPH: 1X 1587	TPH: 1X 1588	TPH: 1X 1589	TPH: 1X 1590	TPH: 1X 1591	TPH: 1X 1592	TPH: 1X 1593	TPH: 1X 1594	TPH: 1X 1595	TPH: 1X 1596	TPH: 1X 1597	TPH: 1X 1598	TPH: 1X 1599	TPH: 1X 1600	TPH: 1X 1601	TPH: 1X 1602	TPH: 1X 1603	TPH: 1X 1604	TPH: 1X 1605	TPH: 1X 1606	TPH: 1X 1607	TPH: 1X 1608	TPH: 1X 1609	TPH: 1X 1610	TPH: 1X 1611	TPH: 1X 1612	TPH: 1X 1613	TPH: 1X 1614	TPH: 1X 1615	TPH: 1X 1616	TPH: 1X 1617	TPH: 1X 1618	TPH: 1X 1619	TPH: 1X 1620	TPH: 1X 1621	TPH: 1X 1622	TPH: 1X 1623	TPH: 1X 1624	TPH: 1X 1625	TPH: 1X 1626	TPH: 1X 1627	TPH: 1X 1628	TPH: 1X 1629	TPH: 1X 1630	TPH: 1X 1631	TPH: 1X 1632	TPH: 1X 1633	TPH: 1X 1634	TPH: 1X 1635	TPH: 1X 1636	TPH: 1X 1637	TPH: 1X 1638	TPH: 1X 1639	TPH: 1X 1640	TPH: 1X 1641	TPH: 1X 1642	TPH: 1X 1643	TPH: 1X 1644	TPH: 1X 1645	TPH: 1X 1646	TPH: 1X 1647	TPH: 1X 1648	TPH: 1X 1649	TPH: 1X 1650	TPH: 1X 1651	TPH: 1X 1652	TPH: 1X 1653	TPH: 1X 1654	TPH: 1X 1655	TPH: 1X 1656	TPH: 1X 1657	TPH: 1X 1658	TPH: 1X 1659	TPH: 1X 1660	TPH: 1X 1661	TPH: 1X 1662	TPH: 1X 1663	TPH: 1X 1664	TPH: 1X 1665	TPH: 1X 1666	TPH: 1X 1667	TPH: 1X 1668	TPH: 1X 1669	TPH: 1X 1670	TPH: 1X 1671	TPH: 1X 1672	TPH: 1X 1673	TPH: 1X 1674	TPH: 1X 167
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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin/Plains
 Date/ Time: 05/27/09 8:34
 Lab ID #: 333729
 Initials: GWA

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	-1.5 °C	
#2	Shipping container in good condition?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#3	Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Present	
#5	Chain of Custody present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#11	Containers supplied by ELOT?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#12	Samples in proper container/ bottle?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#13	Samples properly preserved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#14	Sample bottles intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#15	Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#16	Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#18	All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#19	Subcontract of sample(s)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Not Applicable	
#20	VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> 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 334002

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal - Legacy

2009-092

03-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



03-JUN-09

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

Reference: XENCO Report No: **334002**
14" Vac to Jal - Legacy
Project Address: Jal, NM

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 334002. 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. 334002 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

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 334002



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal - Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Main Exc. ESW-1 @ 8'bgs	S	May-28-09 15:30		334002-001
Main Exc. ESW-2 @ 5'bgs	S	May-28-09 15:40		334002-002
Main Exc. ESW-3 @ 3'bgs	S	May-28-09 15:50		334002-003
Main Exc. SSW @ 9.5'bgs	S	May-28-09 16:00		334002-004



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal - Legacy

Project ID: 2009-092

Report Date: 03-JUN-09

Work Order Number: 334002

Date Received: 05/28/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-760577 Percent Moisture

AD2216A

Batch 760577, Percent Moisture RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 334002-001, -003, -002, -004.

Batch: LBA-760797 BTEX-MTBE EPA 8021B

SW8021BM

Batch 760797, 4-Bromofluorobenzene recovered below QC limits. Data not confirmed by re-analysis. Samples affected are: 531040-1-BLK, 334002-002, 334002-001. Matrix Interferences are suspected in sample surrogate failures.

SW8021BM

Batch 760797, Ethylbenzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 334002-001, -003, -002, -004.

The Laboratory Control Sample for Ethylbenzene is within laboratory Control Limits

Batch: LBA-760837 TPH by SW8015 Mod

None

Batch: LBA-761030 TPH by SW8015 Mod

None



Certificate of Analysis Summary 334002

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Contact: Jason Henry

Project Location: Jal, NM

Project Name: 14" Vac to Jal - Legacy

Date Received in Lab: Thu May-28-09 05:45 pm

Report Date: 03-JUN-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	Extracted:	Analyzed:	Units/RL:	334002-001	334002-002	334002-003	334002-004
	Main Exc. ESW-1 @ 8' bgs	Main Exc. ESW-2 @ 5' bgs	Main Exc. ESW-3 @ 3' bgs	Main Exc. SSW @ 9.5' bgs	May-28-09 15:30	May-28-09 15:40	May-28-09 15:50	May-28-09 16:00	SOIL	SOIL	SOIL	SOIL
BTEX by EPA 8021B	Extracted:	Jun-01-09 08:00	Jun-01-09 08:00	Jun-01-09 08:00	Jun-01-09 08:00	Jun-01-09 08:00	Jun-01-09 08:00	Jun-01-09 08:00	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011
	Analyzed:	Jun-01-09 16:32	Jun-01-09 16:54	Jun-01-09 17:16	Jun-01-09 17:38	Jun-01-09 17:16	Jun-01-09 17:38	Jun-01-09 17:38	RL mg/kg	RL mg/kg	RL mg/kg	RL mg/kg
	Units/RL:	RL	RL	RL	RL	RL	RL	RL	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011
Percent Moisture	Extracted:	May-29-09 14:05	May-29-09 14:05	May-29-09 14:05	May-29-09 14:05	May-29-09 14:05	May-29-09 14:05	May-29-09 14:05	% RL	% RL	% RL	% RL
	Analyzed:	10.85	6.16	3.18	9.90	3.18	9.90	9.90	1.00	1.00	1.00	1.00
	Units/RL:	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL
TPH By SW8015 Mod	Extracted:	Jun-01-09 12:14	Jun-01-09 14:45	Jun-01-09 14:45	Jun-01-09 14:45	Jun-01-09 14:45	Jun-01-09 14:45	Jun-01-09 14:45	ND 16.8	ND 16.0	ND 15.5	ND 16.6
	Analyzed:	Jun-01-09 21:12	Jun-02-09 16:58	Jun-02-09 17:21	Jun-02-09 17:44	Jun-02-09 17:21	Jun-02-09 17:44	Jun-02-09 17:44	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Units/RL:	RL	RL	RL	RL	RL	RL	RL	ND 16.8	ND 16.0	ND 15.5	ND 16.6
									38.8	ND	59.9	ND
C6-C12 Gasoline Range Hydrocarbons	Extracted:	38.8	ND	26.3	86.2	26.3	86.2	26.3	ND	26.3	86.2	26.3
	Analyzed:	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Units/RL:	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL
C12-C28 Diesel Range Hydrocarbons	Extracted:	38.8	ND	26.3	86.2	26.3	86.2	26.3	ND	26.3	86.2	26.3
	Analyzed:	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Units/RL:	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL
C28-C35 Oil Range Hydrocarbons	Extracted:	38.8	ND	26.3	86.2	26.3	86.2	26.3	ND	26.3	86.2	26.3
	Analyzed:	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Units/RL:	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL
Total TPH	Extracted:	38.8	ND	26.3	86.2	26.3	86.2	26.3	ND	26.3	86.2	26.3
	Analyzed:	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Units/RL:	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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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.

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Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal - Legacy

Work Orders : 334002,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 531040-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 09:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 760797

Sample: 531040-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 09:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 760797

Sample: 531040-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 10:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0220	0.0300	73	80-120	*

Lab Batch #: 760797

Sample: 334002-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 16:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0223	0.0300	74	80-120	*

Lab Batch #: 760797

Sample: 334002-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 16:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0232	0.0300	77	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: 14" Vac to Jal - Legacy

Work Orders : 334002,
Lab Batch #: 760797

Sample: 334002-003 / SMP

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 17:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 760797

Sample: 334002-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 17:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0245	0.0300	82	80-120	

Lab Batch #: 760797

Sample: 333729-025 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 19:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 760797

Sample: 333729-025 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 19:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 760837

Sample: 531068-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 12:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	42.0	50.0	84	70-135	

* 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: 14" Vac to Jal - Legacy

Work Orders : 334002,
Lab Batch #: 760837

Project ID: 2009-092

Sample: 531068-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 06/01/09 12:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	42.8	50.0	86	70-135	

Lab Batch #: 760837

Sample: 531068-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 06/01/09 13:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.3	100	92	70-135	
o-Terphenyl	47.0	50.0	94	70-135	

Lab Batch #: 760837

Sample: 334002-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 21:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.6	100	97	70-135	
o-Terphenyl	52.2	50.0	104	70-135	

Lab Batch #: 760837

Sample: 333729-027 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 21:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	47.5	50.0	95	70-135	

Lab Batch #: 760837

Sample: 333729-027 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 21:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	49.1	50.0	98	70-135	

* 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: 14" Vac to Jal - Legacy

Work Orders : 334002,
Lab Batch #: 761030

Project ID: 2009-092

Sample: 531173-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 15:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	47.3	50.0	95	70-135	

Lab Batch #: 761030

Sample: 531173-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 16:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	46.0	50.0	92	70-135	

Lab Batch #: 761030

Sample: 531173-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 16:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.3	100	94	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

Lab Batch #: 761030

Sample: 334002-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 16:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.1	100	98	70-135	
o-Terphenyl	52.0	50.0	104	70-135	

Lab Batch #: 761030

Sample: 334002-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 17:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	54.0	50.0	108	70-135	

* 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: 14" Vac to Jal - Legacy

Work Orders : 334002,
Lab Batch #: 761030

Sample: 334002-004 / SMP

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 17:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	53.8	50.0	108	70-135	

Lab Batch #: 761030

Sample: 334002-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 21:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	55.0	50.0	110	70-135	

Lab Batch #: 761030

Sample: 334002-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 22:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	52.3	50.0	105	70-135	

* 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: 14" Vac to Jal - Legacy

Work Order #: 334002

Project ID: 2009-092

Analyst: ASA

Date Prepared: 06/01/2009

Date Analyzed: 06/01/2009

Lab Batch ID: 760797

Sample: 531040-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.1105	111	0.1	0.1094	109	1	70-130	35	
Toluene	ND	0.1000	0.1066	107	0.1	0.1053	105	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1109	111	0.1	0.1096	110	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2246	112	0.2	0.2219	111	1	70-135	35	
o-Xylene	ND	0.1000	0.1060	106	0.1	0.1053	105	1	71-133	35	

Analyst: BHW

Date Prepared: 06/01/2009

Date Analyzed: 06/01/2009

Lab Batch ID: 760837

Sample: 531068-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH By SW8015 Mod											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	842	84	1000	841	84	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1040	104	1000	1040	104	0	70-135	35	

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: 14" Vac to Jal - Legacy

Work Order #: 334002

Project ID: 2009-092

Analyst: BHW

Date Prepared: 06/01/2009

Date Analyzed: 06/02/2009

Lab Batch ID: 761030

Batch #: 1

Sample: 531173-1-BKS

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	877	88	1000	873	87	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1120	112	1000	1100	110	2	70-135	35	

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 - MSD Recoveries



Project Name: 14" Vac to Jal - Legacy

Work Order #: 334002

Lab Batch ID: 760797

Date Analyzed: 06/01/2009

Reporting Units: mg/kg

Project ID: 2009-092

QC-Sample ID: 333729-025 S Batch #: 1 Matrix: Soil

Date Prepared: 06/01/2009 Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1162	0.1004	86	0.1162	0.1043	90	4	70-130	35	
Toluene	ND	0.1162	0.0976	84	0.1162	0.0997	86	2	70-130	35	
Ethylbenzene	ND	0.1162	0.0802	69	0.1162	0.0777	67	3	71-129	35	X
m,p-Xylenes	ND	0.2323	0.2091	90	0.2323	0.2156	93	3	70-135	35	
o-Xylene	ND	0.1162	0.1001	86	0.1162	0.1025	88	2	71-133	35	

Lab Batch ID: 760837

Date Analyzed: 06/01/2009

Reporting Units: mg/kg

QC-Sample ID: 333729-027 S Batch #: 1 Matrix: Soil

Date Prepared: 06/01/2009 Analyst: BHW

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH By SW8015 Mod											
C6-C12 Gasoline Range Hydrocarbons	ND	1170	1030	88	1170	1060	91	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	69.7	1170	1320	107	1170	1380	112	4	70-135	35	

Lab Batch ID: 761030

Date Analyzed: 06/02/2009

Reporting Units: mg/kg

QC-Sample ID: 334002-004 S Batch #: 1 Matrix: Soil

Date Prepared: 06/01/2009 Analyst: BHW

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH By SW8015 Mod											
C6-C12 Gasoline Range Hydrocarbons	ND	1110	1000	90	1110	1040	94	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1110	1240	112	1110	1290	116	4	70-135	35	

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

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

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



Sample Duplicate Recovery



Project Name: 14" Vac to Jal - Legacy

Work Order #: 334002

Lab Batch #: 760577

Project ID: 2009-092

Date Analyzed: 05/29/2009

Date Prepared: 05/29/2009

Analyst: JLG

QC- Sample ID: 333999-001 S D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	2.91	5.39	60	20	F

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Plains Basin
 Date/ Time: 05-28-09 @ 1745
 Lab ID #: 3374002
 Initials: JMF

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? / (als)	(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 337175

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14-Inch Vac to Jal- Legacy

2009-092

03-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)

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03-AUG-09

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

Reference: XENCO Report No: **337175**
14-Inch Vac to Jal- Legacy
Project Address: Lea County, NM

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 337175. 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. 337175 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

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Sample Cross Reference 337175



PLAINS ALL AMERICAN EH&S, Midland, TX

14-Inch Vac to Jal- Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1 @ 5'	S	Jul-01-09 09:30		337175-001
MW-1 @ 15'	S	Jul-01-09 09:50		337175-002
MW-1 @ 25'	S	Jul-01-09 10:00		337175-003
MW-1 @ 35'	S	Jul-01-09 10:20		337175-004
MW-1 @ 45'	S	Jul-01-09 10:45		337175-005
MW-1 @ 50'	S	Jul-01-09 11:15		337175-006
MW-1 @ 55'	S	Jul-01-09 12:05		337175-007
SB-2 @ 5'	S	Jul-01-09 13:10		337175-008
SB-2 @ 15'	S	Jul-01-09 13:40		337175-009
SB-2 @ 25'	S	Jul-01-09 14:10		337175-010
SB-2 @ 35'	S	Jul-01-09 14:35		337175-011
SB-2 @ 45'	S	Jul-01-09 15:10		337175-012
SB-2 @ 50'	S	Jul-01-09 15:40		337175-013
SB-2 @ 55'	S	Jul-01-09 16:10		337175-014
SB-3 @ 5'	S	Jul-02-09 09:50		337175-015
SB-3 @ 15'	S	Jul-02-09 10:15		337175-016
SB-3 @ 25'	S	Jul-02-09 10:35		337175-017
SB-3 @ 35'	S	Jul-02-09 11:05		337175-018
SB-3 @ 45'	S	Jul-02-09 11:30		337175-019
SB-3 @ 50'	S	Jul-02-09 11:55		337175-020
SB-3 @ 55'	S	Jul-02-09 12:25		337175-021



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal- Legacy

Project ID: 2009-092

Report Date: 03-AUG-09

Work Order Number: 337175

Date Received: 07/06/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-764625 Percent Moisture

None

Batch: LBA-764626 Percent Moisture

None

Batch: LBA-764775 TX1005

None

Batch: LBA-764777 TPH by SW8015 Mod

None

Batch: LBA-765019 BTEX-MTBE EPA 8021B
SW8021BM

Batch 765019, 4-Bromofluorobenzene recovered below QC limits Sample Data not confirmed by re-analysis. Samples affected are: 533394-1-BLK, 337175-002, 337175-001.

4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 337175-003, 337175-002, 337175-001, 337025-001 S, 337025-001 SD, and 533394-1-BKS

SW8021BM

Batch 765019, Toluene recovered below QC limits in the Matrix Spike.

Samples affected are: 337175-001, -002, -003.

The Laboratory Control Sample for Toluene is within laboratory Control Limits



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal- Legacy

Project ID: 2009-092
Work Order Number: 337175

Report Date: 03-AUG-09
Date Received: 07/06/2009

Batch: LBA-765081 BTEX-MTBE EPA 8021B
SW8021BM

Batch 765081: 4-Bromofluorobenzene recovered above QC limits. QC Data not confirmed by re-analysis. Samples affected are: 337175-021, 337175-007.

1,4-Difluorobenzene recovered below QC limits. QC Data not confirmed by re-analysis. Samples affected are: 337175-019, 337175-020, 337175-021, 337175-011.
Matrix interferences is suspected.

Batch: LBA-765200 BTEX-MTBE EPA 8021B
SW8021BM

Batch 765200, Benzene, Toluene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 337175-013, -005, -006, -010, -014.

The Laboratory Control Sample for Toluene, Benzene is within laboratory Control Limits

SW8021BM

Batch 765200, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 533475-1-BLK.

4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 337713-006 S and 337713-006 SD, 337175-006, 337175-005, 337175-010



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal- Legacy

Project ID: 2009-092
Work Order Number: 337175

Report Date: 03-AUG-09
Date Received: 07/06/2009

Batch: LBA-765231 BTEX-MTBE EPA 8021B
SW8021BM

Batch 765231, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 337175-015.

4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 533520-1-BLK.

1,4-Difluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 337175-009.

4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; Sample data confirmed by re-analysis

Samples affected are: 337719-001 S,337175-004,337175-015. QC data not confirmed by reanalysis.

SW8021BM

Batch 765231, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Benzene recovered below QC limits in the Matrix Spike Duplicate.

Samples affected are: 337175-004, -009, -015.

The Laboratory Control Sample for Toluene, m,p-Xylenes , Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits

SW8021BM

Batch 765231, Ethylbenzene, m,p-Xylenes , o-Xylene RPD was outside QC limits; is reportable as LCS is passing.

Samples affected are: 337175-004, -009, -015



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal- Legacy

Project ID: 2009-092
Work Order Number: 337175

Report Date: 03-AUG-09
Date Received: 07/06/2009

Batch: LBA-765323 BTEX-MTBE EPA 8021B
SW8021BM

Batch 765323, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate.

Samples affected are: 337175-012, -016, -017, -008.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits

SW8021BM

Batch 765323, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 533559-1-BLK.

4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 533559-1-BKS, 533559-1-BSD, 337175-012S, 337175-012SD

4-Bromofluorobenzene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 337175-016 and -008

Batch: LBA-767305 Inorganic Anions by EPA 300
None

Batch: LBA-767307 Inorganic Anions by EPA 300
None



Certificate of Analysis Summary 337175

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: 14-Inch Vac to Jal-Legacy

Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Jul-06-09 12:35 pm

Report Date: 03-AUG-09

Project Manager: Brent Barron, II

	Lab Id:	337175-001	337175-002	337175-003	337175-004	337175-005	337175-006
<i>Analysis Requested</i>	<i>Field Id:</i>	MW-1 @ 5'	MW-1 @ 15'	MW-1 @ 25'	MW-1 @ 35'	MW-1 @ 45'	MW-1 @ 50'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-01-09 09:30	Jul-01-09 09:50	Jul-01-09 10:00	Jul-01-09 10:20	Jul-01-09 10:45	Jul-01-09 11:15
Percent Moisture	<i>Extracted:</i>	Jul-06-09 12:45					
	<i>Analyzed:</i>	%	%	%	%	%	%
	<i>Units/RL:</i>	18.20	26.12	7.55	7.30	2.63	4.21
		1.00	1.00	1.00	1.00	1.00	1.00

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II
Odessa Laboratory Manager



Certificate of Analysis Summary 337175

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Jul-06-09 12:35 pm

Report Date: 03-AUG-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	Extracted:	Analyzed:	Units/RL:	337175-013	337175-014	337175-015	337175-016	337175-017	337175-018
Anions by EPA 300	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	471	952	152	73.0	54.4	24.8
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
BTEX by EPA 8021B	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	471	952	152	73.0	54.4	24.8
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19	
Percent Moisture	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	471	952	152	73.0	54.4	24.8
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19	
TPH By SW8015 Mod	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	471	952	152	73.0	54.4	24.8
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
	SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19
SOIL	SB-2 @ 50'			Jul-01-09 15:40	Jul-31-09 07:55	mg/kg	RL	10.7	22.4	10.6	5.43	5.53	5.19	

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Brent Barron, II
Odessa Laboratory Manager



Certificate of Analysis Summary 337175

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092
 Contact: Jason Henry
 Project Location: Lea County, NM

Date Received in Lab: Mon Jul-06-09 12:35 pm
 Report Date: 03-AUG-09
 Project Manager: Brent Barron, II

<i>Analysis Requested</i>		<i>Lab Id:</i>	<i>Field Id:</i>	<i>Depth:</i>	<i>Matrix:</i>	<i>Sampled:</i>	<i>Extracted:</i>	<i>Analyzed:</i>	<i>Units/RL:</i>
Anions by EPA 300		337175-019	SB-3 @ 45'		SOIL	Jul-02-09 11:30	Jul-31-09 13:25	mg/kg RL	17.2 5.13
		337175-020	SB-3 @ 50'		SOIL	Jul-02-09 11:55	Jul-31-09 13:25	mg/kg RL	8.94 5.12
		337175-021	SB-3 @ 55'		SOIL	Jul-02-09 12:25	Jul-31-09 13:25	mg/kg RL	24.1 5.14
BTEX by EPA 8021B									
<i>Extracted:</i>							Jul-09-09 17:00	Jul-09-09 17:00	ND 0.0010
<i>Analyzed:</i>							Jul-10-09 12:13	Jul-10-09 12:35	ND 0.0020
<i>Units/RL:</i>							mg/kg RL	mg/kg RL	0.0015 0.0010
Benzene									0.0035 0.0020
Toluene									0.0142 0.0010
Ethylbenzene									0.0305 0.0021
m,p-Xylenes									0.0137 0.0010
o-Xylene									0.0442 0.0010
Total Xylenes									0.0619 0.0010
Total BTEX									
Percent Moisture									
<i>Extracted:</i>							Jul-06-09 12:45	Jul-06-09 12:45	% RL
<i>Analyzed:</i>							Jul-07-09 13:22	Jul-07-09 13:22	% RL
<i>Units/RL:</i>							mg/kg RL	mg/kg RL	2.27 1.00
Percent Moisture									2.65 1.00
TPH By SW8015 Mod									
<i>Extracted:</i>							Jul-07-09 13:22	Jul-07-09 13:22	mg/kg RL
<i>Analyzed:</i>							Jul-08-09 06:59	Jul-08-09 07:48	mg/kg RL
<i>Units/RL:</i>							mg/kg RL	mg/kg RL	23.3 15.4
C6-C12 Gasoline Range Hydrocarbons									ND 15.3
C12-C28 Diesel Range Hydrocarbons									72.2 15.3
C28-C35 Oil Range Hydrocarbons									ND 15.3
Total TPH									72.2 15.3

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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.

