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REPORTS

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January 5, 2011

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

RE:

Plains Pipeline, L.P. 14-inch Vac to Jal Legacy Site

NMOCD Reference # 1RP-2162

Unit Letter F of Section 25, Township 25 South, Range 37 East

Lea County, New Mexico

Dear Mr. Hansen:

Plains Pipeline, L.P. is pleased to submit the attached *Remediation Summary and Site Closure Request*, dated November 2010, for the 14-inch Vac to Jal Legacy site. This site is located in Section 25 of Township 25 South, and Range 37 East of Lea County, New Mexico. This document details the soil remediation activities performed at the site.

Should you have any questions or comments, please contact me at (575) 441-1099.

Sincerely,

Jason Henry

Remediation Coordinator

Plains Pipeline, L.P.

. CC: Larry Johnson, NMOCD, Hobbs Office

Enclosure

Basin Environmental Service Technologies, LLC

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Lovington, New Mexico 88260
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Office: (575) 396-2378 Fax: (575) 396-1429



REMEDIATION SUMMARY RECEIVED

AND SITE CLOSURE REQUEST

APR 21 2011

PLAINS PIPELINE, LP (231735) 14-Inch Vac to Jal Legacy Lea County, New Mexico Plains SRS # 2009-092 Oil Conservation Division 1220 S. St. Francis Drive Santa Fe, NM 87505

UNIT LTR "F" (SE ½/NW ½), Section 25, Township 25 South, Range 37 East Latitude 32° 06' 10.7" North, Longitude 103° 07' 10.3" West NMOCD Reference # 1RP-2162

Prepared For:

Plains Pipeline, LP 333 Clay Street Suite 1600 Houston, Texas 77002

Prepared By:
Basin Environmental Service Technologies, LLC
3100 Plains Highway
Lovington, New Mexico 88260

November 2010

Ben J. Arguijo

Project Manager

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1.0 INTRODUCTION AND BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin), on behalf of Plains Pipeline, LP (Plains), has prepared this "Remediation Summary and Site Closure Request" 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, LP. 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 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.

2.0 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.

A search of the water well database maintained by the NMOSE indicated there are no water wells within 1,000 feet of 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 this criteria.

The NMOCD guidelines indicate the 14-Inch Vac to Jal Legacy release site had an initial ranking score of twenty (20), which would set the remediation levels for the site at 10 mg/Kg for benzene, 50 mg/Kg for BTEX, and 100 mg/Kg for TPH. However, based on discussions with the NMOCD Hobbs District representative, site-specific risk-based remediation levels were established for the site. The remediation levels established for the site were 10 mg/Kg for benzene, 50 mg/Kg for BTEX, and 100 mg/Kg for TPH for the sidewalls, and 10 mg/Kg for benzene, 50 mg/Kg for BTEX, and 5,000 mg/Kg for TPH for the backfill material. Due to the close proximity of an active injection well and several pipelines, the NMOCD Hobbs District representative agreed to allow contaminant concentrations above these levels in several places on the floor of the excavation since the quality of the groundwater in this area was considered to be non-abatable.

3.0 DISTRIBUTION OF CONTAMINANTS IN THE UNSATURATED ZONE

3.1 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 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 in 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 EPA Method 300. The analytical results indicated a chloride concentration of 796 mg/kg. Table 1 summarizes the "Concentrations of Benzene, BTEX, TPH & 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 Method SW 846-8021b and EPA Method 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".

Four (4) soil samples (Main Exc. Floor #1, Main Exc. Floor #2, Main Exc. Floor #3 and Main Exc. Floor #4) were also 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 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 these results, the horizontal extent of impacted soils appeared to have been delineated in all directions.

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 and 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 @ 50' to 79.4979 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 @ 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'.

Groundwater was encountered at approximately fifty four (54) feet drilling depth, or approximately sixty four (64) feet bgs, in SB-1. 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 @ 35'. 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'.

Groundwater was encountered at approximately fifty four (54) feet drilling depth, or approximately sixty four (64) feet bgs, in soil boring SB-2. 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 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 and advanced 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'.

Groundwater was encountered at approximately sixty four (64) feet bgs in soil boring SB-3. 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 also 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 of 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', SP #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. 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. 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 and advanced 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. 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 soil boring SB #4. 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 and advanced 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. 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 soil boring SB #5. 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 26, 2010, Plains submitted a "Remediation Summary and Proposed Soil Closure Strategy" (Proposal) to a representative of the NMOCD Hobbs District Office requesting remediation action of levels of 10 mg/kg (ppm) for Benzene, 50 mg/kg (ppm) for BTEX, and 5,000 mg/kg (ppm) for TPH, as detailed in Section 2.0, "NMOCD Site Classification", above. The Proposal was approved by the NMOCD representative, and the proposed closure activities commenced.