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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 765019

Project ID: 2009-092

Sample: 533394-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/09/09 22:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0370	0.0300	123	80-120	**

Lab Batch #: 765019

Sample: 533394-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/09/09 22:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0348	0.0300	116	80-120	

Lab Batch #: 765019

Sample: 533394-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/09/09 23:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0127	0.0300	42	80-120	**

Lab Batch #: 765019

Sample: 337175-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/10/09 01:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0517	0.0300	172	80-120	*

Lab Batch #: 765019

Sample: 337175-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/10/09 02:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0556	0.0300	185	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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 765019

Project ID: 2009-092

Sample: 337175-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/10/09 07:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0530	0.0300	177	80-120	*

Lab Batch #: 765019 Sample: 337025-001 S / MS
Units: mg/kg Date Analyzed: 07/10/09 08:17

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0397	0.0300	132	80-120	**

Lab Batch #: 765019 Sample: 337025-001 SD / MSD
Units: mg/kg Date Analyzed: 07/10/09 08:39

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0368	0.0300	123	80-120	**

Lab Batch #: 765081 Sample: 533433-1-BKS / BKS
Units: mg/kg Date Analyzed: 07/10/09 09:22

Batch: 1 Matrix: Solid

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0366	0.0300	122	80-120	*

Lab Batch #: 765081 Sample: 533433-1-BSD / BSD
Units: mg/kg Date Analyzed: 07/10/09 09:43

Batch: 1 Matrix: Solid

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0361	0.0300	120	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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 765081

Project ID: 2009-092

Sample: 533433-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/10/09 10:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 765081

Sample: 337175-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 11:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 765081

Sample: 337175-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 11:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0235	0.0300	78	80-120	*
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

Lab Batch #: 765081

Sample: 337175-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 12:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0237	0.0300	79	80-120	*
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 765081

Sample: 337175-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 12:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0236	0.0300	79	80-120	*
4-Bromofluorobenzene	0.0389	0.0300	130	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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 765081

Project ID: 2009-092

Sample: 337175-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 13:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0368	0.0300	123	80-120	*

Lab Batch #: 765081

Sample: 337175-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 13:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0233	0.0300	78	80-120	*
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 765200

Sample: 533475-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/12/09 08:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0356	0.0300	119	80-120	

Lab Batch #: 765200

Sample: 533475-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/12/09 09:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0155	0.0300	52	80-120	**

Lab Batch #: 765200

Sample: 337175-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/12/09 12:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0353	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.



Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 765200

Sample: 337175-006 / SMP

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/12/09 15:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0443	0.0300	148	80-120	*

Lab Batch #: 765200

Sample: 337175-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/12/09 15:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0603	0.0300	201	80-120	*

Lab Batch #: 765200

Sample: 337175-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/12/09 15:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0334	0.0300	111	80-120	

Lab Batch #: 765200

Sample: 337175-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/12/09 16:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0419	0.0300	140	80-120	*

Lab Batch #: 765200

Sample: 337713-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/12/09 16:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0403	0.0300	134	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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 765200

Sample: 337713-006 SD / MSD

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/12/09 17:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0384	0.0300	128	80-120	*

Lab Batch #: 765231

Sample: 533520-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/13/09 02:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 765231

Sample: 533520-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/13/09 03:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0347	0.0300	116	80-120	

Lab Batch #: 765231

Sample: 533520-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/13/09 03:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0159	0.0300	53	80-120	*

Lab Batch #: 765231

Sample: 337175-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/13/09 08:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0380	0.0300	127	80-120	**
4-Bromofluorobenzene	0.0361	0.0300	120	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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 765231

Project ID: 2009-092

Sample: 337175-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/13/09 09:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0234	0.0300	78	80-120	**
4-Bromofluorobenzene	0.0424	0.0300	141	80-120	**

Lab Batch #: 765231

Sample: 337175-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/13/09 10:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0507	0.0300	169	80-120	**

Lab Batch #: 765231

Sample: 337719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/13/09 10:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0362	0.0300	121	80-120	*

Lab Batch #: 765231

Sample: 337719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/13/09 11:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 765323

Sample: 533559-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/13/09 21:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0368	0.0300	123	80-120	*

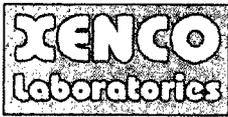
* Surrogate outside of Laboratory QC limits

** 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 765323

Sample: 533559-1-BSD / BSD

Project ID: 2009-092

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/13/09 21:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0362	0.0300	121	80-120	*

Lab Batch #: 765323

Sample: 533559-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/13/09 22:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0164	0.0300	55	80-120	*

Lab Batch #: 765323

Sample: 337175-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/13/09 22:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0330	0.0300	110	80-120	

Lab Batch #: 765323

Sample: 337175-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/14/09 00:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0246	0.0300	82	80-120	
4-Bromofluorobenzene	0.0675	0.0300	225	80-120	**

Lab Batch #: 765323

Sample: 337175-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/14/09 01:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0532	0.0300	177	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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 765323

Project ID: 2009-092

Sample: 337175-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/14/09 02:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 765323 Sample: 337175-012 S / MS
Units: mg/kg Date Analyzed: 07/14/09 05:31

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0393	0.0300	131	80-120	*

Lab Batch #: 765323 Sample: 337175-012 SD / MSD
Units: mg/kg Date Analyzed: 07/14/09 07:37

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	80-120	
4-Bromofluorobenzene	0.0383	0.0300	128	80-120	*

Lab Batch #: 764775 Sample: 533254-1-BKS / BKS
Units: mg/kg Date Analyzed: 07/07/09 11:21

Batch: 1 Matrix: Solid

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	43.9	50.0	88	70-135	

Lab Batch #: 764775 Sample: 533254-1-BSD / BSD
Units: mg/kg Date Analyzed: 07/07/09 11:46

Batch: 1 Matrix: Solid

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	41.4	50.0	83	70-135	

* 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: 14-Inch Vac to Jal-Legacy

Work Orders : 337175,
Lab Batch #: 764775

Sample: 533254-1-BLK / BLK

Project ID: 2009-092

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/07/09 12:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.0	100	96	70-135	
o-Terphenyl	45.3	50.0	91	70-135	

Lab Batch #: 764775 Sample: 337175-001 / SMP
Units: mg/kg Date Analyzed: 07/07/09 18:57

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.9	100	96	70-135	
o-Terphenyl	42.5	50.0	85	70-135	

Lab Batch #: 764775 Sample: 337175-002 / SMP
Units: mg/kg Date Analyzed: 07/07/09 19:22

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.8	103	70-135	
o-Terphenyl	48.2	49.9	97	70-135	

Lab Batch #: 764775 Sample: 337175-003 / SMP
Units: mg/kg Date Analyzed: 07/07/09 19:47

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

Lab Batch #: 764775 Sample: 337175-004 / SMP
Units: mg/kg Date Analyzed: 07/07/09 20:12

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	51.8	50.0	104	70-135	

* 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: 14-Inch Vac to Jal- Legacy



Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 764775

Sample: 337175-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 20:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	49.3	49.8	99	70-135	

Lab Batch #: 764775

Sample: 337175-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 21:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.6	100	100	70-135	
o-Terphenyl	48.0	50.0	96	70-135	

Lab Batch #: 764775

Sample: 337224-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 21:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	51.9	50.0	104	70-135	



Lab Batch #: 764777

Sample: 337224-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 21:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.9	129	70-135	
o-Terphenyl	47.5	50.0	95	70-135	

Lab Batch #: 764777

Sample: 533256-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 00:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	45.0	50.0	90	70-135	

* 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 764777

Project ID: 2009-092

Sample: 533256-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/08/09 00:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	118	100	118	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

Lab Batch #: 764777

Sample: 533256-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/08/09 01:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	99.8	100	100	70-135	
o-Terphenyl	49.0	50.0	98	70-135	

Lab Batch #: 764777

Sample: 337175-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 01:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.8	50.0	100	70-135	

Lab Batch #: 764777

Sample: 337175-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 02:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	109	100	109	70-135	
o-Terphenyl	47.0	50.0	94	70-135	

Lab Batch #: 764777

Sample: 337175-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 02:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	109	100	109	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

* 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 764777

Project ID: 2009-092

Sample: 337175-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 02:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.0	99.7	94	70-135	
o-Terphenyl	44.5	49.9	89	70-135	

Lab Batch #: 764777

Sample: 337175-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 03:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	47.6	50.0	95	70-135	

Lab Batch #: 764777

Sample: 337175-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 03:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	100	98	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

Lab Batch #: 764777

Sample: 337175-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 04:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.7	103	70-135	
o-Terphenyl	49.4	49.9	99	70-135	

Lab Batch #: 764777

Sample: 337175-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 04:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.5	100	99	70-135	
o-Terphenyl	47.7	50.0	95	70-135	

* 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 764777

Sample: 337175-015 / SMP

Project ID: 2009-092
Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 04:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.8	113	70-135	
o-Terphenyl	46.4	49.9	93	70-135	

Lab Batch #: 764777

Sample: 337175-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 05:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	47.7	49.9	96	70-135	

Lab Batch #: 764777

Sample: 337175-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 06:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	50.7	50.0	101	70-135	

Lab Batch #: 764777

Sample: 337175-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 06:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	48.8	50.0	98	70-135	

Lab Batch #: 764777

Sample: 337175-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 06:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.8	99.5	100	70-135	
o-Terphenyl	48.0	49.8	96	70-135	

* 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,
Lab Batch #: 764777

Project ID: 2009-092

Sample: 337175-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 07:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	98.3	100	98	70-135	
o-Terphenyl	46.6	50.0	93	70-135	

Lab Batch #: 764777

Sample: 337175-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 07:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	101	100	101	70-135	
o-Terphenyl	48.9	50.0	98	70-135	

Lab Batch #: 764777

Sample: 337175-007 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 10:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	114	100	114	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

Lab Batch #: 764777

Sample: 337175-007 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 10:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	115	100	115	70-135	
o-Terphenyl	47.7	50.0	95	70-135	

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



Blank Spike Recovery



Project Name: 14-Inch Vac to Jal- Legacy

Work Order #: 337175

Project ID:

2009-092

Lab Batch #: 765200

Sample: 533475-1-BKS

Matrix: Solid

Date Analyzed: 07/12/2009

Date Prepared: 07/11/2009

Analyst: BRB

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.1000	0.0928	93	70-130	
Toluene	ND	0.1000	0.0886	89	70-130	
Ethylbenzene	ND	0.1000	0.0979	98	71-129	
m,p-Xylenes	ND	0.2000	0.1979	99	70-135	
o-Xylene	ND	0.1000	0.0942	94	71-133	

Lab Batch #: 767305

Sample: 767305-1-BKS

Matrix: Solid

Date Analyzed: 07/31/2009

Date Prepared: 07/31/2009

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	9.70	97	80-120	

Lab Batch #: 767307

Sample: 767307-1-BKS

Matrix: Solid

Date Analyzed: 07/31/2009

Date Prepared: 07/31/2009

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	9.14	91	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]

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

- Below Reporting Limit



BS / BSD Recoveries



Project Name: 14-Inch Vac to Jal- Legacy

Work Order #: 337175

Project ID: 2009-092

Analyst: BRB

Date Prepared: 07/09/2009

Date Analyzed: 07/09/2009

Lab Batch ID: 765019

Sample: 533394-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0776	78	0.1	0.0799	80	3	70-130	35	
Toluene	ND	0.1000	0.0738	74	0.1	0.0759	76	3	70-130	35	
Ethylbenzene	ND	0.1000	0.0813	81	0.1	0.0840	84	3	71-129	35	
m,p-Xylenes	ND	0.2000	0.1665	83	0.2	0.1716	86	3	70-135	35	
o-Xylene	ND	0.1000	0.0793	79	0.1	0.0809	81	2	71-133	35	

Analyst: BRB

Date Prepared: 07/09/2009

Date Analyzed: 07/10/2009

Lab Batch ID: 765081

Sample: 533433-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

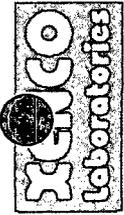
BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0787	79	0.1	0.0802	80	2	70-130	35	
Toluene	ND	0.1000	0.0751	75	0.1	0.0766	77	2	70-130	35	
Ethylbenzene	ND	0.1000	0.0845	85	0.1	0.0859	86	2	71-129	35	
m,p-Xylenes	ND	0.2000	0.1724	86	0.2	0.1751	88	2	70-135	35	
o-Xylene	ND	0.1000	0.0813	81	0.1	0.0827	83	2	71-133	35	

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: 14-Inch Vac to Jal-Legacy

Work Order #: 337175

Project ID: 2009-092

Analyst: BRB

Date Prepared: 07/11/2009

Date Analyzed: 07/13/2009

Lab Batch ID: 765231

Sample: 533520-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0896	90	0.1	0.0916	92	2	70-130	35	
Toluene	ND	0.1000	0.0848	85	0.1	0.0868	87	2	70-130	35	
Ethylbenzene	ND	0.1000	0.0941	94	0.1	0.0959	96	2	71-129	35	
m,p-Xylenes	ND	0.2000	0.1876	94	0.2	0.1918	96	2	70-135	35	
o-Xylene	ND	0.1000	0.0896	90	0.1	0.0912	91	2	71-133	35	

Analyst: ASA

Date Prepared: 07/11/2009

Date Analyzed: 07/13/2009

Lab Batch ID: 765323

Sample: 533559-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0947	95	0.1	0.0932	93	2	70-130	35	
Toluene	ND	0.1000	0.0912	91	0.1	0.0897	90	2	70-130	35	
Ethylbenzene	ND	0.1000	0.1030	103	0.1	0.1019	102	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2103	105	0.2	0.2056	103	2	70-135	35	
o-Xylene	ND	0.1000	0.0982	98	0.1	0.0967	97	2	71-133	35	

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: 14-Inch Vac to Jal- Legacy

Work Order #: 337175

Analyst: BHW

Lab Batch ID: 764775

Sample: 533254-1-BKS

Date Prepared: 07/07/2009

Batch #: 1

Project ID: 2009-092

Date Analyzed: 07/07/2009

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	865	87	1000	842	84	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1020	102	1000	970	97	5	70-135	35	

Analyst: BHW

Lab Batch ID: 764777

Sample: 533256-1-BKS

Date Prepared: 07/07/2009

Batch #: 1

Date Analyzed: 07/08/2009

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	870	87	1000	916	92	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1030	103	1000	1070	107	4	70-135	35	

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: 14-Inch Vac to Jal- Legacy

Work Order #: 337175
Lab Batch #: 767305
Date Analyzed: 07/31/2009
QC- Sample ID: 339247-001 S
Reporting Units: mg/kg

Date Prepared: 07/31/2009
Batch #: 1
Matrix: Soil
Project ID: 2009-092
Analyst: LATCOR

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	157	212	386	108	80-120	

Lab Batch #: 767307
Date Analyzed: 07/31/2009
QC- Sample ID: 337175-017 S
Reporting Units: mg/kg

Date Prepared: 07/31/2009
Batch #: 1
Matrix: Soil
Analyst: LATCOR

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	54.4	111	158	93	80-120	

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

- Below Reporting Limit



Form 3 - MSD Recoveries



Project Name: 14-Inch Vac to Jal- Legacy

Work Order #: 337175

Project ID: 2009-092

Lab Batch ID: 765019

Batch #: 1 Matrix: Soil

Date Analyzed: 07/10/2009

Date Prepared: 07/09/2009 Analyst: BRB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY									
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1006	0.0715	71	0.1006	0.0767	76	7	70-130	35	
Toluene	ND	0.1006	0.0692	69	0.1006	0.0731	73	5	70-130	35	X
Ethylbenzene	ND	0.1006	0.0781	78	0.1006	0.0807	80	3	71-129	35	
m,p-Xylenes	ND	0.2012	0.1601	80	0.2012	0.1638	81	2	70-135	35	
o-Xylene	ND	0.1006	0.0751	75	0.1006	0.0770	77	2	71-133	35	

Lab Batch ID: 765200

Batch #: 1 Matrix: Soil

Date Analyzed: 07/12/2009

Date Prepared: 07/11/2009 Analyst: BRB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY									
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1123	0.0720	64	0.1123	0.0742	66	3	70-130	35	X
Toluene	ND	0.1123	0.0765	68	0.1123	0.0779	69	2	70-130	35	X
Ethylbenzene	ND	0.1123	0.0867	77	0.1123	0.0866	77	0	71-129	35	
m,p-Xylenes	ND	0.2247	0.1789	80	0.2247	0.1776	79	1	70-135	35	
o-Xylene	ND	0.1123	0.0850	76	0.1123	0.0840	75	1	71-133	35	

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

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

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



Form 3 - MSD Recoveries



Project Name: 14-Inch Vac to Jal- Legacy

Work Order #: 337175

Project ID: 2009-092

Lab Batch ID: 765231

Batch #: 1 Matrix: Soil

Date Analyzed: 07/13/2009

QC- Sample ID: 337719-001 S Date Prepared: 07/11/2009 Analyst: BRB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										Flag	
	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		
BTEX by EPA 8021B												
Benzene	ND	0.1025	0.0713	70	0.1025	0.0682	67	4	70-130	35	X	
Toluene	ND	0.1025	0.0592	58	0.1025	0.0499	49	17	70-130	35	X	
Ethylbenzene	ND	0.1025	0.0615	60	0.1025	0.0417	41	38	71-129	35	XF	
m,p-Xylenes	ND	0.2050	0.1225	60	0.2050	0.0824	40	39	70-135	35	XF	
o-Xylene	ND	0.1025	0.0583	57	0.1025	0.0372	36	44	71-133	35	XF	

Lab Batch ID: 765323

Batch #: 1 Matrix: Soil

Date Analyzed: 07/14/2009

QC- Sample ID: 337175-012 S Date Prepared: 07/11/2009 Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										Flag	
	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		
BTEX by EPA 8021B												
Benzene	ND	0.1058	0.0838	79	0.1058	0.0820	78	2	70-130	35		
Toluene	ND	0.1058	0.0765	72	0.1058	0.0731	69	5	70-130	35	X	
Ethylbenzene	ND	0.1058	0.0796	75	0.1058	0.0731	69	9	71-129	35	X	
m,p-Xylenes	ND	0.2116	0.1580	75	0.2116	0.1470	69	7	70-135	35	X	
o-Xylene	ND	0.1058	0.0780	74	0.1058	0.0709	67	10	71-133	35	X	

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

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

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



Form 3 - MSD Recoveries



Project Name: 14-Inch Vac to Jal- Legacy

Work Order #: 337175

Project ID: 2009-092

Lab Batch ID: 764775

QC- Sample ID: 337224-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/07/2009

Date Prepared: 07/07/2009 Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
		C6-C12 Gasoline Range Hydrocarbons	729	1130	1840	98	1130	1870	101	2	70-135	35
C12-C28 Diesel Range Hydrocarbons	3940	1130	5230	114	1130	5440	133	4	70-135	35		

Lab Batch ID: 764777

QC- Sample ID: 337175-007 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/08/2009

Date Prepared: 07/07/2009 Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
		C6-C12 Gasoline Range Hydrocarbons	25.8	1050	916	85	1050	915	85	0	70-135	35
C12-C28 Diesel Range Hydrocarbons	392	1050	1430	99	1050	1390	95	3	70-135	35		

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

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

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



Sample Duplicate Recovery



Project Name: 14-Inch Vac to Jal- Legacy

Work Order #: 337175

Lab Batch #: 767305

Project ID: 2009-092

Date Analyzed: 07/31/2009

Date Prepared: 07/31/2009

Analyst: LATCOR

QC- Sample ID: 339247-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	157	166	6	20	

Lab Batch #: 767307

Analyst: LATCOR

Date Analyzed: 07/31/2009

Date Prepared: 07/31/2009

QC- Sample ID: 337175-017 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	54.4	50.6	3	20	

Lab Batch #: 764625

Analyst: LATCOR

Date Analyzed: 07/06/2009

Date Prepared: 07/06/2009

QC- Sample ID: 337166-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	3.72	4.09	9	20	

Lab Batch #: 764626

Analyst: LATCOR

Date Analyzed: 07/06/2009

Date Prepared: 07/06/2009

QC- Sample ID: 337175-008 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	10.5	11.0	5	20	

Spike Relative Difference $RPD = 200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas

Page 1 of 3

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST
 13600 West 130 East
 Odessa, Texas 79765
 Phone: 432-563-1800
 Fax: 432-563-1773

Project Manager: Carmille Bryant
 Company Name: Basin Environmental Service Technologies, LLC
 Company Address: P. O. Box 301
 City/State/Zip: Lovington, NM 88260
 Telephone No: (979) 665-7210
 Sampler Signature: Carmille Bryant
 Project Name: 14-Inch Vaz to Jal - Legacy
 Project #: 2005-092
 Project Loc: Lea County, NM
 PO #: PAJ - J. Henry
 Report Format: Standard TRRP NPDES

Fax No: (905) 396-1429
 e-mail: cjbryant@basin-consulting.com

Lab Use Only	Field Code	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Form # of Containers	Preservation & # of Containers	Matrix	Analyz For:
	MW-1 @ 5'			7/1/09	0930	1	SOIL	SOIL	As for EPA 821-1-A, 821-2, 821-3, 821-4, 821-5, 821-6, 821-7, 821-8, 821-9, 821-10, 821-11, 821-12, 821-13, 821-14, 821-15, 821-16, 821-17, 821-18, 821-19, 821-20, 821-21, 821-22, 821-23, 821-24, 821-25, 821-26, 821-27, 821-28, 821-29, 821-30, 821-31, 821-32, 821-33, 821-34, 821-35, 821-36, 821-37, 821-38, 821-39, 821-40, 821-41, 821-42, 821-43, 821-44, 821-45, 821-46, 821-47, 821-48, 821-49, 821-50, 821-51, 821-52, 821-53, 821-54, 821-55, 821-56, 821-57, 821-58, 821-59, 821-60, 821-61, 821-62, 821-63, 821-64, 821-65, 821-66, 821-67, 821-68, 821-69, 821-70, 821-71, 821-72, 821-73, 821-74, 821-75, 821-76, 821-77, 821-78, 821-79, 821-80, 821-81, 821-82, 821-83, 821-84, 821-85, 821-86, 821-87, 821-88, 821-89, 821-90, 821-91, 821-92, 821-93, 821-94, 821-95, 821-96, 821-97, 821-98, 821-99, 821-100, 821-101, 821-102, 821-103, 821-104, 821-105, 821-106, 821-107, 821-108, 821-109, 821-110, 821-111, 821-112, 821-113, 821-114, 821-115, 821-116, 821-117, 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821-673, 821-674, 821-675, 821-676, 821-677, 821-678, 821-679, 821-680, 821-681, 821-682, 821-683, 821-684, 821-685, 821-686, 821-687, 821-688, 821-689, 821-690, 821-691, 821-692, 821-693, 821-694, 821-695, 821-696, 821-697, 821-698, 821-699, 821-700, 821-701, 821-702, 821-703, 821-704, 821-705, 821-706, 821-707, 821-708, 821-709, 821-710, 821-711, 821-712, 821-713, 821-714, 821-715, 821-716, 821-717, 821-718, 821-719, 821-720, 821-721, 821-722, 821-723, 821-724, 821-725, 821-726, 821-727, 821-728, 821-729, 821-730, 821-731, 821-732, 821-733, 821-734, 821-735, 821-736, 821-737, 821-738, 821-739, 821-740, 821-741, 821-742, 821-743, 821-744, 821-745, 821-746, 821-747, 821-748, 821-749, 821-750, 821-751, 821-752, 821-753, 821-754, 821-755, 821-756, 821-757, 821-758, 821-759, 821-760, 821-761, 821-762, 821-763, 821-764, 821-765, 821-766, 821-767, 821-768, 821-769, 821-770, 821-771, 821-772, 821-773, 821-774, 821-775, 821-776, 821-777, 821-778, 821-779, 821-780, 821-781, 821-782, 821-783, 821-784, 821-785, 821-786, 821-787, 821-788, 821-789, 821-790, 821-791, 821-792, 821-793, 821-794, 821-795, 821-796, 821-797, 821-798, 821-799, 821-800, 821-801, 821-802, 821-803, 821-804, 821-805, 821-806, 821-807, 821-808, 821-809, 821-810, 821-811, 821-812, 821-813, 821-814, 821-815, 821-816, 821-817, 821-818, 821-819, 821-820, 821-821, 821-822, 821-823, 821-824, 821-825, 821-826, 821-827, 821-828, 821-829, 821-830, 821-831, 821-832, 821-833, 821-834, 821-835, 821-836, 821-837, 821-838, 821-839, 821-840, 821-841, 821-842, 821-843, 821-844, 821-845, 821-846, 821-847, 821-848, 821-849, 821-850, 821-851, 821-852, 821-853, 821-854, 821-855, 821-856, 821-857, 821-858, 821-859, 821-860, 821-861, 821-862, 821-863, 821-864, 821-865, 821-866, 821-867, 821-868, 821-869, 821-870, 821-871, 821-872, 821-873, 821-874, 821-875, 821-876, 821-877, 821-878, 821-879, 821-880, 821-881, 821-882, 821-883, 821-884, 821-885, 821-886, 821-887, 821-888, 821-889, 821-890, 821-891, 821-892, 821-893, 821-894, 821-895, 821-896, 821-897, 821-898, 821-899, 821-900, 821-901, 821-902, 821-903, 821-904, 821-905, 821-906, 821-907, 821-908, 821-909, 821-910, 821-911, 821-912, 821-913, 821-914, 821-915, 821-916, 821-917, 821-918, 821-919, 821-920, 821-921, 821-922, 821-923, 821-924, 821-925, 821-926, 821-927, 821-928, 821-929, 821-930, 821-931, 821-932, 821-933, 821-934, 821-935, 821-936, 821-937, 821-938, 821-939, 821-940, 821-941, 821-942, 821-943, 821-944, 821-945, 821-946, 821-947, 821-948, 821-949, 821-950, 821-951, 821-952, 821-953, 821-954, 821-955, 821-956, 821-957, 821-958, 821-959, 821-960, 821-961, 821-962, 821-963, 821-964, 821-965, 821-966, 821-967, 821-968, 821-969, 821-970, 821-971, 821-972, 821-973, 821-974, 821-975, 821-976, 821-977, 821-978, 821-979, 821-980, 821-981, 821-982, 821-983, 821-984, 821-985, 821-986, 821-987, 821-988, 821-989, 821-990, 821-991, 821-992, 821-993, 821-994, 821-995, 821-996, 821-997, 821-998, 821-999, 821-1000, 821-1001, 821-1002, 821-1003, 821-1004, 821-1005, 821-1006, 821-1007, 821-1008, 821-1009, 821-1010, 821-1011, 821-1012, 821-1013, 821-1014, 821-1015, 821-1016, 821-1017, 821-1018, 821-1019, 821-1020, 821-1021, 821-1022, 821-1023, 821-1024, 821-1025, 821-1026, 821-1027, 821-1028, 821-1029, 821-1030, 821-1031, 821-1032, 821-1033, 821-1034, 821-1035, 821-1036, 821-1037, 821-1038, 821-1039, 821-1040, 821-1041, 821-1042, 821-1043, 821-1044, 821-1045, 821-1046, 821-1047, 821-1048, 821-1049, 821-1050, 821-1051, 821-1052, 821-1053, 821-1054, 821-1055, 821-1056, 821-1057, 821-1058, 821-1059, 821-1060, 821-1061, 821-1062, 821-1063, 821-1064, 821-1065, 821-1066, 821-1067, 821-1068, 821-1069, 821-1070, 821-1071, 821-1072, 821-1073, 821-1074, 821-1075, 821-1076, 821-1077, 821-1078, 821-1079, 821-1080, 821-1081, 821-1082, 821-1083, 821-1084, 821-1085, 821-1086, 821-1087, 821-1088, 821-1089, 821-1090, 821-1091, 821-1092, 821-1093, 821-1094, 821-1095, 821-1096, 821-1097, 821-1098, 821-1099, 821-1100, 821-1101, 821-1102, 821-1103, 821-1104, 821-1105, 821-1106, 821-1107, 821-1108, 821-1109, 821-1110, 821-1111, 821-1112, 821-1113, 821-1114, 821-1115, 821-1116, 821-1117, 821-1118, 821-1119, 821-1120, 821-1121, 821-1122, 821-1123, 821-1124, 821-1125, 821-1126, 821-1127, 821-1128, 821-1129, 821-1130, 821-1131, 821-1132, 821-1133, 821-1134, 821-1135, 821-1136, 821-1137, 821-1138, 821-1139, 821-1140, 821-1141, 821-1142, 821-1143, 821-1144, 821-1145, 821-1146, 821-1147, 821-1148, 821-1149, 821-1150, 821-1151, 821-1152, 821-1153, 821-1154, 821-1155, 821-1156, 821-1157, 821-1158, 821-1159, 821-1160, 821-1161, 821-1162, 821-1163, 821-1164, 821-1165, 821-1166, 821-1167, 821-1168, 821-1169, 821-1170, 821-1171, 821-1172, 821-1173, 821-1174, 821-1175, 821-1176, 821-1177, 821-1178, 821-1179, 821-1180, 821-1181, 821-1182, 821-1183, 821-1184, 821-1185, 821-1186, 821-1187, 821-1188, 821-1189, 821-1190, 821-1191, 821-1192, 821-1193, 821-1194, 821-1195, 821-1196, 821-1197, 821-1198, 821-1199, 821-1200, 821-1201, 821-1202, 821-1203, 821-1204, 821-1205, 821-1206, 821-1207, 821-1208, 821-1209, 821-1210, 821-1211, 821-1212, 821-1213, 821-1214, 821-1215, 821-1216, 821-1217, 821-1218, 821-1219, 821-1220, 821-1221, 821-1222, 821-1223, 821-1224, 821-1225, 821-1226, 821-1227, 821-1228, 821-1229, 821-1230, 821-1231, 821-1232, 821-1233, 821-1234, 821-1235, 821-1236, 821-1237, 821-1238, 821-1239, 821-1240, 821-1241, 821-1242, 821-1243, 821-1244, 821-1245, 821-1246, 821-1247, 821-1248, 821-1249, 821-1250, 821-1251, 821-1252, 821-1253, 821-1254, 821-1255, 821-1256, 821-1257, 821-1258, 821-1259, 821-1260, 821-1261, 821-1262, 821-1263, 821-1264, 821-1265, 821-1266, 821-1267, 821-1268, 821-1269, 821-1270, 821-1271, 821-12

Environmental Lab of Texas

Page 3 of 3

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST
 12600 West I-20 East
 Odessa, Texas 79765
 Phone: 432-563-1800
 Fax: 432-563-1713

Project Name: 14-Inch Vac to Jal - Legacy
 Project #: 2009-092
 Project Loc: Los County, NM
 PO #: PAA - J. Henry
 Report Format: Standard TRRP APODES
 Project Manager: Camille Bryant
 Company Name: Basin Environmental Service Technologies, LLC
 Company Address: P. O. Box 301
 City/State/Zip: Lovington, NM 89260
 Telephone No: (505) 695-7210
 Fax No: (505) 396-1429
 Sampler Signature: *Camille Bryant*
 e-mail: cbryant@basin-consulting.com

ORDER #	LAB USE ONLY	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Returned	Rate % of Containers	Preservation % of Containers	Matrix	Analyze For	Standard TAT 4 DAY
33719		SB-3 @ 5'			7/2/09	1225	1	X		SOIL	<input checked="" type="checkbox"/> TOPE <input checked="" type="checkbox"/> TOTAL <input checked="" type="checkbox"/> BTEX (EPA 101.10 or BTEX 820) <input checked="" type="checkbox"/> Volatiles <input checked="" type="checkbox"/> Metals: As, Ag, Ba, Cd, Cr, Pb, Ni, Se <input checked="" type="checkbox"/> BAR (BTEX, CFC) <input checked="" type="checkbox"/> Metals (Cr, SO4, Arsenic) <input checked="" type="checkbox"/> Organics (Ca, Mg, Na, Ni) <input checked="" type="checkbox"/> TPH: TX 1005 <input checked="" type="checkbox"/> TPH: A18 : 8015M : 8015S <input checked="" type="checkbox"/> NP - Non-Petroleum Swellable Crn <input checked="" type="checkbox"/> PW - Drinking Water - 81 - 8105 <input checked="" type="checkbox"/> Other (Specify)	X

Special Instructions:

Requested by: *Camille Bryant* Date: 7/1/09 Time: 1235
 Received by: *Anna Jean* Date: 7-1-09 Time: 12:35
 Retransmitted by: *Anna Jean* Date: 7-1-09 Time: 12:35
 Retransmitted by: *Anna Jean* Date: 7-1-09 Time: 12:35

Laboratory Comments:
 Sample Contaminated? N
 VOCs Packed/Preserved? N
 Chain of Custody (by name)? N
 Chain of Custody (by number)? N
 Chain of Custody (by initials)? N
 Chain of Custody (by date)? N
 Sample Hand Delivered? N
 by Carrier? UFS D-HL Lone Star
 Temperature Upon Receipt: 4.1 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin Env. / Plains
 Date/ Time: 7.6.09 12:35
 Lab ID #: 337175
 Initials: CL

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	(Yes)	No	4.1 °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

Gracie Avalos

From: Camille J. Bryant [cjbrant@basin-consulting.com]
Sent: Friday, July 31, 2009 2:15 PM
To: Gracie Avalos
Subject: Re: WO 337175 / 14-Inch Vac to Jal - Legacy

Gracie,

Please conduct chloride concentration sampling on all the submitted soil samples by method 300.

Thanks,
Camille Bryant
Basin Environmental Consulting

----- Original Message -----

From: Gracie Avalos
To: 'Camille J. Bryant'; cstanley@basinenv.com
Cc: Jason Henry
Sent: Tuesday, July 14, 2009 12:18 PM
Subject: WO 337175 / 14-Inch Vac to Jal - Legacy

Gracie Avalos
Project Assistant
Xenco Labs - Odessa
432-563-1800 Office
432-4563-1713 Fax
gracie.avalos@xenco.com

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7/31/2009

Analytical Report 337279

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14-Inch Vac to Jal - Legacy

2009-092

04-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)

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04-AUG-09

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

Reference: XENCO Report No: **337279**
14-Inch Vac to Jal - Legacy
Project Address: Lea County, NM

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 337279. 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. 337279 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

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Sample Cross Reference 337279



PLAINS ALL AMERICAN EH&S, Midland, TX

14-Inch Vac to Jal - Legacy

Sample Id

SB-3 @ 60'

Matrix

S

Date Collected

Jul-02-09 12:35

Sample Depth

Lab Sample Id

337279-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal - Legacy

Project ID: 2009-092

Work Order Number: 337279

Report Date: 04-AUG-09

Date Received: 07/07/2009

Sample receipt non conformances and Comments:

Per client's request, Chloride by E300 is to be analyzed although sample 337279-001 (soil) expired 07/30/09. Lab will proceed with 07/31/09 request.

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-764742 Percent Moisture

None

Batch: LBA-764867 TPH by SW8015 Mod

None

Batch: LBA-765081 BTEX-MTBE EPA 8021B
SW8021BM

Batch 765081, 4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 533433-1-BKS,337279-001. Matrix interference is suspected.

Batch: LBA-767458 Inorganic Anions by EPA 300
E300



Certificate of Analysis Summary 337279

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: 14-Inch Vac to Jal - Legacy

Date Received in Lab: Tue Jul-07-09 10:15 am

Report Date: 04-AUG-09

Project Manager: Brent Barron, II

Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Analysis Requested	Lab Id: 337279-001 Field Id: SB-3 @ 60' Depth: SOIL Matrix: SOIL Sampled: Jul-02-09 12:35		
Anions by EPA 300	Extracted: Aug-03-09 19:34 Analyzed: mg/kg RL Units/RL: 46.1 5.13		
BTEX by EPA 8021B	Extracted: Jul-09-09 17:00 Analyzed: Jul-10-09 12:56 Units/RL: mg/kg RL		
Benzene	ND 0.0010		
Toluene	ND 0.0021		
Ethylbenzene	0.0038 0.0010		
m,p-Xylenes	0.0087 0.0021		
o-Xylene	0.0041 0.0010		
Total Xylenes	0.0128 0.0010		
Total BTEX	0.0166 0.0010		
Percent Moisture	Extracted: Jul-07-09 16:00 Analyzed: % RL Units/RL: 2.46 1.00		
TPH By SW8015 Mod	Extracted: Jul-08-09 13:39 Analyzed: Jul-08-09 16:22 Units/RL: mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons	23.7 15.4		
C12-C28 Diesel Range Hydrocarbons	126 15.4		
C28-C35 Oil Range Hydrocarbons	18.5 15.4		
Total TPH	168.2 15.4		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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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.



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4143 Greenbriar Dr, Stafford, Tx 77477
 9701 Harry Hines Blvd , Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116





Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 337279,
Lab Batch #: 765081

Project ID: 2009-092

Sample: 533433-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/10/09 09:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0366	0.0300	122	80-120	*

Lab Batch #: 765081

Sample: 533433-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/10/09 09:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0361	0.0300	120	80-120	

Lab Batch #: 765081

Sample: 533433-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/10/09 10:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 765081

Sample: 337279-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/10/09 12:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0385	0.0300	128	80-120	*

Lab Batch #: 764867

Sample: 533304-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/08/09 15:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	53.0	50.0	106	70-135	

* 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: 14-Inch Vac to Jal - Legacy

Work Orders : 337279,
Lab Batch #: 764867

Project ID: 2009-092

Sample: 533304-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/08/09 15:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	51.6	50.0	103	70-135	

Lab Batch #: 764867

Sample: 533304-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/08/09 15:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	55.5	50.0	111	70-135	

Lab Batch #: 764867

Sample: 337279-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 16:22

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	55.1	50.0	110	70-135	

Lab Batch #: 764867

Sample: 337279-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 19:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	54.7	50.0	109	70-135	

Lab Batch #: 764867

Sample: 337279-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 19:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.9	129	70-135	
o-Terphenyl	54.2	50.0	108	70-135	

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



Blank Spike Recovery



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 337279

Project ID:

2009-092

Lab Batch #: 767458

Sample: 767458-1-BKS

Matrix: Solid

Date Analyzed: 08/03/2009

Date Prepared: 08/03/2009

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	9.93	99	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]

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

L - Below Reporting Limit



BS / BSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 337279

Project ID: 2009-092

Analyst: BRB

Date Prepared: 07/09/2009

Date Analyzed: 07/10/2009

Lab Batch ID: 765081

Sample: 533433-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0787	79	0.1	0.0802	80	2	70-130	35	
Toluene	ND	0.1000	0.0751	75	0.1	0.0766	77	2	70-130	35	
Ethylbenzene	ND	0.1000	0.0845	85	0.1	0.0859	86	2	71-129	35	
m,p-Xylenes	ND	0.2000	0.1724	86	0.2	0.1751	88	2	70-135	35	
o-Xylene	ND	0.1000	0.0813	81	0.1	0.0827	83	2	71-133	35	

Analyst: BHW

Date Prepared: 07/08/2009

Date Analyzed: 07/08/2009

Lab Batch ID: 764867

Sample: 533304-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH By SW8015 Mod											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	816	82	1000	818	82	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	848	85	1000	843	84	1	70-135	35	

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: 14-Inch Vac to Jal - Legacy

Work Order #: 337279
Lab Batch #: 767458
Date Analyzed: 08/03/2009
QC- Sample ID: 337279-001 S
Reporting Units: mg/kg

Date Prepared: 08/03/2009
Batch #: 1

Project ID: 2009-092
Analyst: LATCOR
Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	46.1	103	150	101	80-120	

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

 - Below Reporting Limit



Form 3 - MSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 337279

Project ID: 2009-092

Lab Batch ID: 764867

QC-Sample ID: 337279-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/08/2009

Date Prepared: 07/08/2009 Analyst: BHW

Reporting Units: mg/kg

TPH By SW8015 Mod	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
C6-C12 Gasoline Range Hydrocarbons	23.7	1030	872	82	1020	891	85	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	126	1030	1040	89	1020	1060	92	2	70-135	35	

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

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

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



Sample Duplicate Recovery



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 337279

Lab Batch #: 767458

Project ID: 2009-092

Date Analyzed: 08/03/2009

Date Prepared: 08/03/2009

Analyst: LATCOR

QC- Sample ID: 337279-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	46.1	45.4	2	20	

Lab Batch #: 764742

Date Analyzed: 07/07/2009

Date Prepared: 07/07/2009

Analyst: BEV

QC- Sample ID: 337200-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	4.27	3.58	18	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Basin / DMURS
 Date/ Time: 12/07/09 10:45
 Lab ID #: 337279
 Initials: MLB

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	1.4 ° C	
#2	Shipping container in good condition?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#3	Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Present	
#5	Chain of Custody present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#11	Containers supplied by ELDT?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#12	Samples in proper container/ bottle?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#13	Samples properly preserved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#14	Sample bottles intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#15	Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#16	Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#18	All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#19	Subcontract of sample(s)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Not Applicable	
#20	VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> 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

Gracie Avalos

From: Camille J. Bryant [cjbryant@basin-consulting.com]
Sent: Friday, July 31, 2009 2:16 PM
To: Gracie Avalos
Subject: Re: WO 337279 / 14-Inch Vac to Jal - Legacy

Gracie,

Please conduct chloride concentration sampling on the submitted soil sample using method 300.

Thanks,
Camille Bryant
Basin Environmental Consulting

----- Original Message -----

From: Gracie Avalos
To: 'Camille J. Bryant'; cstanley@basinenv.com; Jason Henry
Sent: Monday, July 13, 2009 9:12 AM
Subject: WO 337279 / 14-Inch Vac to Jal - Legacy

Gracie Avalos
Project Assistant
Xenco Labs - Odessa
432-563-1800 Office
432-4563-1713 Fax
gracie.avalos@xenco.com

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7/31/2009

Analytical Report 346217

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14-Inch Vac to Jal-Legacy

2009-092

30-SEP-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)



30-SEP-09

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

Reference: XENCO Report No: **346217**
14-Inch Vac to Jal-Legacy
Project Address: Lea County, NM

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 346217. 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. 346217 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

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Sample Cross Reference 346217



PLAINS ALL AMERICAN EH&S, Midland, TX

14-Inch Vac to Jal-Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Treatment Cell # 1	S	Sep-24-09 16:00		346217-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal-Legacy

Project ID: 2009-092

Work Order Number: 346217

Report Date: 30-SEP-09

Date Received: 09/28/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-774613 Percent Moisture

None

Batch: LBA-774863 TX1005

None

Batch: LBA-774935 BTEX-MTBE EPA 8021B

SW8021BM

Batch 774935, 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 346217-001.



Certificate of Analysis Summary 346217

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal-Legacy



Project Id: 2009-092
 Contact: Jason Henry
 Project Location: Lea County, NM

Date Received in Lab: Mon Sep-28-09 09:35 am
 Report Date: 30-SEP-09
 Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	346217-001
	Field Id: (Treatment Cell #)	
	Depth:	SOIL
	Matrix:	
	Sampled:	Sep-24-09 16:00
BTEX by EPA 8021B	Extracted:	Sep-30-09 10:00
	Analyzed:	Sep-30-09 15:50
	Units/RL:	mg/kg RL
		1.539 0.2060
		31.40 0.4120
		30.15 0.2060
		51.23 0.4120
		21.99 0.2060
		73.22 0.2060
		136.31 0.2060
Percent Moisture	Extracted:	
	Analyzed:	Sep-29-09 09:07
	Units/RL:	% RL
		2.92 1.00
TPH By SW8015 Mod	Extracted:	Sep-29-09 22:44
	Analyzed:	Sep-30-09 05:23
	Units/RL:	mg/kg RL
		2560 155
		8530 155
		220 155
		11310 155

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

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.

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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal-Legacy

Work Orders : 346217,
Lab Batch #: 774935

Project ID: 2009-092

Sample: 539231-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 09/30/09 13:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 774935 Sample: 539231-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 09/30/09 13:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 774935 Sample: 346217-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 09/30/09 15:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0194	0.0300	65	80-120	**
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 774863 Sample: 539177-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 09/29/09 23:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	85.0	100	85	70-135	
o-Terphenyl	36.1	50.0	72	70-135	

Lab Batch #: 774863 Sample: 539177-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 09/30/09 00:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	87.7	100	88	70-135	
o-Terphenyl	36.7	50.0	73	70-135	

* 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: 14-Inch Vac to Jal-Legacy

Work Orders : 346217,
Lab Batch #: 774863

Project ID: 2009-092

Sample: 539177-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/09 00:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.5	100	81	70-135	
o-Terphenyl	39.7	50.0	79	70-135	

Lab Batch #: 774863

Sample: 346217-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 05:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	41.4	50.0	83	70-135	

Lab Batch #: 774863

Sample: 345957-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 05:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.2	100	96	70-135	
o-Terphenyl	46.8	50.0	94	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Blank Spike Recovery



Project Name: 14-Inch Vac to Jal-Legacy

Work Order #: 346217

Project ID:

2009-092

Lab Batch #: 774935

Sample: 539231-1-BKS

Matrix: Solid

Date Analyzed: 09/30/2009

Date Prepared: 09/30/2009

Analyst: ASA

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.1000	0.0926	93	70-130	
Toluene	ND	0.1000	0.0917	92	70-130	
Ethylbenzene	ND	0.1000	0.0941	94	71-129	
m,p-Xylenes	ND	0.2000	0.2057	103	70-135	
o-Xylene	ND	0.1000	0.0990	99	71-133	

Blank Spike Recovery [D] = $100 * [C] / [B]$

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

L - Below Reporting Limit



BS / BSD Recoveries



Project Name: 14-Inch Vac to Jal-Legacy

Work Order #: 346217

Analyst: BHW

Lab Batch ID: 774863

Sample: 539177-1-BKS

Date Prepared: 09/29/2009

Batch #: 1

Project ID: 2009-092

Date Analyzed: 09/29/2009

Matrix: Solid

Units: mg/kg

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	848	85	1000	877	88	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	813	81	1000	846	85	4	70-135	35	

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



Sample Duplicate Recovery



Project Name: 14-Inch Vac to Jal-Legacy

Work Order #: 346217

Lab Batch #: 774613

Project ID: 2009-092

Date Analyzed: 09/29/2009

Date Prepared: 09/29/2009

Analyst: BEV

QC- Sample ID: 346186-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	12.2	13.0	7	20	

Lab Batch #: 774863

Date Analyzed: 09/30/2009

Date Prepared: 09/29/2009

Analyst: BHW

QC- Sample ID: 345957-002 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	36.0	39.3	9	35	
C28-C35 Oil Range Hydrocarbons	ND	ND	NC	35	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Basin Env. / Plains
 Date/ Time: 9.23.09 9:35
 Lab ID #: 346217
 Initials: CL

Sample Receipt Checklist

			Client Initials
#1 Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	No	3.6 °C
#2 Shipping container in good condition?	<input checked="" type="checkbox"/> Yes	No	
#3 Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present
#4 Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/> Yes	No	Not Present
#5 Chain of Custody present?	<input checked="" type="checkbox"/> Yes	No	
#6 Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#7 Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/> Yes	No	
#8 Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/> Yes	No	ID written on Cont / Lid
#9 Container label(s) legible and intact?	<input checked="" type="checkbox"/> Yes	No	Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#11 Containers supplied by ELOT?	<input checked="" type="checkbox"/> Yes	No	
#12 Samples in proper container/ bottle?	<input checked="" type="checkbox"/> Yes	No	See Below
#13 Samples properly preserved?	<input checked="" type="checkbox"/> Yes	No	See Below
#14 Sample bottles intact?	<input checked="" type="checkbox"/> Yes	No	
#15 Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#16 Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#17 Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/> Yes	No	See Below
#18 All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	No	See Below
#19 Subcontract of sample(s)?	Yes	No	Not Applicable
#20 VOC samples have zero headspace?	<input checked="" type="checkbox"/> 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 346641

for

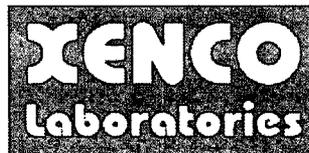
PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal - Legacy

2009-092

06-OCT-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)



06-OCT-09

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

Reference: XENCO Report No: **346641**
14" Vac to Jal - Legacy
Project Address: Lea County, NM

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 346641. 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. 346641 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

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Sample Cross Reference 346641



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal - Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
West Exc. NSW-1	S	Sep-30-09 16:00		346641-001
West Exc. WSW-1	S	Sep-30-09 16:05		346641-002
West Exc. SSW-1	S	Sep-30-09 16:10		346641-003
West Exc. Floor-1	S	Sep-30-09 16:15		346641-004
West Exc. Floor-2	S	Sep-30-09 16:20		346641-005



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal - Legacy

Project ID: 2009-092

Work Order Number: 346641

Report Date: 06-OCT-09

Date Received: 10/01/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-775229 Percent Moisture

None

Batch: LBA-775555 BTEX-MTBE EPA 8021B

SW8021BM

Batch 775555, Benzene, Ethylbenzene, Toluene, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. m,p-Xylenes recovered below QC limits in the Matrix Spike Duplicate.