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

On June 3, 2010, Basin resumed soil activities at the site. The stockpiled soil was mechanically screened to separate the large rock from the soil. The separated rock was placed in the floor of the excavation and leveled, the soil was placed in 500 cubic yard stockpiles, and soil samples were collected from each stockpile and submitted to the laboratory for analysis.

On August 4, 2010, two (2) five-point composite soil samples (Screened SP #1 and Screened SP #2) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated benzene concentrations ranged from 0.173 mg/kg for soil sample Screened SP #1 to 0.0297 mg/kg for soil sample Screened SP #2. BTEX concentrations ranged from 2.4404 mg/kg for soil sample Screened SP #1 to 3.722 mg/kg for soil sample Screened SP #2 to 5,011 mg/kg for soil sample Screened SP #1. Soil represented by soil samples Screened SP #1 and Screened SP #2 was deemed suitable for use as backfill material.

On August 17, 2010, five (5) five-point composite soil samples (Screened SP #3, Screened SP #4, Screened SP #5, Screened SP #6, and Screened SP #7) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 3.436 mg/kg for soil sample Screened SP #5 to 14.617 mg/kg for soil sample Screened SP #6. TPH concentrations ranged from 3,860 mg/kg for soil sample Screened SP #3. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil sample Screened SP #3 was re-blended on-site. Soil represented by soil samples Screened SP #4, Screened SP #5, Screened SP #6, and Screened SP #7 was deemed suitable for use as backfill material.

On August 30, 2010, three (3) five-point composite soil samples (Screened SP #8, Screened SP #9, and Screened SP #10) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 15.642 mg/kg for soil sample Screened SP #8 to 27.55 mg/kg for soil sample Screened SP #10. TPH concentrations ranged from 2,791 mg/kg for soil sample Screened SP #8 to 4,339 mg/kg for soil sample Screened SP #9. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil samples Screened SP #8, Screened SP #9, and Screened SP #10 was deemed suitable for use as backfill material.

On September 7, 2010, four (4) five-point composite soil samples (Screened SP #3A, Screened SP #11, Screened SP #12, and Screened SP #13) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 0.5841 mg/kg for soil sample Screened SP #3A to 5.451 mg/kg for soil sample Screened SP #13. TPH concentrations ranged from 2,786 mg/kg for soil sample Screened SP #11 to 4,153 mg/kg for soil sample Screened SP #13. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil samples Screened SP #3A, Screened SP #11, Screened SP #12, and Screened SP #13 was deemed suitable for use as backfill material.

On September 10, 2010, three (3) five-point composite soil samples (Screened SP #14, Screened SP #15, and Screened SP #16) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated benzene concentrations ranged from less than the appropriate laboratory MDL for soil samples Screened SP #15 and Screened SP #16 to 0.011 mg/kg for soil sample Screened SP #14. BTEX concentrations ranged from 1.0392 mg/kg for soil sample Screened SP #14 to 6.41 mg/kg for soil sample Screened SP #15. TPH concentrations ranged from 1,955 mg/kg for soil sample Screened SP #16 to 3,507 mg/kg for soil sample Screened SP #14. Soil represented by soil samples Screened SP #14, Screened SP #15, and Screened SP #16 was deemed suitable for use as backfill material.

On September 16, 2010, three (3) five-point composite soil samples (Screened SP #17, Screened SP #18, and Screened SP #19) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 1.6059 mg/kg for soil sample Screened SP #17 to 2.585 mg/kg for soil sample Screened SP #18. TPH concentrations ranged from 3,365 mg/kg for soil sample Screened SP #17 to 4,210 mg/kg for soil sample Screened SP #19. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil samples Screened SP #17, Screened SP #18, and Screened SP #19 was deemed suitable for use as backfill material.

On September 24, 2010, five (5) five-point composite soil samples (Screened SP #20, Screened SP #21, Screened SP #22, Screened SP #23, and Screened SP #24) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 1.077 mg/kg for soil sample Screened SP #21 to 1.6917 mg/kg for soil sample Screened SP #24. TPH concentrations ranged from 542 mg/kg for soil sample Screened SP #21 to 3,488 mg/kg for soil sample Screened SP #24. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil samples Screened SP #20, Screened SP #21, Screened SP #22, Screened SP #23, and Screened SP #24 was deemed suitable for use as backfill material.

On September 30, 2010, four (4) five-point composite soil samples (Screened SP #25, Screened SP #26, Screened SP #27, and Screened SP #28) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 0.111 mg/kg for soil sample Screened SP #28 to 0.3357 mg/kg for soil sample Screened SP #25. TPH concentrations ranged from 1,204 mg/kg for soil sample Screened SP #28 to 2,007 mg/kg for soil sample Screened SP #27. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil samples Screened SP #25, Screened SP #26, Screened SP #27, and Screened SP #28 was deemed suitable for use as backfill material.