Samples affected are: 346641-001, -003, -002, -004, -005.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits

Batch: LBA-775682 TPH by SW8015 Mod

None



Certificate of Analysis Summary 346641

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: 14" Vac to Jal - Legacy
 Date Received in Lab: Thu Oct-01-09 07:35 am
 Report Date: 06-OCT-09

Project Id: 2009-092
 Contact: Jason Henry
 Project Location: Lea County, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	346641-001	346641-002	346641-003	346641-004	346641-005
	Field Id:	West Exc. NSW-1	West Exc. WSW-1	West Exc. SSW-1	West Exc. Floor-1	West Exc. Floor-2
	Depth:					
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Sep-30-09 16:00	Sep-30-09 16:05	Sep-30-09 16:10	Sep-30-09 16:15	Sep-30-09 16:20
BTEX by EPA 8021B	Extracted:	Oct-02-09 16:15	Oct-02-09 16:15	Oct-02-09 16:15	Oct-02-09 16:15	Oct-02-09 16:15
	Analyzed:	Oct-03-09 14:50	Oct-03-09 15:12	Oct-03-09 15:32	Oct-03-09 15:54	Oct-03-09 16:15
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		ND 0.0011	ND 0.0012	ND 0.0011	ND 0.0012	ND 0.0012
Toluene		ND 0.0022	ND 0.0024	ND 0.0023	ND 0.0023	ND 0.0024
Ethylbenzene		ND 0.0011	ND 0.0012	ND 0.0011	ND 0.0012	ND 0.0012
m,p-Xylenes		ND 0.0022	ND 0.0024	ND 0.0023	ND 0.0023	ND 0.0024
o-Xylene		ND 0.0011	ND 0.0012	ND 0.0011	ND 0.0012	ND 0.0012
Total Xylenes		ND 0.0011	ND 0.0012	ND 0.0011	ND 0.0012	ND 0.0012
Total BTEX		ND 0.0011	ND 0.0012	ND 0.0011	ND 0.0012	ND 0.0012
Percent Moisture	Extracted:					
	Analyzed:	Oct-02-09 09:28	Oct-02-09 09:28	Oct-02-09 09:28	Oct-02-09 09:28	Oct-02-09 09:28
	Units/RL:	% RL	% RL	% RL	% RL	% RL
Percent Moisture		9.99 1.00	18.1 1.00	12.6 1.00	14.6 1.00	16.6 1.00
TPH By SW8015 Mod	Extracted:					
	Analyzed:	Oct-04-09 14:52	Oct-04-09 14:52	Oct-04-09 14:52	Oct-04-09 14:52	Oct-04-09 14:52
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		ND 16.7	ND 18.3	ND 17.2	ND 17.6	ND 18.0
C12-C28 Diesel Range Hydrocarbons		ND 16.7	ND 18.3	20.7 17.2	ND 17.6	ND 18.0
C28-C35 Oil Range Hydrocarbons		ND 16.7	ND 18.3	ND 17.2	ND 17.6	ND 18.0
Total TPH		ND 16.7	ND 18.3	20.7 17.2	ND 17.6	ND 18.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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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.

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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116





Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal - Legacy

Work Orders : 346641,
Lab Batch #: 775555

Sample: 539581-1-BKS / BKS

Project ID: 2009-092
Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 10/03/09 08:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 775555

Sample: 539581-1-bsd / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 10/03/09 08:34

SURROGATE RECOVERY STUDY

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

Lab Batch #: 775555

Sample: 539581-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 10/03/09 09:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 775555

Sample: 346641-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/03/09 14:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 775555

Sample: 346641-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/03/09 15:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	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: 14" Vac to Jal - Legacy

Work Orders : 346641,
Lab Batch #: 775555

Project ID: 2009-092

Sample: 346641-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 15:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 775555

Sample: 346641-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 15:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 775555

Sample: 346641-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 16:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 775555

Sample: 346856-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 18:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 775555

Sample: 346856-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 18:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

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



Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal - Legacy

Work Orders : 346641,
Lab Batch #: 775682

Project ID: 2009-092

Sample: 539683-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 10/05/09 11:57

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.3	100	91	70-135	
o-Terphenyl	35.4	50.0	71	70-135	

Lab Batch #: 775682 Sample: 539683-1-BSD / BSD Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 10/05/09 12:22

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	87.5	100	88	70-135	
o-Terphenyl	36.2	50.0	72	70-135	

Lab Batch #: 775682 Sample: 539683-1-BLK / BLK Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 10/05/09 12:47

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.5	100	76	70-135	
o-Terphenyl	36.7	50.0	73	70-135	

Lab Batch #: 775682 Sample: 346641-001 / SMP Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/05/09 14:02

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	72.6	100	73	70-135	
o-Terphenyl	36.1	50.0	72	70-135	

Lab Batch #: 775682 Sample: 346641-002 / SMP Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/05/09 14:28

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	73.3	100	73	70-135	
o-Terphenyl	35.6	50.0	71	70-135	

* 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: 14" Vac to Jal - Legacy

Work Orders : 346641,
Lab Batch #: 775682

Project ID: 2009-092

Sample: 346641-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/05/09 14:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.1	100	76	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 775682 Sample: 346641-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/05/09 15:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.1	100	74	70-135	
o-Terphenyl	36.1	50.0	72	70-135	

Lab Batch #: 775682 Sample: 346641-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/05/09 15:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.5	100	76	70-135	
o-Terphenyl	36.0	50.0	72	70-135	

Lab Batch #: 775682 Sample: 346327-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/05/09 21:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.1	100	94	70-135	
o-Terphenyl	36.1	50.0	72	70-135	

Lab Batch #: 775682 Sample: 346327-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/05/09 22:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.9	100	91	70-135	
o-Terphenyl	36.0	50.0	72	70-135	

* 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: 14" Vac to Jal - Legacy

Work Order #: 346641

Analyst: ASA

Lab Batch ID: 775555

Sample: 539581-1-BKS

Date Prepared: 10/02/2009

Batch #: 1

Project ID: 2009-092

Date Analyzed: 10/03/2009

Matrix: Solid

Units: mg/kg

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B	ND	0.1000	0.0966	97	0.1	0.0976	98	1	70-130	35	
Benzene	ND	0.1000	0.0932	93	0.1	0.0947	95	2	70-130	35	
Toluene	ND	0.1000	0.0937	94	0.1	0.0956	96	2	71-129	35	
Ethylbenzene	ND	0.2000	0.2039	102	0.2	0.2082	104	2	70-135	35	
m,p-Xylenes	ND	0.1000	0.0993	99	0.1	0.1009	101	2	71-133	35	
o-Xylene	ND	0.1000	0.0993	99	0.1	0.1009	101	2	71-133	35	

Date Prepared: 10/04/2009

Date Analyzed: 10/05/2009

Analyst: BHW

Lab Batch ID: 775682

Sample: 539683-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH By SW8015 Mod	ND	1000	852	85	1000	867	87	2	70-135	35	
C6-C12 Gasoline Range Hydrocarbons	ND	1000	823	82	1000	828	83	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	823	82	1000	828	83	1	70-135	35	

Relative Percent Difference RPD = $200 * [(C-F)/(C+E)]$
 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 - MSD Recoveries



Project Name: 14" Vac to Jal - Legacy

Work Order #: 346641

Project ID: 2009-092

Lab Batch ID: 775555

Batch #: 1 Matrix: Soil

Date Analyzed: 10/03/2009

QC-Sample ID: 346856-006 S Date Prepared: 10/02/2009 Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1095	0.0702	64	0.1088	0.0651	60	8	70-130	35	X
Toluene	ND	0.1095	0.0685	63	0.1088	0.0646	59	6	71-129	35	X
Ethylbenzene	ND	0.2189	0.1647	75	0.2176	0.1504	69	9	70-135	35	X
m,p-Xylenes	ND	0.1095	0.0751	69	0.1088	0.0696	64	8	71-133	35	X
o-Xylene	ND	0.1095	0.0751	69	0.1088	0.0696	64	8	71-133	35	X

Lab Batch ID: 775682

Batch #: 1 Matrix: Soil

Date Analyzed: 10/05/2009

QC-Sample ID: 346327-006 S Date Prepared: 10/04/2009 Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1020	877	86	1020	855	84	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1020	877	86	1020	855	84	3	70-135	35	

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

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

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



Sample Duplicate Recovery



Project Name: 14" Vac to Jal - Legacy

Work Order #: 346641

Lab Batch #: 775229

Project ID: 2009-092

Date Analyzed: 10/02/2009

Date Prepared: 10/02/2009

Analyst: BEV.

QC- Sample ID: 346641-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.99	9.96	0	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Plains / Basin Env
 Date/ Time: 10-01-09 @ 0735
 Lab ID #: 346041
 Initials: JMF

Sample Receipt Checklist

			Client initials	
#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	No	<u> </u> °C
#2	Shipping container in good condition?	<input checked="" type="checkbox"/> Yes	No	
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	<input checked="" type="checkbox"/> Not Present
#4	Custody Seals intact on sample bottles/ container/ label?	<input checked="" type="checkbox"/> Yes	No	Not Present
#5	Chain of Custody present?	<input checked="" type="checkbox"/> Yes	No	
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/> Yes	No	
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/> Yes	No	ID written on Cont / Lid
#9	Container label(s) legible and intact?	<input checked="" type="checkbox"/> Yes	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#11	Containers supplied by ELOT?	<input checked="" type="checkbox"/> Yes	No	
#12	Samples in proper container/ bottle?	<input checked="" type="checkbox"/> Yes	No	See Below
#13	Samples properly preserved?	<input checked="" type="checkbox"/> Yes	No	See Below
#14	Sample bottles intact?	<input checked="" type="checkbox"/> Yes	No	
#15	Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#16	Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/> Yes	No	See Below
#18	All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	No	See Below
#19	Subcontract of sample(s)?	Yes	No	<input checked="" type="checkbox"/> Not Applicable
#20	VOC samples have zero headspace?	<input checked="" type="checkbox"/> 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 351779

for

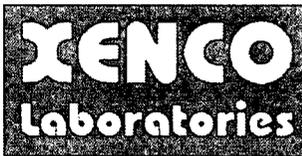
PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14-Inch Vac to Jal Legacy

2009-092

16-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)



16-NOV-09

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

Reference: XENCO Report No: **351779**
14-Inch Vac to Jal Legacy
Project Address: Lea County, NM

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 351779. 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. 351779 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

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Sample Cross Reference 351779



PLAINS ALL AMERICAN EH&S, Midland, TX

14-Inch Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
GP # 1 @ 6 Ft	S	Nov-10-09 13:00		351779-001
GP # 2 @ Grade	S	Nov-10-09 13:05		351779-002
GP # 3 @ Grade	S	Nov-10-09 13:10		351779-003
GP # 4 @ 5 Ft	S	Nov-10-09 13:15		351779-004
GP # 5 @ 7 Ft	S	Nov-10-09 13:20		351779-005
GP # 6 @ 9 Ft	S	Nov-10-09 13:25		351779-006
GP # 7 @ 9 Ft	S	Nov-10-09 13:30		351779-007
GP # 8 @ 9 Ft	S	Nov-10-09 13:35		351779-008
GP # 9 @ 10 Ft	S	Nov-10-09 13:40		351779-009
GP # 10 @ 7 Ft	S	Nov-10-09 13:45		351779-010
GP # 11 @ 7 Ft	S	Nov-10-09 13:50		351779-011
GP # 12 @ 10 Ft	S	Nov-10-09 13:55		351779-012
GP # 13 @ 10 Ft	S	Nov-10-09 14:00		351779-013
GP # 14 @ 12 Ft	S	Nov-10-09 14:05		351779-014
GP # 15 @ 10 Ft	S	Nov-10-09 14:10		351779-015
GP # 16 @ 10 Ft	S	Nov-10-09 14:15		351779-016



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal Legacy

Project ID: 2009-092

Work Order Number: 351779

Report Date: 16-NOV-09

Date Received: 11/11/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-781290 Inorganic Anions by EPA 300

None

Batch: LBA-781303 TPH by SW8015 Mod

None

Batch: LBA-781403 Percent Moisture

None

Batch: LBA-781406 Percent Moisture

None

Batch: LBA-781411 Inorganic Anions In Soil by E300

None



Certificate of Analysis Summary 351779

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal Legacy

Date Received in Lab: Wed Nov-11-09 08:12 am

Report Date: 16-NOV-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	351779-001	351779-002	351779-003	351779-004	351779-005	351779-006
Inorganic Anions In Soil by E300						GP # 1 @ 6 Ft	GP # 2 @ Grade	GP # 3 @ Grade	GP # 4 @ 5 Ft	GP # 5 @ 7 Ft	GP # 6 @ 9 Ft
				SOIL	Nov-10-09 13:00	Nov-10-09 13:05	Nov-10-09 13:10	Nov-10-09 13:15	Nov-10-09 13:20	Nov-10-09 13:25	SOIL
	Extracted:										
	Analyzed:										
	Units/RL:										
Chloride						119	11.6	3510	772	142	ND
						10.7	10.2	51.7	27.2	10.4	5.22
						Nov-11-09 13:33	Nov-12-09 08:42				
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						RL	RL	RL	RL	RL	RL
						1.00	1.00	1.00	1.00	1.00	1.00
Percent Moisture	Extracted:										
	Analyzed:										
	Units/RL:										
Percent Moisture						6.85	1.48	3.37	8.09	4.20	4.18
						1.00	1.00	1.00	1.00	1.00	1.00
						Nov-11-09 12:45	Nov-12-09 14:41				
						Nov-11-09 18:43	Nov-11-09 19:10	Nov-11-09 19:37	Nov-11-09 20:03	Nov-11-09 20:30	Nov-11-09 20:57
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						RL	RL	RL	RL	RL	RL
						ND	31.1	ND	ND	ND	216
TPH by SW8015 Mod											
C6-C12 Gasoline Range Hydrocarbons						31.4	522	263	19.7	62.1	4190
						16.1	15.2	15.5	16.3	15.7	15.6
						ND	134	74.8	ND	ND	290
C12-C28 Diesel Range Hydrocarbons											
C28-C35 Oil Range Hydrocarbons						31.4	687	338	19.7	62.1	4696
						16.1	15.2	15.5	16.3	15.7	15.6
Total TPH											

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work, order unless otherwise agreed to in writing.

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Brent Barron, II
Odessa Laboratory Manager



Certificate of Analysis Summary 351779

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: 14-Inch Vac to Jal Legacy

Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed Nov-11-09 08:12 am

Report Date: 16-NOV-09

Project Manager: Brent Barron, II

Lab Id:	351779-007	351779-008	351779-009	351779-010	351779-011	351779-012
Field Id:	GP # 7 @ 9 Ft	GP # 8 @ 9 Ft	GP # 9 @ 10 Ft	GP # 10 @ 7 Ft	GP # 11 @ 7 Ft	GP # 12 @ 10 Ft
Depth:						
Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampled:	Nov-10-09 13:30	Nov-10-09 13:35	Nov-10-09 13:40	Nov-10-09 13:45	Nov-10-09 13:50	Nov-10-09 13:55
Extracted:						
Analyzed:	Nov-12-09 08:42	Nov-12-09 08:42	Nov-12-09 08:42	Nov-12-09 08:42	Nov-12-09 08:42	Nov-12-09 08:42
Units/RL:	mg/kg RL 71.5 5.40	mg/kg RL 378 27.5	mg/kg RL 6.72 5.38	mg/kg RL 16.6 10.6	mg/kg RL 21.3 5.14	mg/kg RL ND 5.17
Extracted:						
Analyzed:	Nov-12-09 14:41	Nov-12-09 14:41	Nov-12-09 14:41	Nov-12-09 14:52	Nov-12-09 14:52	Nov-12-09 14:52
Units/RL:	% RL 7.38 1.00	% RL 9.23 1.00	% RL 7.03 1.00	% RL 5.46 1.00	% RL 2.80 1.00	% RL 3.25 1.00
Percent Moisture						
TPH by SW8015 Mod						
Extracted:	Nov-11-09 12:45	Nov-11-09 12:45	Nov-11-09 12:45	Nov-11-09 12:45	Nov-11-09 12:45	Nov-11-09 12:45
Analyzed:	Nov-11-09 21:25	Nov-11-09 21:52	Nov-11-09 22:19	Nov-11-09 22:47	Nov-11-09 23:41	Nov-12-09 00:08
Units/RL:	mg/kg RL ND 16.2	mg/kg RL ND 16.5	mg/kg RL 36.4 16.1	mg/kg RL ND 15.9	mg/kg RL ND 15.4	mg/kg RL 688 15.5
C6-C12 Gasoline Range Hydrocarbons						
C12-C28 Diesel Range Hydrocarbons	40.6 16.2	ND 16.5	286 16.1	23.2 15.9	170 15.4	3670 15.5
C28-C35 Oil Range Hydrocarbons	ND 16.2	ND 16.5	16.2 16.1	ND 15.9	18.6 15.4	227 15.5
Total TPH	40.6 16.2	ND 16.5	339 16.1	23.2 15.9	189 15.4	4585 15.5

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work, order unless otherwise agreed to in writing.

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Version: 1.014

Brent Barron, II

Odessa Laboratory Manager



Certificate of Analysis Summary 351779

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092
 Contact: Jason Henry
 Project Location: Lea County, NM

Date Received in Lab: Wed Nov-11-09 08:12 am
 Report Date: 16-NOV-09
 Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	351779-013	351779-014	351779-015	351779-016
	Field Id:	GP # 13 @ 10 Ft	GP # 14 @ 12 Ft	GP # 15 @ 10 Ft	GP # 16 @ 10 Ft
	Depth:				
	Matrix:	SOIL	SOIL	SOIL	SOIL
	Sampled:	Nov-10-09 14:00	Nov-10-09 14:05	Nov-10-09 14:10	Nov-10-09 14:15
Inorganic Anions In Soil by E300	Extracted:				
	Analyzed:	Nov-12-09 08:42	Nov-12-09 08:42	Nov-12-09 08:42	Nov-12-09 08:42
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		219 22.8	9.32 5.21	62.9 5.43	9.57 6.29
Percent Moisture	Extracted:				
	Analyzed:	Nov-12-09 14:52	Nov-12-09 14:52	Nov-12-09 14:52	Nov-12-09 14:52
	Units/RL:	% RL	% RL	% RL	% RL
Percent Moisture		12.1 1.00	3.95 1.00	7.86 1.00	20.5 1.00
TPH by SW8015 Mod	Extracted:				
	Analyzed:	Nov-11-09 12:45	Nov-11-09 12:45	Nov-11-09 12:45	Nov-11-09 12:45
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		ND 17.1	212 15.6	ND 16.2	ND 18.8
C12-C28 Diesel Range Hydrocarbons		51.9 17.1	2920 15.6	69.7 16.2	ND 18.8
C28-C35 Oil Range Hydrocarbons		ND 17.1	199 15.6	ND 16.2	ND 18.8
Total TPH		51.9 17.1	3331 15.6	69.7 16.2	ND 18.8

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Brent Barron, II



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.



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(361) 884-0371	(361) 884-9116





Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal Legacy

Work Orders : 351779,
Lab Batch #: 781303

Project ID: 2009-092

Sample: 542950-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/11/09 17:26

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.9	124	70-135	
o-Terphenyl	53.8	50.0	108	70-135	

Lab Batch #: 781303

Sample: 542950-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/11/09 17:52

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.8	127	70-135	
o-Terphenyl	54.1	49.9	108	70-135	

Lab Batch #: 781303

Sample: 542950-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/11/09 18:16

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.8	99.8	93	70-135	
o-Terphenyl	58.3	49.9	117	70-135	

Lab Batch #: 781303

Sample: 351779-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 18:43

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.2	99.9	88	70-135	
o-Terphenyl	55.4	50.0	111	70-135	

Lab Batch #: 781303

Sample: 351779-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 19:10

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.1	99.9	76	70-135	
o-Terphenyl	45.3	50.0	91	70-135	

* 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: 14-Inch Vac to Jal Legacy

Work Orders : 351779,
Lab Batch #: 781303

Project ID: 2009-092

Sample: 351779-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/11/09 19:37

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.9	99.7	87	70-135	
o-Terphenyl	53.8	49.9	108	70-135	

Lab Batch #: 781303 Sample: 351779-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/11/09 20:03

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.1	100	87	70-135	
o-Terphenyl	55.1	50.0	110	70-135	

Lab Batch #: 781303 Sample: 351779-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/11/09 20:30

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.5	100	85	70-135	
o-Terphenyl	52.0	50.0	104	70-135	

Lab Batch #: 781303 Sample: 351779-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/11/09 20:57

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.7	99.8	87	70-135	
o-Terphenyl	54.7	49.9	110	70-135	

Lab Batch #: 781303 Sample: 351779-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/11/09 21:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.2	100	87	70-135	
o-Terphenyl	54.8	50.0	110	70-135	

* 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: 14-Inch Vac to Jal Legacy



Work Orders : 351779,

Project ID: 2009-092

Lab Batch #: 781303

Sample: 351779-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg		Date Analyzed: 11/11/09 21:52		SURROGATE RECOVERY STUDY				
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
Analytes								
1-Chlorooctane		81.7	99.8	82	70-135			
o-Terphenyl		51.1	49.9	102	70-135			

Lab Batch #: 781303

Sample: 351779-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg		Date Analyzed: 11/11/09 22:19		SURROGATE RECOVERY STUDY				
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
Analytes								
1-Chlorooctane		94.4	100	94	70-135			
o-Terphenyl		60.3	50.0	121	70-135			

Lab Batch #: 781303

Sample: 351779-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg		Date Analyzed: 11/11/09 22:47		SURROGATE RECOVERY STUDY				
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
Analytes								
1-Chlorooctane		76.0	100	76	70-135			
o-Terphenyl		47.1	50.0	94	70-135			

Lab Batch #: 781303

Sample: 351779-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg		Date Analyzed: 11/11/09 23:41		SURROGATE RECOVERY STUDY				
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
Analytes								
1-Chlorooctane		70.8	99.6	71	70-135			
o-Terphenyl		43.9	49.8	88	70-135			

Lab Batch #: 781303

Sample: 351779-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg		Date Analyzed: 11/12/09 00:08		SURROGATE RECOVERY STUDY				
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
Analytes								
1-Chlorooctane		103	100	103	70-135			
o-Terphenyl		50.3	50.0	101	70-135			

* 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: 14-Inch Vac to Jal Legacy

Work Orders : 351779,
Lab Batch #: 781303

Project ID: 2009-092

Sample: 351779-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/12/09 00:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.0	100	85	70-135	
o-Terphenyl	53.3	50.0	107	70-135	

Lab Batch #: 781303

Sample: 351779-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/12/09 01:03

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.4	100	95	70-135	
o-Terphenyl	59.0	50.0	118	70-135	

Lab Batch #: 781303

Sample: 351779-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/12/09 01:29

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.4	99.7	89	70-135	
o-Terphenyl	55.4	49.9	111	70-135	

Lab Batch #: 781303

Sample: 351779-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/12/09 01:55

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.9	99.5	90	70-135	
o-Terphenyl	57.0	49.8	114	70-135	

Lab Batch #: 781303

Sample: 351779-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/12/09 04:07

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	54.7	50.0	109	70-135	

* 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: 14-Inch Vac to Jal Legacy

Work Orders : 351779,
Lab Batch #: 781303

Sample: 351779-001 SD / MSD

Batch: 1

Project ID: 2009-092

Matrix: Soil

Units: mg/kg

Date Analyzed: 11/12/09 04:33

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	53.5	50.0	107	70-135	

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



Blank Spike Recovery



Project Name: 14-Inch Vac to Jal Legacy

Work Order #: 351779

Project ID:

2009-092

Lab Batch #: 781290

Sample: 781290-1-BKS

Matrix: Solid

Date Analyzed: 11/11/2009

Date Prepared: 11/11/2009

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions In Soil by E300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	10.6	106	75-125	

Lab Batch #: 781411

Sample: 781411-1-BKS

Matrix: Solid

Date Analyzed: 11/12/2009

Date Prepared: 11/12/2009

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions In Soil by E300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	10.4	104	75-125	

Blank Spike Recovery [D] = 100*[C]/[B]

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

ND - Below Reporting Limit



BS / BSD Recoveries



Project Name: 14-Inch Vac to Jal Legacy

Work Order #: 351779

Project ID: 2009-092

Analyst: BEV

Date Prepared: 11/11/2009

Date Analyzed: 11/11/2009

Lab Batch ID: 781303

Batch #: 1

Sample: 542950-1-BKS

Matrix: Solid

Units: mg/kg

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	999	892	89	998	895	90	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	999	808	81	998	835	84	3	70-135	35	

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: 14-Inch Vac to Jal Legacy

Work Order #: 351779
Lab Batch #: 781290
Date Analyzed: 11/11/2009
QC- Sample ID: 351720-001 S
Reporting Units: mg/kg

Date Prepared: 11/11/2009

Project ID: 2009-092

Analyst: LATCOR

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	2120	1300	3700	122	75-125	

Lab Batch #: 781411
Date Analyzed: 11/12/2009
QC- Sample ID: 351779-006 S
Reporting Units: mg/kg

Date Prepared: 11/12/2009

Analyst: LATCOR

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	115	120	104	75-125	

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

① - Below Reporting Limit



Form 3 - MSD Recoveries



Project Name: 14-Inch Vac to Jal Legacy

Work Order #: 351779

Project ID: 2009-092

Lab Batch ID: 781303

QC-Sample ID: 351779-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 11/12/2009

Date Prepared: 11/11/2009

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	TPH by SW8015 Mod	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
C6-C12 Gasoline Range Hydrocarbons		ND	1070	934	87	1070	951	89	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons		31.4	1070	837	75	1070	864	78	4	70-135	35	

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

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

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



Sample Duplicate Recovery



Project Name: 14-Inch Vac to Jal Legacy

Work Order #: 351779

Lab Batch #: 781290

Project ID: 2009-092

Date Analyzed: 11/11/2009

Date Prepared: 11/11/2009

Analyst: LATCOR

QC- Sample ID: 351720-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY

Inorganic Anions In Soil by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	2120	2110	0	20	

Lab Batch #: 781411

Date Analyzed: 11/12/2009

Date Prepared: 11/12/2009

Analyst: LATCOR

QC- Sample ID: 351779-006 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY

Inorganic Anions In Soil by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

Lab Batch #: 781403

Date Analyzed: 11/12/2009

Date Prepared: 11/12/2009

Analyst: BEV

QC- Sample ID: 351716-016 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.47	8.39	12	20	

Lab Batch #: 781406

Date Analyzed: 11/12/2009

Date Prepared: 11/12/2009

Analyst: BEV

QC- Sample ID: 351779-010 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.46	5.87	7	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Basin / Plains
 Date/ Time: 11/11/09 8:12
 Lab ID #: 351779
 Initials: gms

Sample Receipt Checklist

				Client Initials	
#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	No	- .4	° C
#2	Shipping container in good condition?	<input checked="" type="checkbox"/> Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	<input type="checkbox"/> Not Present	
#4	Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/> Yes	No	Not Present	
#5	Chain of Custody present?	<input checked="" type="checkbox"/> Yes	No		
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/> Yes	No		
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/> Yes	No		
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/> Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<input checked="" type="checkbox"/> Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/> Yes	No		
#11	Containers supplied by ELOT?	<input checked="" type="checkbox"/> Yes	No		
#12	Samples in proper container/ bottle?	<input checked="" type="checkbox"/> Yes	No	See Below	
#13	Samples properly preserved?	<input checked="" type="checkbox"/> Yes	No	See Below	
#14	Sample bottles intact?	<input checked="" type="checkbox"/> Yes	No		
#15	Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No		
#16	Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No		
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/> Yes	No	See Below	
#18	All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	<input type="checkbox"/> Not Applicable	
#20	VOC samples have zero headspace?	Yes	No	<input type="checkbox"/> 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 355590

for

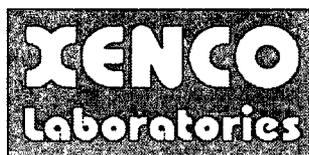
PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14-Inch Vac to Jal Legacy

2009-092

17-DEC-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 (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

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

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

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-08-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-DEC-09

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

Reference: XENCO Report No: **355590**
14-Inch Vac to Jal Legacy
Project Address: Lea County, NM

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 355590. 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. 355590 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

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Sample Cross Reference 355590



PLAINS ALL AMERICAN EH&S, Midland, TX

14-Inch Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB # 4 @ 10'	S	Dec-10-09 09:15		355590-001
SB # 4 @ 20'	S	Dec-10-09 09:40		355590-002
SB # 4 @ 30'	S	Dec-10-09 10:25		355590-003
SB # 4 @ 40'	S	Dec-10-09 11:00		355590-004
SB # 4 @ 50'	S	Dec-10-09 11:55		355590-005
SB # 5 @ 10'	S	Dec-10-09 13:10		355590-006
SB # 5 @ 20'	S	Dec-10-09 13:40		355590-007
SB # 5 @ 30'	S	Dec-10-09 14:15		355590-008
SB # 5 @ 40'	S	Dec-10-09 15:00		355590-009
SB # 5 @ 45'	S	Dec-10-09 15:50		355590-010

CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal Legacy

Project ID: 2009-092

Work Order Number: 355590

Report Date: 17-DEC-09

Date Received: 12/14/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-785868 Inorganic Anions by EPA 300

None

Batch: LBA-785882 Percent Moisture

None

Batch: LBA-785886 Percent Moisture

None

Batch: LBA-785951 Inorganic Anions In Soil by E300

None



Certificate of Analysis Summary 355590

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal Legacy

Date Received in Lab: Mon Dec-14-09 05:20 pm

Report Date: 17-DEC-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	355590-007	355590-008	355590-009	355590-010
	Field Id:	SB # 5 @ 20'	SB # 5 @ 30'	SB # 5 @ 40'	SB # 5 @ 45'
	Depth:				
	Matrix:	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-10-09 13:40	Dec-10-09 14:15	Dec-10-09 15:00	Dec-10-09 15:50
Inorganic Anions In Soil by E300	Extracted:				
	Analyzed:	Dec-16-09 08:38	Dec-16-09 08:38	Dec-16-09 08:38	Dec-16-09 08:38
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Percent Moisture	Chloride	263	55.5	6.71	183
	Extracted:				
	Analyzed:	Dec-15-09 17:00	Dec-15-09 17:00	Dec-15-09 17:00	Dec-15-09 17:00
Units/RL:	% RL	% RL	% RL	% RL	
Percent Moisture		10.5	4.41	ND	3.44
		1.00	1.00	1.00	1.00

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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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

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5332 Blackberry Drive, San Antonio TX 78238	(214) 902 0300	(214) 351-9139
2505 North Falkenburg Rd, Tampa, FL 33619	(210) 509-3334	(210) 509-3335
5757 NW 158th St, Miami Lakes, FL 33014	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(305) 823-8500	(305) 823-8555
842 Cantwell Lane, Corpus Christi, TX 78408	(432) 563-1800	(432) 563-1713
	(361) 884-0371	(361) 884-9116





Blank Spike Recovery



Project Name: 14-Inch Vac to Jal Legacy

Work Order #: 355590

Project ID:

2009-092

Lab Batch #: 785868

Sample: 785868-1-BKS

Matrix: Solid

Date Analyzed: 12/15/2009

Date Prepared: 12/15/2009

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions In Soil by E300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	10.8	108	75-125	

Lab Batch #: 785951

Sample: 785951-1-BKS

Matrix: Solid

Date Analyzed: 12/16/2009

Date Prepared: 12/16/2009

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions In Soil by E300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	10.6	106	75-125	

Blank Spike Recovery [D] = 100*[C]/[B]

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

ND - Below Reporting Limit



Form 3 - MS Recoveries



Project Name: 14-Inch Vac to Jal Legacy

Work Order #: 355590
Lab Batch #: 785868
Date Analyzed: 12/15/2009
QC- Sample ID: 355585-001 S
Reporting Units: mg/kg

Date Prepared: 12/15/2009

Project ID: 2009-092
Analyst: LATCOR

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	255	1260	1640	110	75-125	

Lab Batch #: 785951
Date Analyzed: 12/16/2009
QC- Sample ID: 355590-008 S
Reporting Units: mg/kg

Date Prepared: 12/16/2009

Analyst: LATCOR

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	55.5	112	172	104	75-125	

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

- Below Reporting Limit



Sample Duplicate Recovery

Project Name: 14-Inch Vac to Jal Legacy

Work Order #: 355590

Lab Batch #: 785868

Project ID: 2009-092

Date Analyzed: 12/15/2009

Date Prepared: 12/15/2009

Analyst: LATCOR

QC- Sample ID: 355585-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY

Inorganic Anions In Soil by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	255	241	6	20	

Lab Batch #: 785951

Date Analyzed: 12/16/2009

Date Prepared: 12/16/2009

Analyst: LATCOR

QC- Sample ID: 355590-008 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY

Inorganic Anions In Soil by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.5	56.7	2	20	

Lab Batch #: 785882

Date Analyzed: 12/15/2009

Date Prepared: 12/15/2009

Analyst: WRU

QC- Sample ID: 355585-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	20.9	22.4	7	20	

Lab Batch #: 785886

Date Analyzed: 12/15/2009

Date Prepared: 12/15/2009

Analyst: WRU

QC- Sample ID: 355590-007 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	10.5	11.4	9	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Environmental Lab of Texas
 Variance/ Corrective Action Report- Sample Log-In

Client: Plains / Basin
 Date/ Time: 12-14-09 @ 1720
 Lab ID #: 355590
 Initials: JMF

Sample Receipt Checklist

				Client Initials		
#1	Temperature of container/ cooler?	<u>(Yes)</u>	No	2.6	°C	
#2	Shipping container in good condition?	<u>(Yes)</u>	No			
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	<u>(Not Present)</u>		
#4	Custody Seals intact on sample bottles/ container? /labels	<u>(Yes)</u>	No	Not Present		
#5	Chain of Custody present?	<u>(Yes)</u>	No			
#6	Sample instructions complete of Chain of Custody?	<u>(Yes)</u>	No			
#7	Chain of Custody signed when relinquished/ received?	<u>(Yes)</u>	No			
#8	Chain of Custody agrees with sample label(s)?	<u>(Yes)</u>	No	ID written on Cont./ Lid		
#9	Container label(s) legible and intact?	<u>(Yes)</u>	No	Not Applicable		
#10	Sample matrix/ properties agree with Chain of Custody?	<u>(Yes)</u>	No			
#11	Containers supplied by ELOT?	<u>(Yes)</u>	No			
#12	Samples in proper container/ bottle?	<u>(Yes)</u>	No	See Below		
#13	Samples properly preserved?	<u>(Yes)</u>	No	See Below		
#14	Sample bottles intact?	<u>(Yes)</u>	No			
#15	Preservations documented on Chain of Custody?	<u>(Yes)</u>	No			
#16	Containers documented on Chain of Custody?	<u>(Yes)</u>	No			
#17	Sufficient sample amount for indicated test(s)?	<u>(Yes)</u>	No	See Below		
#18	All samples received within sufficient hold time?	<u>(Yes)</u>	No	See Below		
#19	Subcontract of sample(s)?	Yes	<u>(No)</u>	Not Applicable		
#20	VOC samples have zero headspace?	<u>(Yes)</u>	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 337179

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy

2009-092

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

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

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14-JUL-09

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

Reference: XENCO Report No: **337179**
14" Vac to Jal Legacy
Project Address: Lea County, NM

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 337179. 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.

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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

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Sample Cross Reference 337179



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-2 Prelim GW	W	Jul-02-09 07:30		337179-001
SB-3 Prelim GW	W	Jul-02-09 13:00		337179-002

CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy

Project ID: 2009-092

Work Order Number: 337179

Report Date: 14-JUL-09

Date Received: 07/06/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-764628 Inorganic Anions by EPA 300

None

Batch: LBA-764871 TDS by SM2540C

None

Batch: LBA-765343 BTEX-MTBE EPA 8021B

SW8021BM

Batch 765343, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 533575-1-BLK, 337179-002.

1,4-Difluorobenzene recovered above QC limits. Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 336977-006 S, 336977-006 SD.

SW8021BM

Batch 765343, Toluene, o-Xylene recovered below QC limits in the Matrix Spike.

Samples affected are: 337179-002, -001.

The Laboratory Control Sample for Toluene, o-Xylene is within laboratory Control Limits



Certificate of Analytical Summary 337179
PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092
 Contact: Jason Henry
 Project Location: Lea County, NM

Project Name: 14" Vac to Jal Legacy

Date Received in Lab: Mon Jul-06-09 12:55 pm

Report Date: 14-JUL-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	337179-001	337179-002
Anions by EPA 300	SB-2 Prelim GW	SB-3 Prelim GW		WATER	Jul-02-09 07:30	WATER	Jul-02-09 13:00
	mg/L	mg/L	RL		10200	500	10500
	mg/L	mg/L	RL		500	500	500
BTEX by EPA 8021B	Jul-06-09 14:02	Jul-06-09 14:02					
	mg/L	mg/L	RL		0.0063	0.0010	ND 0.0010
	mg/L	mg/L	RL		0.0158	0.0020	ND 0.0020
	mg/L	mg/L	RL		0.0054	0.0010	ND 0.0010
	mg/L	mg/L	RL		0.0070	0.0020	ND 0.0020
	mg/L	mg/L	RL		0.0037	0.0010	ND 0.0010
	mg/L	mg/L	RL		0.0107	0.0010	ND 0.0010
	mg/L	mg/L	RL		0.0382	0.0010	ND 0.0010
TDS by SM2540C	Jul-07-09 15:22	Jul-07-09 15:22					
	mg/L	mg/L	RL		19700	5.00	20500
	mg/L	mg/L	RL		5.00	5.00	5.00
Total dissolved solids							

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 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.



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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116





Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 337179,
Lab Batch #: 765343

Project ID: 2009-092

Sample: 533575-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L		Date Analyzed: 07/13/09 12:34		SURROGATE RECOVERY STUDY		
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0315	0.0300	105	80-120	
4-Bromofluorobenzene		0.0351	0.0300	117	80-120	

Lab Batch #: 765343

Sample: 533575-1-bsd / BSD

Batch: 1 Matrix: Water

Units: mg/L		Date Analyzed: 07/13/09 12:53		SURROGATE RECOVERY STUDY		
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0315	0.0300	105	80-120	
4-Bromofluorobenzene		0.0356	0.0300	119	80-120	

Lab Batch #: 765343

Sample: 533575-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L		Date Analyzed: 07/13/09 13:30		SURROGATE RECOVERY STUDY		
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0275	0.0300	92	80-120	
4-Bromofluorobenzene		0.0192	0.0300	64	80-120	*

Lab Batch #: 765343

Sample: 337179-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L		Date Analyzed: 07/13/09 14:25		SURROGATE RECOVERY STUDY		
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0267	0.0300	89	80-120	
4-Bromofluorobenzene		0.0273	0.0300	91	80-120	

Lab Batch #: 765343

Sample: 337179-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L		Date Analyzed: 07/13/09 14:43		SURROGATE RECOVERY STUDY		
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0275	0.0300	92	80-120	
4-Bromofluorobenzene		0.0229	0.0300	76	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: 14" Vac to Jal Legacy



Work Orders : 337179,
Lab Batch #: 765343

Sample: 336977-006 S / MS

Project ID: 2009-092

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/13/09 20:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0472	0.0300	157	80-120	*
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 765343

Sample: 336977-006 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/13/09 20:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0485	0.0300	162	80-120	*
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	



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





Blank Spike Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 337179

Project ID:

2009-092

Lab Batch #: 764628

Sample: 764628-1-BKS

Matrix: Water

Date Analyzed: 07/06/2009

Date Prepared: 07/06/2009

Analyst: LATCOR

Reporting Units: mg/L

Batch #: 1

BLANK/BLANK SPIKE RECOVERY STUDY

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	9.22	92	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]

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

L - Below Reporting Limit



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 337179

Project ID: 2009-092

Analyst: ASA

Date Prepared: 07/11/2009

Date Analyzed: 07/13/2009

Lab Batch ID: 765343

Sample: 533575-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0845	85	0.1	0.0908	91	7	70-125	25	
Toluene	ND	0.1000	0.0799	80	0.1	0.0861	86	7	70-125	25	
Ethylbenzene	ND	0.1000	0.0890	89	0.1	0.0961	96	8	71-129	25	
m,p-Xylenes	ND	0.2000	0.1780	89	0.2	0.1937	97	8	70-131	25	
o-Xylene	ND	0.1000	0.0847	85	0.1	0.0914	91	8	71-133	25	

Analyst: WRU

Date Prepared: 07/07/2009

Date Analyzed: 07/07/2009

Lab Batch ID: 764871

Sample: 764871-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TDS by SM2540C											
Total dissolved solids	ND	1000	904	90	1000	942	94	4	80-120	30	

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: 14" Vac to Jal Legacy

Work Order #: 337179
Lab Batch #: 764628
Date Analyzed: 07/06/2009
QC- Sample ID: 337000-001 S
Reporting Units: mg/L

Date Prepared: 07/06/2009
Batch #: 1

Project ID: 2009-092
Analyst: LATCOR
Matrix: Water

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
	Chloride	495	250	739	98	80-120

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

 - Below Reporting Limit



Form 3 - MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 337179

Project ID: 2009-092

Lab Batch ID: 765343

Batch #: 1 Matrix: Water

Date Analyzed: 07/13/2009

QC-Sample ID: 336977-006 S Analyst: ASA

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0286	0.1000	0.1043	76	0.1000	0.1067	78	2	70-125	25	
Toluene	ND	0.1000	0.0679	68	0.1000	0.0698	70	3	70-125	25	X
Ethylbenzene	0.0030	0.1000	0.0759	73	0.1000	0.0791	76	4	71-129	25	
m,p-Xylenes	ND	0.2000	0.1494	75	0.2000	0.1540	77	3	70-131	25	
o-Xylene	ND	0.1000	0.0704	70	0.1000	0.0728	73	3	71-133	25	X

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

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

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



Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 337179

Lab Batch #: 764628

Project ID: 2009-092

Date Analyzed: 07/06/2009

Date Prepared: 07/06/2009

Analyst: LATCOR

QC- Sample ID: 337000-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	495	487	2	20	

Lab Batch #: 764871

Date Analyzed: 07/07/2009

Date Prepared: 07/07/2009

Analyst: WRU

QC- Sample ID: 337179-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TDS by SM2540C	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Total dissolved solids	19700	19800	1	30	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST
 12608 West Loop East
 Odessa, Texas 79766
 Phone: 432-563-1800
 Fax: 432-563-1713

Project Manager: Camille Bryant
 Company Name: Basin Environmental Consulting, LLC
 Company Address: P. O. Box 381
 City/State/Zip: Lovington, NM 88260
 Telephone No: 505-658-7210
 Sampler Signature: Camille Bryant
 Project Name: "14" Vac to Jal Legacy
 Project #: 2009-092
 Project Loc: Lea County, NM
 PO #: PAA - Jason Henry
 Report Format: Standard TRRP NPDES

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	Ending Depth	Beginning Depth	Field # of Containers	Field # of Containers Preserved	Field # of Containers	Matrix	Acid/25 Part	Standard TAT
10	SB-2 Prelim. GW	7/22/09	0730			4			GW	X	X
10	SB-3 Prelim. GW	7/22/09	1200			4			GW	X	X

Special Instructions:

Requested by: Camille Bryant Date: 7/16/09 Time: 1235
 Received by: Andria Beem Date: 7/22/09 Time: 11:35

Requested by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____

Requested by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____

Special Instructions:
 Laboratory Comments:
 VOCs Free of Headspace?
 (Initials of analyst)
 Custody seals on containers?
 Custody seals on cooler(s)?
 Sample Hand Delivered
 by Sampler/Client Rep.?
 by Courier? DPS
 Temperature Upon Receipt: 4.1 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin Env./Plains
 Date/ Time: 7-10-09 12:35
 Lab ID #: 337179
 Initials: AL

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	4.1 °C	
#2	Shipping container in good condition?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#3	Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not Present	
#4	Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Present	
#5	Chain of Custody present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#11	Containers supplied by ELOT?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#12	Samples in proper container/ bottle?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#13	Samples properly preserved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#14	Sample bottles intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#15	Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#16	Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#18	All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#19	Subcontract of sample(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not Applicable	
#20	VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> 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 337272

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal - Legacy

2009-092

14-JUL-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



14-JUL-09

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

Reference: XENCO Report No: **337272**
14" Vac to Jal - Legacy
Project Address: Lea Co., NM

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 337272. 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. 337272 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

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Sample Cross Reference 337272



PLAINS ALL AMERICAN EH&S, Midland, TX
14" Vac to Jal - Legacy

Sample Id

Matrix

Date Collected

Sample Depth

Lab Sample Id

MW-1

W

Jul-06-09 10:45

337272-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal - Legacy

Project ID: 2009-092

Work Order Number: 337272

Report Date: 14-JUL-09

Date Received: 07/07/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-764860 Inorganic Anions by EPA 300

None

Batch: LBA-764871 TDS by SM2540C

None

Batch: LBA-765196 BTEX-MTBE EPA 8021B

SW8021BM

Batch 765196, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 337272-001.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits

SW8021BM

Batch 765196, 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 337033-002 S,337033-002 SD.

4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 533485-1-BLK,337033-002 S,337033-002 SD,337272-001.

4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 533485-1-BKS,533485-1-BSD.



Certificate of Analysis Summary 337272

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092
 Contact: Jason Henry
 Project Location: Lea Co., NM

Project Name: 14" Vac to Jal - Legacy

Date Received in Lab: Tue Jul-07-09 10:15 am

Report Date: 14-JUL-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: Field Id: Depth: Matrix: Sampled:	337272-001 MW-1 WATER Jul-06-09 10:45
Anions by EPA 300	Extracted: Analyzed: Units/RL:	Jul-08-09 17:29 mg/L RL 5300 250
Chloride		
BTEX by EPA 8021B	Extracted: Analyzed: Units/RL:	Jul-08-09 18:00 Jul-11-09 17:06 mg/L RL ND 0.0010 ND 0.0020 ND 0.0010 ND 0.0020 ND 0.0010 ND 0.0010 ND 0.0010
Benzene		
Toluene		
Ethylbenzene		
m,p-Xylenes		
o-Xylene		
Total Xylenes		
Total BTEX		
TDS by SM2540C	Extracted: Analyzed: Units/RL:	Jul-07-09 15:22 mg/L RL 14300 5.00
Total dissolved solids		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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


 Brent Barron
 Odessa Laboratory Director



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
 - B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
 - D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
 - E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
 - F** RPD exceeded lab control limits.
 - J** The target analyte was positively identified below the MQL and above the SQL.
 - U** Analyte was not detected.
 - L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
 - H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
 - K** Sample analyzed outside of recommended hold time.
 - 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.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal - Legacy



Work Orders : 337272,
Lab Batch #: 765196

Project ID: 2009-092

Sample: 533485-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 07/11/09 10:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0366	0.0300	122	80-120	*

Lab Batch #: 765196

Sample: 533485-1-bsd / BSD

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 07/11/09 11:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0372	0.0300	124	80-120	*

Lab Batch #: 765196

Sample: 533485-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 07/11/09 11:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0167	0.0300	56	80-120	*

Lab Batch #: 765196

Sample: 337272-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 07/11/09 17:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0189	0.0300	63	80-120	*

Lab Batch #: 765196

Sample: 337033-002 S / MS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 07/12/09 07:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	<0.0000	0.0300	0	80-120	*
4-Bromofluorobenzene	<0.0000	0.0300	0	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: 14" Vac to Jal - Legacy

Work Orders : 337272,
Lab Batch #: 765196

Sample: 337033-002 SD / MSD

Project ID: 2009-092

Batch: | Matrix: Water

Units: mg/L

Date Analyzed: 07/12/09 08:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	<0.0000	0.0300	0	80-120	*
4-Bromofluorobenzene	<0.0000	0.0300	0	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.



Blank Spike Recovery



Project Name: 14" Vac to Jal - Legacy

Work Order #: 337272

Project ID: 2009-092

Lab Batch #: 764860

Sample: 764860-1-BKS

Matrix: Water

Date Analyzed: 07/08/2009

Date Prepared: 07/08/2009

Analyst: LATCOR

Reporting Units: mg/L

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	9.03	90	90-110	

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

ND - Below Reporting Limit



BS / BSD Recoveries



Project Name: 14" Vac to Jal - Legacy

Work Order #: 337272

Project ID: 2009-092

Analyst: BRB

Date Prepared: 07/08/2009

Date Analyzed: 07/11/2009

Lab Batch ID: 765196

Batch #: 1

Sample: 533485-1-BKS

Matrix: Water

Units: mg/L

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B	ND	0.1000	0.0924	92	0.1	0.0933	93	1	70-125	25	
Benzene	ND	0.1000	0.0872	87	0.1	0.0883	88	1	70-125	25	
Toluene	ND	0.1000	0.0961	96	0.1	0.0984	98	2	71-129	25	
Ethylbenzene	ND	0.2000	0.1950	98	0.2	0.1992	100	2	70-131	25	
m,p-Xylenes	ND	0.1000	0.0929	93	0.1	0.0947	95	2	71-133	25	
o-Xylene	ND	0.1000	0.0929	93	0.1	0.0947	95	2	71-133	25	

Analyst: WRU

Date Prepared: 07/07/2009

Date Analyzed: 07/07/2009

Lab Batch ID: 764871

Batch #: 1

Sample: 764871-1-BKS

Matrix: Water

Units: mg/L

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TDS by SM2540C	ND	1000	904	90	1000	942	94	4	80-120	30	
Total dissolved solids	ND	1000	904	90	1000	942	94	4	80-120	30	

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: 14" Vac to Jal - Legacy

Work Order #: 337272

Project ID: 2009-092

Lab Batch #: 764860

Analyst: LATCOR

Date Prepared: 07/08/2009

Date Analyzed: 07/08/2009

Batch #: 1

Matrix: Water

QC- Sample ID: 337428-001 S

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	127	100	241	114	80-120	

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

BPL - Below Reporting Limit



Form 3 - MSD Recoveries



Project Name: 14" Vac to Jal - Legacy

Work Order #: 337272

Project ID: 2009-092

Lab Batch ID: 765196

QC- Sample ID: 337033-002 S Batch #: 1 Matrix: Water

Date Analyzed: 07/12/2009

Date Prepared: 07/08/2009 Analyst: BRB

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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	0.0316	0.1000	ND	0	0.1000	ND	0	NC	70-125	25	X
Toluene	0.0071	0.1000	ND	0	0.1000	ND	0	NC	70-125	25	X
Ethylbenzene	0.0021	0.1000	ND	0	0.1000	ND	0	NC	71-129	25	X
m,p-Xylenes	0.0080	0.2000	ND	0	0.2000	ND	0	NC	70-131	25	X
o-Xylene	0.0041	0.1000	ND	0	0.1000	ND	0	NC	71-133	25	X

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

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

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



Sample Duplicate Recovery



Project Name: 14" Vac to Jal - Legacy

Work Order #: 337272

Lab Batch #: 764860

Date Analyzed: 07/08/2009

QC- Sample ID: 337428-001 D

Reporting Units: mg/L

Date Prepared: 07/08/2009

Batch #: 1

Project ID: 2009-092

Analyst: LATCOR

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	127	141	10	20	

Lab Batch #: 764871

Date Analyzed: 07/07/2009

QC- Sample ID: 337179-001 D

Reporting Units: mg/L

Date Prepared: 07/07/2009

Batch #: 1

Analyst: WRU

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY

TDS by SM2540C	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Total dissolved solids	19700	19800	1	30	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Environmental Lab of Texas
 Variance/ Corrective Action Report- Sample Log-In

Client: Basim / Plains
 Date/ Time: 07/01/09 10:15
 Lab ID #: 337272
 Initials: AMK

Sample Receipt Checklist

			Client Initials		
#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	0.4 ° C	
#2	Shipping container in good condition?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#3	Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Present	
#5	Chain of Custody present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#11	Containers supplied by ELOT?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#12	Samples in proper container/ bottle?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#13	Samples properly preserved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#14	Sample bottles intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#15	Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#16	Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#18	All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#19	Subcontract of sample(s)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Not Applicable	
#20	VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> 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 349366

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14-Inch Vac to Jal - Legacy

2009-092

23-OCT-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)



23-OCT-09

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

Reference: XENCO Report No: **349366**
14-Inch Vac to Jal - Legacy
Project Address: Lea County, NM

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 349366. 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. 349366 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

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Certified and approved by numerous States and Agencies.

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



Sample Cross Reference 349366



PLAINS ALL AMERICAN EH&S, Midland, TX

14-Inch Vac to Jal - Legacy

Sample Id

Matrix

Date Collected

Sample Depth

Lab Sample Id

MW-1

W

Oct-21-09 10:30

349366-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal - Legacy

Project ID: 2009-092

Report Date: 23-OCT-09

Work Order Number: 349366

Date Received: 10/22/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-778519 BTEX-MTBE EPA 8021B

None



Certificate of Analytical Summary 349366
PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: 14-Inch Vac to Jal - Legacy
Date Received in Lab: Thu Oct-22-09 08:30 am
Report Date: 23-OCT-09
Project Manager: Brent Barron, II

Project Id: 2009-092
Contact: Jason Henry
Project Location: Lea County, NM

<i>Analysis Requested</i>		<i>Lab Id:</i>	<i>Field Id:</i>	<i>Depth:</i>	<i>Matrix:</i>	<i>Sampled:</i>	<i>Extracted:</i>	<i>Analyzed:</i>	<i>Units/RL:</i>
BTEX by EPA 8021		349366-001	MW-1		WATER	Oct-21-09 10:30	Oct-22-09 14:00	Oct-22-09 14:46	
Benzene							mg/L	RL	
Toluene							0.0125	0.0010	
Ethylbenzene							0.0049	0.0020	
m,p-Xylenes							ND	0.0010	
o-Xylene							ND	0.0020	
Xylenes, Total							ND	0.0010	
Total BTEX							0.0174	0.0010	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

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.



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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116





Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 349366,
Lab Batch #: 778519

Project ID: 2009-092

Sample: 541341-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 10/22/09 13:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 778519

Sample: 541341-1-bsd / BSD

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 10/22/09 13:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 778519

Sample: 541341-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 10/22/09 14:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 778519

Sample: 349366-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 10/22/09 14:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 778519

Sample: 349366-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 10/22/09 23:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 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	0.0316	0.0300	105	80-120	

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



Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 349366,
Lab Batch #: 778519

Sample: 349366-001 SD / MSD

Batch: 1

Project ID: 2009-092

Matrix: Water

Units: mg/L

Date Analyzed: 10/22/09 23:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



BS / BSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 349366

Project ID: 2009-092

Analyst: ASA

Date Prepared: 10/22/2009

Date Analyzed: 10/22/2009

Lab Batch ID: 778519

Batch #: 1

Sample: 541341-1-BKS

Matrix: Water

Units: mg/L

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021											
Benzene	ND	0.1000	0.0952	95	0.1	0.0941	94	1	70-125	25	
Toluene	ND	0.1000	0.0937	94	0.1	0.0925	93	1	70-125	25	
Ethylbenzene	ND	0.1000	0.0950	95	0.1	0.0936	94	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.2091	105	0.2	0.2064	103	1	70-131	25	
o-Xylene	ND	0.1000	0.1013	101	0.1	0.1002	100	1	71-133	25	

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

Blank Spike Recovery [D] = $100 * (C) / (B)$

Blank Spike Duplicate Recovery [G] = $100 * (F) / (E)$

All results are based on MDL and Validated for QC Purposes



Form 3 - MSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 349366

Project ID: 2009-092

Lab Batch ID: 778519

QC-Sample ID: 349366-001 S Batch #: 1 Matrix: Water

Date Analyzed: 10/22/2009

Date Prepared: 10/22/2009 Analyst: ASA

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021											
Benzene	0.0125	0.1000	0.1029	90	0.1000	0.1029	90	0	70-125	25	
Toluene	0.0049	0.1000	0.0960	91	0.1000	0.0940	89	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0875	88	0.1000	0.0865	87	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.1941	97	0.2000	0.1893	95	3	70-131	25	
o-Xylene	ND	0.1000	0.0934	93	0.1000	0.0915	92	2	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 Applicable
N = See Narrative, EQL = Estimated Quantitation Limit

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Plains / Basin
 Date/ Time: 10-22-09 @ 0830
 Lab ID #: 349340
 Initials: JMF

Sample Receipt Checklist

	Yes	No	Client Initials
#1 Temperature of container/ cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.6 ° C
#2 Shipping container in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(N/A)
#3 Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Present (N/A)
#4 Custody Seals intact on sample bottles/ container? / label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Present
#5 Chain of Custody present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#6 Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#7 Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#8 Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ID written on Cont./ Lid
#9 Container label(s) legible and intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#11 Containers supplied by ELOT?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#12 Samples in proper container/ bottle?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#13 Samples properly preserved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#14 Sample bottles intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#15 Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#16 Containers documented on Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#17 Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#18 All samples received within sufficient hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#19 Subcontract of sample(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Applicable
#20 VOC samples have zero headspace?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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 356646

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy

2009-092

30-DEC-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 (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), 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)



30-DEC-09

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

Reference: XENCO Report No: **356646**
14" Vac to Jal Legacy
Project Address: Lea County, NM

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 356646. 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. 356646 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

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Sample Cross Reference 356646



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-4 GW	W	Dec-22-09 11:15		356646-001
SB-5 GW	W	Dec-22-09 12:30		356646-002

CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy

Project ID: 2009-092

Work Order Number: 356646

Report Date: 30-DEC-09

Date Received: 12/23/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

*Batch: LBA-786923 Inorganic Anions by EPA 300
E300MI*

Batch 786923, Chloride recovered above QC limits in the Matrix Spike.

Samples affected are: 356646-001, -002.

The Laboratory Control Sample for Chloride is within laboratory Control Limits

Batch: LBA-787536 TDS by SM2540C

None



Certificate of Analysis Summary 356646

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: 14" Vac to Jal Legacy
Date Received in Lab: Wed Dec-23-09 08:17 am
Report Date: 30-DEC-09
Project Manager: Brent Barron, II

Project Id: 2009-092
Contact: Jason Henry
Project Location: Lea County, NM

Analysis Requested	Lab Id: 356646-001	356646-002	
	Field Id: SB-4 GW	SB-5 GW	
	Depth: WATER	WATER	
	Matrix: Dec-22-09 11:15	Dec-22-09 12:30	
Inorganic Anions In Water by E300	Sampled: Dec-23-09 10:08	Dec-23-09 10:08	
	Extracted: mg/L RL	mg/L RL	
	Analyzed: 8580 250	9920 250	
TDS by SM2540C	Units/RL: Dec-28-09 14:40	Dec-28-09 14:40	
	Extracted: mg/L RL	mg/L RL	
	Analyzed: 15700 5.00	18200 5.00	
Units/RL:			
Total dissolved solids			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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


 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.

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 9701 Harry Hines Blvd , Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



Blank Spike Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 356646

Project ID:

2009-092

Lab Batch #: 786923

Sample: 786923-1-BKS

Matrix: Water

Date Analyzed: 12/23/2009

Date Prepared: 12/23/2009

Analyst: LATCOR

Reporting Units: mg/L

Batch #: 1

BLANK/BLANK SPIKE RECOVERY STUDY

Inorganic Anions In Water by E300	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Chloride	ND	10.0	10.8	108	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]

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

- Below Reporting Limit



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 356646
Analyst: WRU
Lab Batch ID: 787536

Date Prepared: 12/28/2009
Batch #: 1
Sample: 787536-1-BKS
Matrix: Water

Project ID: 2009-092
Date Analyzed: 12/28/2009

Units: mg/L

TDS by SM2540C

Analytes

Total dissolved solids

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
N/D	1000	1040	104	1000	980	98	6	80-120	30	

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: 14" Vac to Jal Legacy

Work Order #: 356646

Lab Batch #: 786923

Date Analyzed: 12/23/2009

Date Prepared: 12/23/2009

Project ID: 2009-092

Analyst: LATCOR

QC- Sample ID: 356608-001 S

Batch #: 1

Matrix: Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	133	100	244	111	90-110	X

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

Below Reporting Limit



Sample Duplicate Recovery

Project Name: 14" Vac to Jal Legacy

Work Order #: 356646

Lab Batch #: 786923

Project ID: 2009-092

Date Analyzed: 12/23/2009

Date Prepared: 12/23/2009

Analyst: LATCOR

QC- Sample ID: 356608-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY

Inorganic Anions In Water by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	133	134	1	20	

Lab Batch #: 787536

Date Analyzed: 12/28/2009

Date Prepared: 12/28/2009

Analyst: WRU

QC- Sample ID: 356646-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY

TDS by SM2540C	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Total dissolved solids	15700	16300	4	30	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Curt Stanley PAGE 01 OF 01
 Company Name: Basin Environmental Service Technologies, LLC
 Company Address: P. O. Box 301
 City/State/Zip: Livingston, NM 88260
 Telephone No: (505) 441-2244
 Sampler Signature: *Curt Stanley* Email: cstanley@basineny.com
 Project Name: 14" Vac to Jal Legacy
 Project #: 2009-092
 Project Loc: Lea County, NM
 PO #: PAA - J. Henry

Report Format: Standard TRRP NPDES

Lab # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total R. of Containers	Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₈	None	Preservation & # of Containers		Main	Analyze For:	
															Other (Specify)	DW - Drinking Water SL - Sludge			
01	SB-4 GW			12/22/2009	1115		1	1											TPH: TX 1005 TX 1008 TPH: 418.1 801SM 801SB Cations (Ca, Mg, Na, K) Anions (Cl, SO ₄ , Alkalinity) SAR / ESP / CEC Metals: As Ag Ba Cd Cr Pb Hg Se Volatiles SemiVolatiles BTEX 8021B/8030 or BTEX 8290 RUSH TAT (Pre-Schedule) 24, 48, 72 hrs
02	SB-5 GW			12/22/2009	1230		1	1											PAH 8270 N.O.R.M. RUSH TAT (Pre-Schedule) 24, 48, 72 hrs

Special Instructions: _____

Relinquished by: *Curt Stanley* Date: 12/23/09 Time: 0817

Relinquished by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____

Received by: *Amey RL* Date: 12/23/09 Time: 8:17

Received by: _____ Date: _____ Time: _____

Received by: _____ Date: _____ Time: _____

Temperature Upon Receipt: 26 °C

Laboratory Comments:
 Sample Containers Used? N/A
 VOCs Free of Headspace? N/A
 Labels on Containers? Y
 Custody seals on container(s)? Y
 Caddy seals on container(s)? Y
 Sample Hand Delivered by Sampler? Y
 Client Rep. by Counter? Y
 UPS Y DHL Y FedEx Y Lone Star Y

AS 12/23/09 250ml poly 500

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin Environmental/Plains
 Date/ Time: 12/23/09 8:17
 Lab ID #: 356646
 Initials: JS

Sample Receipt Checklist

				Client Initials
#1 Temperature of container/ cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	2.6 °C	
#2 Shipping container in good condition?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#3 Custody Seals intact on shipping container/ cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present	
#4 Custody Seals intact on sample bottles/ container?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Present	
#5 Chain of Custody present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#6 Sample instructions complete of Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#7 Chain of Custody signed when relinquished/ received?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#8 Chain of Custody agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	ID written on Cont./ Lid	
#9 Container label(s) legible and intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Applicable	
#10 Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#11 Containers supplied by ELOT?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#12 Samples in proper container/ bottle?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below	
#13 Samples properly preserved?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below	
#14 Sample bottles intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#15 Preservations documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#16 Containers documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#17 Sufficient sample amount for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below	
#18 All samples received within sufficient hold time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below	
#19 Subcontract of sample(s)?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	Not Applicable	
#20 VOC samples have zero headspace?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> 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 366350

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14 Inch Vac to Jal Legacy

2009-092

24-MAR-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

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

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295)



24-MAR-10

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

Reference: XENCO Report No: **366350**
14 Inch Vac to Jal Legacy
Project Address: Lea County, NM

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 366350. 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. 366350 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

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Sample Cross Reference 366350



PLAINS ALL AMERICAN EH&S, Midland, TX

14 Inch Vac to Jal Legacy

Sample Id

Matrix

Date Collected

Sample Depth

Lab Sample Id

MW-1

W

Mar-11-10 09:45

366350-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14 Inch Vac to Jal Legacy



Project ID: 2009-092

Work Order Number: 366350

Report Date: 24-MAR-10

Date Received: 03/19/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-799583 BTEX by EPA 8021

None



Certificate of Analysis Summary 366350
PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: 14 Inch Vac to Jal Legacy
Date Received in Lab: Fri Mar-19-10 04:47 pm
Report Date: 24-MAR-10
Project Manager: Brent Barron, II

Project Id: 2009-092
Contact: Jason Henry
Project Location: Lea County, NM

<i>Analysis Requested</i>		<i>Lab Id:</i>	<i>Field Id:</i>	<i>Depth:</i>	<i>Matrix:</i>	<i>Sampled:</i>	<i>Extracted:</i>	<i>Analyzed:</i>	<i>Units/RL:</i>
BTEX by EPA 8021		366350-001	MW-1		WATER	Mar-11-10 09:45	Mar-23-10 08:00	Mar-23-10 11:56	mg/L RL
Benzene									0.0720 0.0010
Toluene									0.0243 0.0020
Ethylbenzene									0.0020 0.0010
m,p-Xylenes									ND 0.0020
o-Xylene									0.0017 0.0010
Xylenes, Total									0.0017 0.0010
Total BTEX									0.1000 0.0010

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

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.



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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116





Form 2 - Surrogate Recoveries

Project Name: 14 Inch Vac to Jal Legacy



Work Orders : 366350,
Lab Batch #: 799583

Project ID: 2009-092

Sample: 558913-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L		Date Analyzed: 03/23/10 10:04		SURROGATE RECOVERY STUDY		
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0271	0.0300	90	80-120	
4-Bromofluorobenzene		0.0296	0.0300	99	80-120	

Lab Batch #: 799583

Sample: 558913-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L		Date Analyzed: 03/23/10 10:26		SURROGATE RECOVERY STUDY		
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0281	0.0300	94	80-120	
4-Bromofluorobenzene		0.0309	0.0300	103	80-120	

Lab Batch #: 799583

Sample: 558913-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L		Date Analyzed: 03/23/10 11:34		SURROGATE RECOVERY STUDY		
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0240	0.0300	80	80-120	
4-Bromofluorobenzene		0.0308	0.0300	103	80-120	

Lab Batch #: 799583

Sample: 366350-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L		Date Analyzed: 03/23/10 11:56		SURROGATE RECOVERY STUDY		
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0257	0.0300	86	80-120	
4-Bromofluorobenzene		0.0265	0.0300	88	80-120	

Lab Batch #: 799583

Sample: 366350-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L		Date Analyzed: 03/23/10 20:11		SURROGATE RECOVERY STUDY		
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0268	0.0300	89	80-120	
4-Bromofluorobenzene		0.0277	0.0300	92	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: 14 Inch Vac to Jal Legacy

Work Orders : 366350,
Lab Batch #: 799583

Sample: 366350-001 SD / MSD

Batch: 1

Project ID: 2009-092

Matrix: Water

Units: mg/L

Date Analyzed: 03/23/10 20:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0282	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.



BS / BSD Recoveries



Project Name: 14 Inch Vac to Jal Legacy

Work Order #: 366350

Project ID: 2009-092

Analyst: ASA

Date Analyzed: 03/23/2010

Lab Batch ID: 799583

Date Prepared: 03/23/2010

Sample: 558913-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021											
Benzene	ND	0.1000	0.0967	97	0.1	0.0999	100	3	70-125	25	
Toluene	ND	0.1000	0.0966	97	0.1	0.0987	99	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0968	97	0.1	0.1008	101	4	71-129	25	
m,p-Xylenes	ND	0.2000	0.1894	95	0.2	0.1966	98	4	70-131	25	
o-Xylene	ND	0.1000	0.0910	91	0.1	0.0946	95	4	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 - MSD Recoveries



Project Name: 14 Inch Vac to Jal Legacy

Work Order #: 366350

Project ID: 2009-092

Lab Batch ID: 799583

QC- Sample ID: 366350-001 S Batch #: 1 Matrix: Water

Date Analyzed: 03/23/2010

Date Prepared: 03/23/2010 Analyst: ASA

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021											
Benzene	0.0720	0.1000	0.1522	80	0.1000	0.1568	85	3	70-125	25	
Toluene	0.0243	0.1000	0.1053	81	0.1000	0.1072	83	2	70-125	25	
Ethylbenzene	0.0020	0.1000	0.0831	81	0.1000	0.0839	82	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.1560	78	0.2000	0.1564	78	0	70-131	25	
o-Xylene	0.0017	0.1000	0.0771	75	0.1000	0.0771	75	0	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 Applicable, N = See Narrative, EQ = Estimated Quantitation Limit

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin Env. / Plains
 Date/ Time: 3.19.10 16:47
 Lab ID #: 366350
 Initials: AL

Sample Receipt Checklist

				Client Initials
#1 Temperature of container/ cooler?	Yes	No	3.6 °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 C
Photographs



14 Inch Vac to Jal Legacy Initial Release



Excavation Activities at the 14 Inch Vac to Jal Legacy Release Site



Excavation Activities at the 14 Inch Vac to Jal Legacy Release Site



Excavation Activities at the 14 Inch Vac to Jal Legacy Release Site



14 Inch Vac to Jal Legacy Release Site Looking South



14 Inch Vac to Jal Legacy Release Site Looking East

Appendix D
Release Notification and Corrective
Action (Form C-141)

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED

APR 20 2009
HOBBSDUCD

Form C-14
Revised October 10, 2001

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form.

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company	Plains Pipeline, LP	Contact	Jason Henry
Address	2530 Hwy 214 - Denver City, Tx 79323	Telephone No.	(575) 441-1099
Facility Name	14 - inch Vac to Jal Legacy	Facility Type	Pipeline

Surface Owner	Legacy Petroleum	Mineral Owner		Lease No.	
---------------	------------------	---------------	--	-----------	--

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	25	25S	37E					Lea

Latitude N 32° 6' 10.7" Longitude W 103° 7' 10.3"

NATURE OF RELEASE

Type of Release	Crude Oil	Volume of Release	250 bbls	Volume Recovered	0 bbls
Source of Release	14" Steel Pipeline	Date and Hour of Occurrence	04/09/2009	Date and Hour of Discovery	04/09/2009 10:00 a.m.
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Larry Johnson		
By Whom?	Jason Henry	Date and Hour	04/09/2009 @ 14:20		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

During the purging of the 14-inch Sweet Vac to Jal Line, a release of crude oil occurred due to external corrosion. Throughput for the subject line is 0 bbls/day because the line is inactive and was being purged at the time of the release. The depth of the pipeline at the release point is approximately 2' bgs. The H2S concentration in the crude is less than 10 ppm and the gravity of the crude is 38.

Describe Area Affected and Cleanup Action Taken.*

The released crude resulted in a surface stain that measured approximately 300' x 300'. The impacted area will be remediated per applicable guidelines.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Jason Henry</i>	OIL CONSERVATION DIVISION	
Printed Name: Jason Henry	<i>Larry Johnson</i> Approved by District Supervisor ENVIRONMENTAL ENGINEER	
Title: Remediation Coordinator	Approval Date: 7.30.09	Expiration Date: 10.6.09
E-mail Address: jhenry@paalp.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 04/20/2009 Phone: (575) 441-1099		

* Attach Additional Sheets If Necessary

IRP - 2162
ISSUED 4.20.09

CORRESPONDENCE

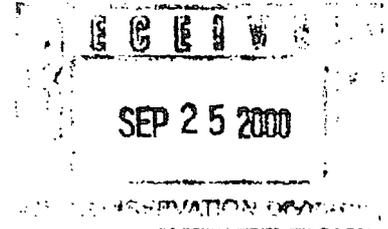
MISC.

RICE Operating Company

122 West Taylor • Hobbs, New Mexico 88240
Phone: (505)393-9174 • Fax: (505) 397-1471

CERTIFIED MAIL

RETURN RECEIPT NO. 7099 3220 0002 3946 8004



September 21, 2000

Mr. William C. Olson
NM Energy, Minerals, and Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
2040 S. Pacheco
Santa Fe, NM 87505

RE: GROUND WATER CONTAMINATION
ARCO SOUTH JUSTIS UNIT F-230
JUSTIS SALT WATER DISPOSAL SYSTEM
UNIT LETTER C, SEC 25, T25S, R37E
LEA COUNTY, NEW MEXICO

Dear Mr. Olson:

Rice Operating Company (ROC) is in receipt of your letter informing of groundwater contamination at the above-described site. ROC confirms that a Justis SWD System 4" PVC pipeline is active at this site, and to the southwest of the site, a pipeline vent is installed.

ROC was informed about this environmental project in August of 1998 by Bob Allen of Safety and Environmental Solutions, Inc., (SESI) a Hobbs NM consulting firm working for ARCO Permian. A meeting was conducted with ARCO Permian at the SESI office in Hobbs on August 24 to share information. A site investigation, visual and historic record review was conducted at that time (letter describing results is enclosed) and because of a clean boring near the pipeline and no record or evidence of accidental discharge from this pipeline or pressure vent device, it was determined that the Justis pipeline and nearby vent were not likely to have contributed to the groundwater impact at this site.

After receipt of NMOCD's August 9, 2000 request for a site investigation, ROC discussed this site impact with BP (formerly ARCO Permian), Margaret Lowe, and made plans to include BP in a near-pipeline investigative dig. ROC representatives again went to this site on August 18th and reviewed the topographical nature of the surrounding area. It was decided that on a date

suitable to ROC and BP, ROC would arrange for a backhoe, work crew, and environmental technician to be at this site and conduct the following work plan:

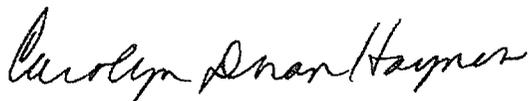
1. The vadose zone on both sides and beneath the 4" PVC pipeline will be exposed in several strategic places for sample procurement.
2. Samples will be collected from several depths at each sampling site.
3. Samples will be field analyzed for volatile hydrocarbons with a PID meter, and for chlorides by silver nitrate titration.
4. Selected samples will have field results confirmed at Cardinal Laboratory in Hobbs, NM.
5. Sample results of this work plan will be compiled and reviewed.
6. Results, interpretation, conclusion, future work plan, etc. will be submitted to NMOCD with copies to BP and any other interested parties.

An estimated timeline for this site investigation to be conducted is the first week of October, probably either the 5th or 6th. NMOCD will be notified 48 hours in advance of the event. All sampling and analysis will be conducted pursuant to NMOCD guidelines.

ROC is the service provider (operator) for the Justis Salt Water Disposal System and has no ownership of any portion of pipeline, well or facility. The Justis SWD System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis.

If you have any questions or if I can be of any service, please don't hesitate to call.

RICE OPERATING COMPANY



Carolyn Doran Haynes
Operations Engineer

Enclosure: Letter to SESI dated 9/24/98

Cc: file, Ms. Donna Williams,
NMOCD, District I Office
1625 N. French Drive
Hobbs, NM 88240

RICE *Operating Company*

122 West Taylor
HOBBS, NEW MEXICO 88240
(505) 393-9174

September 24, 1998

Safety & Environmental Solutions, Inc.
703 East Clinton, Suite 103
Hobbs, New Mexico 88240

ATTN: Mr. Bob Allen, President

RE: Pit Closure
NW/4, 25-T25S-R37E
Lea County, New Mexico

Mr. Allen:

Rice Operating Company (ROC) has completed an initial assessment of the potential for Vent C-25 and the associated pipeline to be a source of groundwater contamination at the above-referenced site. This assessment was performed in response to the concerns expressed by Safety & Environmental Solutions, Inc. (SES) and Arco Permian during our meeting on August 24, 1998. The assessment included a review of ROC files for historical evidence of a release, a review of investigation results supplied by SES, and a visual inspection of the site.

The subject pipeline is a 4-inch PVC line that was buried approximately 2.5 feet below ground surface. Both the file review and the visual inspection of the pipeline by ROC personnel identified no evidence of an active leak or record of a historical release/spill having occurred at the site.

Based on information obtained during the ground water monitoring event conducted by SES on August 25, 1998, the depth to groundwater beneath the site ranges from approximately 60 feet to 63 feet below ground surface and the apparent direction of groundwater flow is towards the southeast. A base map depicting the top of the water table and direction of groundwater flow is enclosed.

The analytical results from the monitoring event indicate that dissolved chloride (Cl) and total dissolved solid (TDS) concentrations in the groundwater progressively increase in a downgradient direction. The two upgradient monitor wells MW-1 and MW-5 contained the lowest levels of Cl and TDS as compared to the five downgradient wells. Cl and TDS levels ranged from 1,839 mg/l Cl and 4,380 mg/l TDS in MW-1 to 24,186 mg/l Cl and 58,260 mg/l TDS in MW-6.

The analytical results indicate a significant increase in CL and TDS levels between the wells located upgradient relative to the former pit area (MW-1 and MW-5) and the wells located downgradient from the former pit (MW-2, MW-3, MW-4, MW-6, and MW-7).

As shown on the enclosed map, all seven monitor wells are located upgradient to Vent C-25. Therefore Vent C-25 is not a potential source of the groundwater contamination.

The portion of our pipeline that could be a potential source (located upgradient relative to the contamination identified in MW-6 and MW-7) is approximately 2.5 feet below ground surface. Any release from the line would have had to migrate downward through 60 feet of soil before impacting groundwater. The analytical results from soil samples collected when MW-2 was drilled recorded TPH (total petroleum hydrocarbon) and BTEX (benzene, toluene, ethylbenzene, and total xylenes) levels below method detection limits for all sampled intervals. While soil samples apparently were not collected when MW-6 and MW-7 were installed, no staining or other evidence of soil contamination was noted on the boring logs from these wells

Based on these findings, Vent C-25 and the associated pipeline are not a potential source of the groundwater contamination identified at this site.

If you have any questions, please feel free to call me at the phone number listed above.

Sincerely,

F. Wesley Root
Projects Manager



Enclosure: Base Map

cc: KH
JM
File

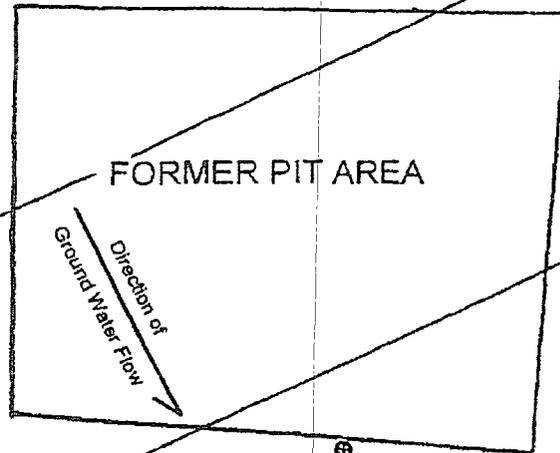


MW-5 ⊕ 3,002.85'
 CL - 2,396
 TDS - 5,430

MW-1 ⊕ 3,002.72'
 CL - 1,839
 TDS - 4,380

3,002.70'

3,002.60'



3,002.50'

3,002.45' ⊕ MW-4
 CL - 6,910
 TDS - 13,960

RICE OPERATING CO.
 4-INCH PVC PIPELINE

MW-3 ⊕ 3,002.47'
 CL - 4,124
 TDS - 8,840

MW-2 ⊕ 3,002.41'
 CL - 2,731
 TDS - 12,240

3,002.40'

3,002.33' ⊕ MW-6
 CL - 24,186
 TDS - 58,260

VENT C-25



3,002.31' ⊕ MW-7
 CL - 3,288
 TDS - 8,170

CL = Chloride Concentration (mg/l)
 TDS = Total Dissolved Solids Concentration (mg/l)
 Contour Interval = 0.10 feet
 Groundwater samples and gauging data obtained by SES on 8-25-98

Rice Operating Company
 122 W. Taylor
 Hobbs, NM 88240
 Ph: (505) 393-9174 FAX 397-1471

Map Legend
 ⊕ - Monitor Well Location
 □ - Junction Box
 Scale: 1 inch = 50 feet

BASE MAP
 Vent C-25, Justis SWD System
 Ltr C, Sec 25-T25S-R37E
 Lea Co. NM



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

December 30, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z-559-572-890

Ms. Margaret Lowe
Arco Permian
P.O. Box 1610
Midland, Texas 79702

**RE: GROUND WATER/SOIL INVESTIGATION AND REMEDIATION
SOUTH JUSTIS UNIT F-230**

Dear Ms. Lowe:

The New Mexico Oil Conservation Division (OCD) has reviewed Arco Permian's (Arco) November 15, 1999 "WORK PLAN, VADOSE ZONE GROUND WATER REMEDIATION PLAN, IDA WIMBERLY PIT, ARCO PERMIAN" and accompanying September 28, 1999 "ARCO PERMIAN, IDA WIMBERLY, SOUTH JUSTIS UNIT F-230, MONITOR WELL REPORT, LEA COUNTY, NEW MEXICO". These documents, which were submitted on behalf of Arco by their consultant Safety & Environmental Solutions, Inc, contain the results of Arco's investigation of soil and ground water contamination related to the former use of an unlined pit at Arco's South Justis Unit F-230 located in Unit C, Section 25, T25S, R37E, Lea County, New Mexico.. The documents also contain a work plan for installation of a new monitor well in the former pit, ground water quality monitoring and remediation of soil contamination.

The above referenced work plan is approved with the following conditions:

1. Arco shall sample soils from the new monitor well at 10 foot intervals from the surface. The samples shall be analyzed for concentrations of chloride, total petroleum hydrocarbons, benzene, toluene, ethylbenzene and xylene.
2. Arco shall complete the new monitor well as follows:
 - a. At least 15 feet of well screen shall be placed across the water table interface with 5 feet of the well screen above the water table and 10 feet of the well screen below the water table.
 - b. An appropriately sized gravel pack shall be set in the annulus around the well screen from the bottom of the hole to 2-3 feet above the top of the well screen.

Ms. Margaret Lowe
December 30, 1999
Page 2

- c. A 2-3 foot bentonite plug shall be placed in the annulus above the gravel pack.
 - d. The remainder of the annulus shall be grouted to the surface with cement containing 3-5% bentonite.
 - e. A concrete pad and locking well cover shall be placed at the surface.
 - e. The well shall be developed after construction using EPA approved procedures.
3. Arco shall wait a minimum of 24 hours after the new monitor well has been developed to purge and sample ground water from the monitor well.
 4. All soil and ground water samples shall be sampled and analyzed using EPA approved methods and quality assurance/quality control (QA/QC) procedures.
 5. Quarterly ground water sampling shall continue until the site receives approval for final closure of the soil and ground water remedial actions.
 6. All wastes generated during the investigation and remediation activities shall be disposed of at an OCD approved facility.
 7. Arco shall submit an annual report which contains the results of all investigation, remediation and monitoring activities. The report shall be submitted to the OCD Santa Fe Office by April 1 of each year with a copy provided to the OCD Hobbs District Office and shall include the following information:
 - a. A description of all investigation, remediation and monitoring activities which occurred during the past year including conclusions and recommendations.
 - b. A geologic/lithologic log and well completion diagram for each new monitor well, vapor venting well and soil boring.
 - c. A quarterly water table potentiometric map showing the location of the pit and any spills, excavated areas, monitor wells, soil borings, vapor venting wells and any other pertinent site features as well as the direction and magnitude of the hydraulic gradient.
 - d. Quarterly isopleth maps for contaminants of concern which were observed during the investigations.

Ms. Margaret Lowe
December 30, 1999
Page 3

- e. Summary tables of all new soil sampling results obtained during the investigation and copies of all laboratory analytical data sheets and associated QA/QC data.
- f. Summary tables of all ground water sampling results obtained over time since initiation of ground water sampling and copies of all laboratory analytical data sheets and associated QA/QC data.
- g. The disposition of all wastes generated.

Please be advised that OCD approval does not relieve Arco of liability should the work plan fail to adequately remediate or monitor contamination related to Arco's activities, or if contamination exists which is outside the scope of the work plan. In addition, OCD approval does not relieve Arco of responsibility for compliance with any other federal, state or local laws and regulations.

If you have any questions, please call me at (505) 827-7154.

Sincerely,



William C. Olson
Hydrologist
Environmental Bureau

xc: OCD Hobbs District Office
Beth Aldrich, Safety & Environmental Solutions, Inc.

**Work Plan
Vadose Zone Ground Water Remediation Plan
Ida Wimberly Pit
ARCO Permian**

RECEIVED

NOV 17 1999

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Purpose

The purpose of this Work Plan is to cause the closure of the abandoned pit located at the Ida Wimberly lease in a manner that will protect the population, environment and groundwater of the area surrounding the subject location. The Ida Wimberly lease is located at the ARCO Permian (ARCO) South Justis Unit F-230 in Unit C, Section 25, T25S, R37E, Lea County, New Mexico.

Background

In October 1997, ARCO secured the services of Safety and Environmental Solutions, Inc. to complete all necessary sampling and testing of the area covered by the abandoned pit located at the Ida Wimberly lease. ARCO owns the surface rights to Section 25 as well as part of the adjacent sections. ARCO owns the mineral rights in the NW 1/4 and the SW 1/4 NE 1/4. The remaining portion of the NE 1/4 are state mineral rights. The mineral rights of the south half of Section 25 are federal. ARCO controls the traffic on the surface of the property and also controls the disposition of the ground water under this property. (See Exhibit A- South Justis Unit Plat)

In the initial investigation, a borehole was drilled at the bottom of the pit area. The field analytical results indicated an elevated level of Total Petroleum Hydrocarbons (TPH). Knowledge of process indicates that the material in this area would be exempt oil field waste. Based upon this information, a work plan for installation of monitor wells to delineate contamination was developed. This information was reported to the New Mexico Oil Conservation Division in the report dated November 6, 1997, *ARCO Permian Work Plan Investigation of Possible Groundwater Impact, Section 25 Township 25S Range 37 E, Lea County, New Mexico.*

Upon approval of the work plan, three monitor wells were installed. The results revealed elevated levels of Chlorides and Total Dissolved Solids (TDS). This information was submitted to the New Mexico Oil Conservation Division in a report dated December 1997, *ARCO Permian Installation of Monitor Wells and Investigative Results, Section 25 Township 25S Range 37 E, Lea County, New Mexico.*

After review of these results, further delineation was deemed necessary. The installation of additional monitor wells was proposed and submitted to the New Mexico Oil Conservation Division in a report dated April 28, 1998, *ARCO Permian Amended Work Plan Investigation of Possible Groundwater Impact, Section 25 Township 25S Range 37 E, Lea County, New Mexico.* The results from this phase of the investigation were submitted under separate cover on September 28, 1999.

Shallow protectable groundwater in the area is scarce. There are two water wells within a one-mile radius of the pit. The water from these wells is currently used for livestock. This pit has not been used since before 1991 when ARCO acquired the lease. During this time, the hydrocarbons have not migrated beyond the pit boundaries. The lack of migration is confirmed by the latest sampling of the monitor wells conducted on September 24, 1999. A summary of the analysis follows:

Constituent	MAW #1	MAW #2	MAW #3	MAW #4	MAW #5	MAW #6	MAW #7
Sodium	1157 ppm	3611 ppm	2892 ppm	8521 ppm	1355 ppm	22692ppm	3553 ppm
Calcium	296 ppm	544 ppm	448 ppm	736 ppm	312 ppm	2480 ppm	600 ppm
Magnesium	126 ppm	258 ppm	214 ppm	272 ppm	112 ppm	1458 ppm	97 ppm
Potassium	24 ppm	62 ppm	55 ppm	76 ppm	20 ppm	98 ppm	66 ppm
Conductivity	1978 ppm	1715 ppm	1679 ppm	1603 ppm	1657 ppm	1482 ppm	1523 ppm
T-Alkalinity	188 ppm	376 ppm	376 ppm	508 ppm	196 ppm	192 ppm	136 ppm
Chlorides	2231 ppm	6590 ppm	5374 ppm	14600ppm	2535 ppm	42583ppm	6387 ppm
Sulfate (SO ₄)	455 ppm	666 ppm	397 ppm	488 ppm	429 ppm	1428 ppm	553 ppm
Carbonate	0 ppm						
HCO ₃	229 ppm	459 ppm	459 ppm	620 ppm	239 ppm	234 ppm	166 ppm
TDS	4520 ppm	14270ppm	10330ppm	20020ppm	5100 ppm	71000ppm	12140ppm
pH	7.19	6.88	6.91	7.04	7.28	6.74	7.59
TPH	2.76 ppm	4.27 ppm	1.52 ppm	3.27 ppm	1.26 ppm	1.88 ppm	1.32 ppm
Benzene	<.002 ppm	0.003 ppm	0.005 ppm	0.033 ppm	<.002 ppm	0.003 ppm	0.008 ppm
Toluene	<.002 ppm						
E. Benzene	<.002 ppm	<.002 ppm	<.002 ppm	0.006 ppm	<.002 ppm	<.002 ppm	<.002 ppm
T. Xylenes	<.006 ppm						

A cumulative summary of laboratory analytical results for each monitor well can be found attached as Appendix A. These results show elevated levels of Chlorides and TDS (Total Dissolved Solids) in all monitor wells from initial testing. Sulfate levels fluctuate in all wells from initial testing. Benzene has been observed in Monitor Well #4 only in all testing.

The Site Plan in Appendix B shows the location of the monitoring wells.

Method

Vadose Zone

ARCO proposes to begin remediation of the vadose zone by placing two soil-venting wells along the south edge of the existing pit area in order to allow oxygenation of the soils below surface. The wells will consist of 2" PVC screen contacting the vadose zone from a depth of 5' to just above the capillary fringe at an approximate depth of 50'. These wells will also allow light-end hydrocarbons to be vented to the surface. The process of introducing air to the vadose zone will enhance the process of natural attenuation.

Monitoring of the natural attenuation process will be achieved through the monitoring of the groundwater in the existing monitor wells.

Groundwater Program

ARCO agrees to sample existing groundwater in all monitor wells quarterly for a period of 18 months that began in June 1999. The quarterly samples will be analyzed for Chlorides, Sulfate, TDS, pH, TPH, Benzene, Toluene, Ethyl-benzene, and Total Xylenes as identified in the initial sampling. The initial samples were analyzed for TPH, BTEX, Chlorides, major Cations and Anions, and Total Dissolved Solids with results filed with the NMOCD Santa Fe and Hobbs District offices.

In addition to the monitoring program, Arco will install an exploratory well in the pit area in order to asses any impact contaminants from the pits area may have had upon the ground water underlying the pit.

ARCO proposes to begin drilling the three additional wells by December 3, 1999.

Appendix A
Cumulative Well Data

Ida Wimberly Cumulative Well Data

Monitor Well #1

Contaminant	WQCC Standard	Initial Test 12/17/95	Test Date 8/25/98	Test Date 6/17/99	Test Date 9/21/99
Aluminum	5.0 ppm	<0.2 ppm	n/a	n/a	n/a
Arsenic	0.1 ppm	<0.1 ppm	n/a	n/a	n/a
Barium	1.0 ppm	<1.0 ppm	n/a	n/a	n/a
Boron	0.75 ppm	<0.75 ppm	n/a	n/a	n/a
Cadmium	0.01 ppm	<0.01 ppm	n/a	n/a	n/a
Chloride	250.0 ppm	1580 ppm	1839 ppm	1610 ppm	2231 ppm
Chromium	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Cobalt	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Copper	1.0 ppm	<0.1 ppm	n/a	n/a	n/a
Iron	1.0 ppm	.388 ppm	n/a	n/a	n/a
Lead	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Manganese	0.2 ppm	0.345 ppm	n/a	n/a	n/a
Mercury	0.002 ppm	<0.02 ppm	n/a	n/a	n/a
Molybdenum	1.0 ppm	<0.2 ppm	n/a	n/a	n/a
Nickel	0.2 ppm	<0.2 ppm	n/a	n/a	n/a
Selenium	0.05 ppm	<0.1 ppm	n/a	n/a	n/a
Silver	0.05 ppm	<0.1 ppm	n/a	n/a	n/a
Sulfate	600 ppm	1050 ppm	305 ppm	n/a	455 ppm
Zinc	10.0 ppm	<0.2 ppm	n/a	n/a	n/a
TDS	1000 ppm	3480 ppm	4380 ppm	4560 ppm	4520 ppm
pH	> 6 & <9	5.58	6.384	n/a	7.19 ppm
TPH	N/A	n/a	42.9 ppm	n/a	2.76 ppm
Benzene	0.01 ppm	<.002 ppm	<.002 ppm	n/a	<.002 ppm
Toluene	0.75 ppm	<.002 ppm	<.002 ppm	n/a	<.002 ppm
E. Benzene	0.75 ppm	<.002 ppm	<.002 ppm	n/a	<.002 ppm
Total Xylenes	0.62 ppm	<.006 ppm	<.006 ppm	n/a	<.006 ppm

Monitor Well #2

Contaminant	WQC Standard	Initial Test 12/17/97	Test Date 8/25/98	Test Date 6/17/99	Test Date 9/24/99
Aluminum	5.0 ppm	<0.2 ppm	n/a	n/a	n/a
Arsenic	0.1 ppm	<0.1 ppm	n/a	n/a	n/a
Barium	1.0 ppm	<1.0 ppm	n/a	n/a	n/a
Boron	0.75 ppm	<0.75 ppm	n/a	n/a	n/a
Cadmium	0.01 ppm	<0.01 ppm	n/a	n/a	n/a
Chloride	250.0 ppm	6200 ppm	2731 ppm	3890 ppm	6590 ppm
Chromium	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Cobalt	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Copper	1.0 ppm	<0.1 ppm	n/a	n/a	n/a
Iron	1.0 ppm	<.2 ppm	n/a	n/a	n/a
Lead	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Manganese	0.2 ppm	0.343 ppm	n/a	n/a	n/a
Mercury	0.002 ppm	<0.02 ppm	n/a	n/a	n/a
Molybdenum	1.0 ppm	<0.2 ppm	n/a	n/a	n/a
Nickel	0.2 ppm	<0.2 ppm	n/a	n/a	n/a
Selenium	0.05 ppm	<0.1 ppm	n/a	n/a	n/a
Silver	0.05 ppm	<0.1 ppm	n/a	n/a	n/a
Sulfate	600 ppm	1160 ppm	426 ppm	n/a	666 ppm
Zinc	10.0 ppm	<0.2 ppm	n/a	n/a	n/a
TDS	1000 ppm	10490 ppm	12240 ppm	7490 ppm	14270 ppm
pH	> 6 & <9	7.84	6.303	n/a	6.88
TPH	N/A	n/a	14.0 ppm	10.3 ppm	4.27 ppm
Benzene	0.01 ppm	<.002 ppm	<.002 ppm	<.002 ppm	.003 ppm
Toluene	0.75 ppm	<.002 ppm	<.002 ppm	<.002 ppm	<.002 ppm
E. Benzene	0.75 ppm	<.002 ppm	<.002 ppm	<.002 ppm	<.002 ppm
Total Xylenes	0.62 ppm	<.006 ppm	<.006 ppm	<.006 ppm	<.006 ppm

Monitor Well #3

Contaminant	WQCC Standard	Initial Test 12/17/97	Test Date 8/25/98	Test Date 6/15/99	Test Date 9/24/99
Aluminum	5.0 ppm	<0.3 ppm	n/a	n/a	n/a
Arsenic	0.1 ppm	<0.1 ppm	n/a	n/a	n/a
Barium	1.0 ppm	<1.0 ppm	n/a	n/a	n/a
Boron	0.75 ppm	<0.75 ppm	n/a	n/a	n/a
Cadmium	0.01 ppm	<0.01 ppm	n/a	n/a	n/a
Chloride	250.0 ppm	8500 ppm	4124 ppm	7570 ppm	5374 ppm
Chromium	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Cobalt	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Copper	1.0 ppm	<0.1 ppm	n/a	n/a	n/a
Iron	1.0 ppm	<2 ppm	n/a	n/a	n/a
Lead	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Manganese	0.2 ppm	0.440 ppm	n/a	n/a	n/a
Mercury	0.002 ppm	<0.02 ppm	n/a	n/a	n/a
Molybdenum	1.0 ppm	<0.2 ppm	n/a	n/a	n/a
Nickel	0.2 ppm	<0.2 ppm	n/a	n/a	n/a
Selenium	0.05 ppm	<0.1 ppm	n/a	n/a	n/a
Silver	0.05 ppm	<0.1 ppm	n/a	n/a	n/a
Sulfate	600 ppm	1280 ppm	279 ppm	n/a	397 ppm
Zinc	10.0 ppm	<0.2 ppm	n/a	n/a	n/a
TDS	1000 ppm	15300 ppm	8840 ppm	15180 ppm	10330 ppm
pH	> 6 & <9	7.77	6.64	n/a	6.91
TPH	N/A	n/a	24.6 ppm	n/a	n/a
Benzene	0.01 ppm	<.002 ppm	<.002 ppm	<.002 ppm	.005 ppm
Toluene	0.75 ppm	<.002 ppm	<.002 ppm	<.002 ppm	<.002 ppm
E. Benzene	0.75 ppm	<.002 ppm	<.002 ppm	<.002 ppm	<.002 ppm
Total Xylenes	0.62 ppm	<.006 ppm	<.006 ppm	<.006 ppm	<.006 ppm

Monitor Well #4

Contaminant	WQCC Standard	Initial Test 8/10/98	Test Date 8/25/98	Test Date 6/17/00	Test Date 9/24/00
Aluminum	5.0 ppm	<0.3 ppm	n/a	n/a	n/a
Arsenic	0.1 ppm	<0.1 ppm	n/a	n/a	n/a
Barium	1.0 ppm	<1.0 ppm	n/a	n/a	n/a
Boron	0.75 ppm	<0.75 ppm	n/a	n/a	n/a
Cadmium	0.01 ppm	<0.01 ppm	n/a	n/a	n/a
Chloride	250.0 ppm	9641 ppm	6910 ppm	4680 ppm	14600 ppm
Chromium	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Cobalt	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Copper	1.0 ppm	<0.1 ppm	n/a	n/a	n/a
Iron	1.0 ppm	<.2 ppm	n/a	n/a	n/a
Lead	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Manganese	0.2 ppm	0.440 ppm	n/a	n/a	n/a
Mercury	0.002 ppm	<0.02 ppm	n/a	n/a	n/a
Molybdenum	1.0 ppm	<0.2 ppm	n/a	n/a	n/a
Nickel	0.2 ppm	<0.2 ppm	n/a	n/a	n/a
Selenium	0.05 ppm	<0.1 ppm	n/a	n/a	n/a
Silver	0.05 ppm	<0.1 ppm	n/a	n/a	n/a
Sulfate	600 ppm	159 ppm	335 ppm	n/a	488 ppm
Zinc	10.0 ppm	<0.2 ppm	n/a	n/a	n/a
TDS	1000 ppm	13580 ppm	13960 ppm	9460 ppm	20020 ppm
pH	> 6 & <9	6.69	6.64	n/a	7.04
TPH	N/A	<1.0 ppm	11.8 ppm	n/a	3.27 ppm
Benzene	0.01 ppm	0.033 ppm	0.046 ppm	0.003 ppm	0.033 ppm
Toluene	0.75 ppm	<.002 ppm	<.002 ppm	<.002 ppm	<.002 ppm
E. Benzene	0.75 ppm	<.007 ppm	.012 ppm	<.002 ppm	0.006 ppm
Total Xylenes	0.62 ppm	<.006 ppm	<.006 ppm	<.006 ppm	<.006 ppm

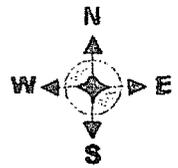
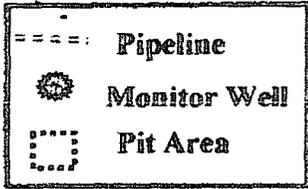
Monitor Well #5

Contaminant	WQCC Standard	Initial Test 8/10/98	Test Date 8/25/98	Test Date 6/17/99	Test Date 9/24/99
Aluminum	5.0 ppm	<0.3 ppm	n/a	n/a	n/a
Arsenic	0.1 ppm	<0.1 ppm	n/a	n/a	n/a
Barium	1.0 ppm	<1.0 ppm	n/a	n/a	n/a
Boron	0.75 ppm	<0.75 ppm	n/a	n/a	n/a
Cadmium	0.01 ppm	<0.01 ppm	n/a	n/a	n/a
Chloride	250.0 ppm	1950 ppm	2396 ppm	2090 ppm	2535 ppm
Chromium	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Cobalt	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Copper	1.0 ppm	<0.1 ppm	n/a	n/a	n/a
Iron	1.0 ppm	<2 ppm	n/a	n/a	n/a
Lead	0.05 ppm	<0.05 ppm	n/a	n/a	n/a
Manganese	0.2 ppm	0.440 ppm	n/a	n/a	n/a
Mercury	0.002 ppm	<0.02 ppm	n/a	n/a	n/a
Molybdenum	1.0 ppm	<0.2 ppm	n/a	n/a	n/a
Nickel	0.2 ppm	<0.2 ppm	n/a	n/a	n/a
Selenium	0.05 ppm	<0.1 ppm	n/a	n/a	n/a
Silver	0.05 ppm	<0.1 ppm	n/a	n/a	n/a
Sulfate	600 ppm	138 ppm	274 ppm	n/a	429 ppm
Zinc	10.0 ppm	<0.2 ppm	n/a	n/a	n/a
TDS	1000 ppm	3790 ppm	5430 ppm	5300 ppm	5100 ppm
pH	> 6 & <9	7.14	7.216	n/a	7.28
TPH	N/A	<1.0 ppm	11.0 ppm	n/a	1.26 ppm
Benzene	0.01 ppm	<.002 ppm	<.002 ppm	n/a	<.002 ppm
Toluene	0.75 ppm	<.002 ppm	<.002 ppm	n/a	<.002 ppm
E. Benzene	0.75 ppm	<.002 ppm	<.002 ppm	n/a	<.002 ppm
Total Xylenes	0.62 ppm	<.006 ppm	<.006 ppm	n/a	<.006 ppm

Monitor Well #6

Contaminant	WQCC Standard	Initial Test 8/11/98	Test Date 8/25/98	Test Date 6/17/99	Test Date 9/24/99
Aluminum	5.0 ppm	n/a	n/a	n/a	n/a
Arsenic	0.1 ppm	n/a	n/a	n/a	n/a
Barium	1.0 ppm	n/a	n/a	n/a	n/a
Boron	0.75 ppm	n/a	n/a	n/a	n/a
Cadmium	0.01 ppm	n/a	n/a	n/a	n/a
Chloride	250.0 ppm	29600 ppm	24186 ppm	25500 ppm	42583 ppm
Chromium	0.05 ppm	n/a	n/a	n/a	n/a
Cobalt	0.05 ppm	n/a	n/a	n/a	n/a
Copper	1.0 ppm	n/a	n/a	n/a	n/a
Iron	1.0 ppm	n/a	n/a	n/a	n/a
Lead	0.05 ppm	n/a	n/a	n/a	n/a
Manganese	0.2 ppm	n/a	n/a	n/a	n/a
Mercury	0.002 ppm	n/a	n/a	n/a	n/a
Molybdenum	1.0 ppm	n/a	n/a	n/a	n/a
Nickel	0.2 ppm	n/a	n/a	n/a	n/a
Selenium	0.05 ppm	n/a	n/a	n/a	n/a
Silver	0.05 ppm	n/a	n/a	n/a	n/a
Sulfate	600 ppm	n/a	750 ppm	1200 ppm	1428 ppm
Zinc	10.0 ppm	n/a	n/a	n/a	n/a
TDS	1000 ppm	58260 ppm	58260 ppm	53980 ppm	71000 ppm
pH	> 6 & < 9	n/a	6.829	n/a	6.74
TPH	N/A	<1.0 ppm	6.8 ppm	n/a	1.88 ppm
Benzene	0.01 ppm	0.044 ppm	0.007 ppm	n/a	0.003 ppm
Toluene	0.75 ppm	0.004 ppm	<.002 ppm	n/a	<.002 ppm
E. Benzene	0.75 ppm	<.002 ppm	<.002 ppm	n/a	<.002 ppm
Total Xylenes	0.62 ppm	0.009 ppm	<.006 ppm	n/a	<.006 ppm

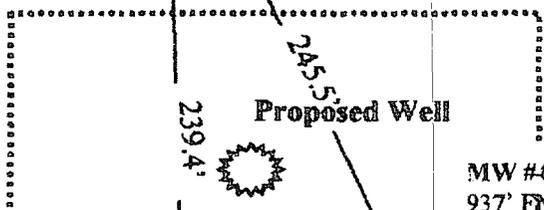
Appendix B
Site Plan



MW #5
 693' FNL
 1277' FWL
 TOW 3002.69'



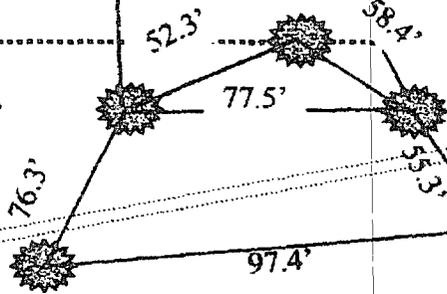
MW #1
 742' FNL
 1406' FWL
 TOW 3002.56'



MW #4
 937' FNL
 1449' FWL
 TOW 3002.36'

MW #2
 981' FNL
 1420' FWL
 TOW 3002.36'

MW #3
 970' FNL
 1497' FWL
 TOW 3002.30'



MW #7
 1056' FNL
 14366' FWL
 TOW 3002.25'

MW #6
 1017' FNL
 1526' FWL
 TOW 3002.06'

Section 25,
 Township 25 South
 Range 37 East N.M.P.M.

ARCO Permian

Site Plan
 South Justis F-230
 Monitor Wells

Safety & Environmental
 Solutions, Inc.
 Hobbs, New Mexico



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 22, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. P-274-520-636

Ms. Margaret Lowe
Arco Permian
P.O. Box 1610
Midland, Texas 79702

**RE: GROUND WATER/SOIL INVESTIGATION
SOUTH JUSTIS UNIT F-230**

Dear Ms. Lowe:

The New Mexico Oil Conservation Division (OCD) has reviewed Arco Permian's (Arco) February 10, 1999 correspondence and 2 accompanying undated documents titled "ARCO PERMIAN SOUTH JUSTIS UNIT F-230, INSTALLATION OF ADDITIONAL MONITOR WELLS AND INVESTIGATION RESULTS, LEA COUNTY, NEW MEXICO" and "ARCO PERMIAN SOUTH JUSTIS UNIT F-230, IDA WIMBERLY LEASE, WORK PLAN, VADOSE ZONE REMEDIATION, LEA COUNTY, NEW MEXICO". These documents, which were submitted on behalf of Arco by their consultant Safety & Environmental Solutions, Inc, contain the results of Arco's investigation of soil and ground water contamination related to the former use of an unlined pit at Arco's South Justis Unit F-230 located in Unit C, Section 25, T25S, R37E, Lea County, New Mexico. The documents also contain a work plan for capping and leaving existing soil contamination in place on the assumption that hydrocarbons will not migrate from the pit.

A review of the above referenced documents and prior reports on the site shows that hydrocarbons have already migrated from the pit into ground water and contaminated ground water in excess of New Mexico Water Quality Control Commission (WQCC) ground water standards. Ground water contamination at the site will not be abated as long as a source of contaminants still exists in the soils overlying the ground water. Therefore, the above referenced work plan to not remediate the source of the contamination and cap the pit is denied. The OCD requires that Arco submit an alternate work plan to the OCD Santa Fe Office by April 30, 1999 with a copy provided to the OCD Hobbs District Office. The work plan shall include a soil and ground water remediation plan as well as a plan for monitoring ground water quality in all site monitor wells.

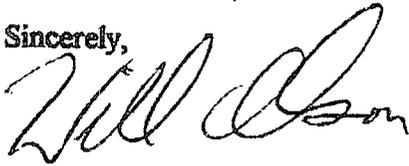
In addition, the investigations have shown that salts exist in the pit soils and have migrated from the pit to the ground water. Arco concludes that the source of these salts is an adjacent produced water

Ms. Margaret Lowe
March 22, 1999
Page 2

pipeline. In order to assess whether the pit or the pipeline is the source of this contamination please provide the OCD with information on the types of wastes which were placed in the pit, the name of the operator of the pipeline and any evidence of releases from the pipeline. Please provide this information along with the above required work plan.

If you have any questions, please call me at (505) 827-7154.

Sincerely,



William C. Olson
Hydrologist
Environmental Bureau

xc: OCD Hobbs District Office
Beth Aldrich, Safety & Environmental Solutions, Inc.

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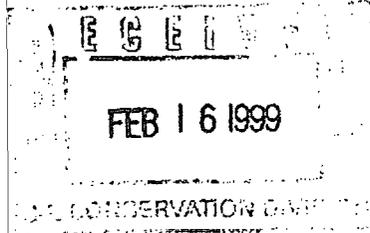
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Special Delivery Fee	
Restricted Delivery Fee	
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Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
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PS Form 3800, April 1995

Safety & Environmental Solutions, Inc.

February 10, 1999

Mr. Bill Olsen
New Mexico Oil Conservation Division
2040 S. Pacheco Street
Santa Fe, New Mexico 87505



Dear Mr. Olsen:

Please find enclosed the corrected reports for the Arco Permian South Justis Monitor well installation in Lea County, New Mexico. Also enclosed in the proposed Work Plan for Vadose Zone Remediation at the pit. This work plan will be implemented upon your approval.

If you have any questions or comments, please call. Thank you.

Sincerely,

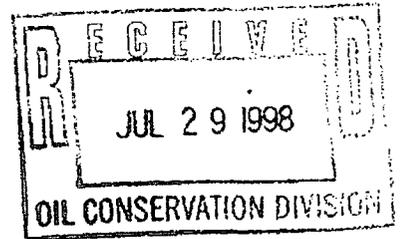
Beth Aldrich

BA/nh
enclosure

Safety & Environmental Solutions, Inc.

July 23, 1998

Mr. Bill Olsen
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505



Dear Mr. Olsen:

As agreed to in our conversation on July 23, 1998, your office will receive the Additional Monitor Well Investigation Results report for the Arco Permian South Justis Unit F-230 by September 4, 1998. This extension is due to the problems encountered with obtaining a drilling unit. We are tentatively scheduled to drill these monitor wells the week of August 10, 1998.

If you have any questions please don't hesitate to call. Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Beth Aldrich".

Beth A. Aldrich for
Bob Allen, President
SES, Inc.

Cc: Margaret Lowe
Larry Henson

BA/baa



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

June 10, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. P-235-437-285

Ms. Margaret Lowe
Arco Permian
P.O. Box 1610
Midland, Texas 79702

**RE: GROUND WATER INVESTIGATIONS
SOUTH JUSTIS UNIT F-230**

Dear Ms. Lowe:

The New Mexico Oil Conservation Division (OCD) has reviewed the following Arco Permian (Arco) documents which were submitted on behalf of Arco by their consultant Safety & Environmental Solutions, Inc.:

- December 1997 "ARCO PERMIAN SOUTH JUSTIS UNIT F-230, INSTALLATION OF MONITOR WELLS AND INVESTIGATION RESULTS, LEA COUNTY, NEW MEXICO" which was received by the OCD on March 2, 1998.
- April 28, 1998 "ARCO PERMIAN SOUTH JUSTIS UNIT F-230, AMENDED WORK PLAN, INVESTIGATION OF POSSIBLE GROUNDWATER IMPACT, LEA COUNTY, NEW MEXICO".

These documents contain the results of Arco's investigation of the soil and ground water contamination and an amended work plan for additional investigations of the extent of ground water contamination related to Arco's activities at the South Justis Unit F-230 located in Unit C, Section 25, T25S, R37E, Lea County, New Mexico.

The above referenced work plan is approved with the following conditions:

1. Ground water from all of the monitor wells will be sampled and analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), cations and anions and total dissolved solids (TDS) using EPA approved methods and quality assurance/quality control procedures.

Ms. Margaret Lowe
June 10, 1998
Page 2

2. Arco will submit a report on the investigation actions to the OCD by August 10, 1998. The report will contain:
 - a. A description of all activities conducted including conclusions and recommendations.
 - b. A site map showing the monitor well locations and other pertinent site features.
 - c. A ground water potentiometric map created using the water table elevations from all site monitor wells. The map will show the direction and magnitude of the hydraulic gradient at the site.
 - d. Geologic logs and well completion diagrams for all site monitor wells.
 - e. A summary of the water quality sampling analyses including copies of the laboratory analytical results and the associated quality assurance/quality control data.
 - f. The disposition of all wastes generated.
3. Arco will notify the OCD at least 48 hours prior to all scheduled activities such that the OCD has the opportunity to witness the activities and split samples.

Pleased be advised that OCD approval does not relieve Arco of liability if the work plan fails to adequately define the extent of contamination related to Arco's activities. In addition, OCD approval does not relieve Arco of responsibility for compliance with any other federal, state or local laws and regulations.

If you have any questions, please call me at (505) 827-7154.

Sincerely,



William C. Olson
Hydrogeologist
Environmental Bureau

xc: Wayne Price, OCD Hobbs District Office
Bob Allen, Safety & Environmental Solutions, Inc.

Z 235 437 285

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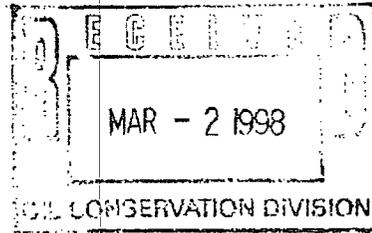
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PS Form 3800, April 1995

Safety & Environmental Solutions, Inc.

February 25, 1998

Mr. Bill Olsen
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505



Dear Mr. Olsen:

Please find enclosed an Installation of Monitor Wells and Investigation Results report for your file for Arco South Justis Unit F-23. Mr. Allen would appreciate your perusal and response as quickly as possible to discuss further exploration methods on this project.

If you have any questions please don't hesitate to call. Thank you.

Sincerely,

Beth A. Aldrich for
Bob Allen, President
SES, Inc.

Enclosures

BA/baa



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

November 25, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-410-431-232

Ms. Margaret Lowe
Arco Permian
P.O. Box 1610
Midland, Texas 79702

**RE: GROUND WATER INVESTIGATION
SOUTH JUSTIS UNIT F-230**

Dear Ms. Lowe:

The New Mexico Oil Conservation Division (OCD) has reviewed Arco Permian's (Arco) November 11, 1997 "ARCO PERMIAN SOUTH JUSTIS UNIT F-230, WORK PLAN, INVESTIGATION OF POSSIBLE GROUNDWATER IMPACT, LEA COUNTY, NEW MEXICO" which was submitted on behalf of Arco by their consultant Safety & Environmental Solutions, Inc. This document contains Arco's work plan to determine the extent of ground water contamination related to Arco's activities at the South Justis Unit F-230 located in Unit C, Section 25, T25S, R37E, Lea County, New Mexico.

The above referenced work plan is approved with the following conditions:

1. Ground water from all of the monitor wells will be sampled and analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), polynuclear aromatic hydrocarbons, Water Quality Control Commission (WQCC) metals and cations and anions using EPA approved methods and quality assurance/quality control procedures.
2. Arco will submit a report on the investigation actions to the OCD by January 23, 1997. The report will contain:
 - a. A description of all activities conducted including conclusions and recommendations.
 - b. A map showing the monitor well locations and the direction and magnitude of the hydraulic gradient and other pertinent site features.
 - c. Geologic logs and well completion diagrams for each monitor well.

Ms. Margaret Lowe
November 25, 1997
Page 2

- d. The laboratory analytical results of all soil and water quality sampling including the quality assurance/quality control data.
 - e. The disposition of all wastes generated.
3. Arco will notify the OCD at least 48 hours prior to all scheduled activities such that the OCD has the opportunity to witness the activities and split samples.

PLEASED be advised that OCD approval does not relieve Arco of liability if the work plan fails to adequately define the extent of contamination related to Arco's activities. In addition, OCD approval does not relieve Arco of responsibility for compliance with any other federal, state or local laws and regulations.

If you have any questions, please call me at (505) 827-7154.

Sincerely,



William C. Olson
Hydrogeologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor
Bob Allen, Safety & Environmental Solutions, Inc.

P 410 431 232

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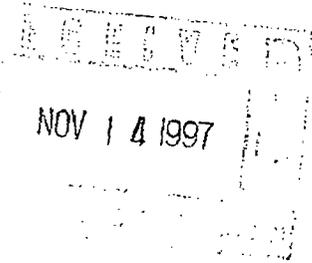
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PS Form 3800, April 1995

Safety & Environmental Solutions, Inc.

November 11, 1997

Mr. Roger Anderson
New Mexico Oil Conservation Division
2040 S. Pacheco Street
Santa Fe, New Mexico 87505



Dear Mr. Anderson:

Please consider this letter as your formal notification of a possible groundwater impact by hydrocarbons in Unit C of Section 25 Township 25S Range 37E in Lea County, New Mexico. This location is an abandoned pit operated by Arco Permian.

I have enclosed a work plan for the initial investigation of this contamination and will pursue the full delineation of contamination after analysis of the results of the initial investigation.

Please consider the work plan as the first phase of the work to be done on this project. If the plan meets with your approval, kindly contact me by phone as the scheduling of equipment in this area has become a problem. This work plan will be implemented immediately upon your approval and successful scheduling of the necessary equipment.

Thank you for your consideration in this matter.

Sincerely,

A handwritten signature in cursive script that reads "Bob Allen".

Bob Allen REM
President

BA/nh
enclosure

MEMORANDUM OF MEETING OR CONVERSATION

<input checked="" type="checkbox"/> Telephone	<input type="checkbox"/> Personal	Time 9:19 AM	Date 10/29/97
<u>Originating Party</u> Bob Allen - SAFETY & ENVIR. SVCS		<u>Other Parties</u> R. ANDERSON	

Subject
GW CONTAMINATION

Discussion
While prospecting a pit for Arco Permiian at UL C Sec 25 25S 37E free oil was encountered at 55 feet. GW is estimated at 65 feet. TPH at 50 feet was 10000 ppm. SVCS will submit a workplan.

Conclusions or Agreements

Distribution
Bill Olson

Signed
R. Anderson