Based on the analytical results, the excavation was backfilled in eighteen inch lifts, compacted, and contoured to fit the surrounding topography.

3.2 Soil Closure Request

Plains has completed the soil closure activities detailed in the "Remediation Summary and Proposed Soil Closure Strategy", dated May 2010. Soil samples collected from the floors and sidewalls of the Main and West excavations were analyzed by an NMOCD-approved laboratory, and concentrations of Benzene, BTEX, and TPH were below the remediation action levels set forth in that document. Representative stockpile soil samples were also collected, analyzed by an NMOCD-approved laboratory, and deemed suitable for backfill material, as documented in this report.

It is Basin's opinion that soil remediation activities are complete and that Plains should request soil closure status for the 14-Inch Vac to Jal Legacy release site.

4.0 DISTRIBUTION OF CONTAMINANTS IN THE SATURATED ZONE

4.1 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 and submitted to the laboratory for analysis. The analytical results of 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 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 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 & Total Dissolved Solids in Groundwater".

On December 22, 2009, groundwater samples were collected from the temporary casing installed in soil boring SB-4 and SB-5. Analytical results of groundwater collected from SB-4 indicated a chloride concentration of 8,580 mg/L and a TDS concentration of 15,700 mg/L. The analytical results of 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 site monitor well (MW-1) was gauged, purged, and sampled on July 6, 2009, October 21, 2009, March 11, 2010, June 4, 2010, September 29, 2010, and November 5, 2010. The monitor well was gauged and purged of a minimum of three (3) well volumes of water or until the well was 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 appropriate 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 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 and 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 ethyl-benzene, total xylenes, and toluene was 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 a 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.

The analytical results of the June 4, 2010, groundwater sampling event indicated a benzene concentration of 0.1407 mg/L, a toluene concentration of 0.0637 mg/L, an ethyl-benzene concentration of 0.0047 mg/L, and a total xylene concentration of 0.0067 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.

The analytical results of the September 29, 2010, groundwater sampling event indicated a benzene concentration of 0.0514 mg/L, a toluene concentration of 0.0278 mg/L, an ethylbenzene concentration of 0.0022 mg/L, and a total xylene concentration of 0.0047 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.

The analytical results of the November 5, 2010, groundwater sampling event indicated a benzene concentration of 0.2795 mg/L, a toluene concentration of 0.1807 mg/L, an ethyl-benzene concentration of 0.0126 mg/L, and a total xylene concentration of 0.0049 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.

4.2 Groundwater Closure Request

Plains installed one (1) monitor well (MW-1) and four (4) soil borings (SB-2 through SB-5) at the site to evaluate the status of the underlying groundwater. Monitor well MW-1 was located in the southern portion of the excavation. Laboratory analytical data indicated chloride and TDS concentrations exceeded NMOCD regulatory standards.

Soil boring SB-2 was located in the northwest portion of the excavation. Temporary casing was installed in the soil boring, and a groundwater sample was collected. Laboratory analytical results indicated chloride and TDS concentrations exceeded NMOCD regulatory standards.

Soil boring SB-3 was located to the north of the release point adjacent to the Plains pipeline. Temporary casing was installed in the soil boring, and a groundwater sample was collected. Laboratory analytical results indicated chloride and TDS concentrations exceeded NMOCD regulatory standards.

Soil boring SB-4 was located approximately two hundred fifty (250) feet north northwest of the site. Temporary casing was installed in the soil boring, and a groundwater sample was collected. Laboratory analytical results indicated chloride and TDS concentrations exceeded NMOCD regulatory standards.

Soil boring SB-5 was located approximately seven hundred fifteen (715) feet north northwest of the site. Temporary casing was installed in the soil boring, and a groundwater sample was collected. Laboratory analytical results indicated chloride and TDS concentrations exceeded NMOCD regulatory standards.

Given that 1.) elevated chloride and TDS concentrations exist in groundwater samples collected up-gradient from the release point, 2.) elevated chloride concentrations are absent in the soil column at the release point, and 3.) Plains lines transmit strictly crude oil, there is a strong probability that the groundwater contamination may be attributed to either an off-site source or naturally occurring concentrations of these contaminants. Upon further investigation, it was discovered that 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). The ARCO Permian Monitor Well Report dated January 2, 2001, showed chloride concentrations exceeding NMOCD regulatory standards and a general groundwater gradient to the southeast.

Laboratory analytical results indicated TDS concentrations in groundwater samples collected from monitor well MW-1 and soil borings SB-2 through SB-5 exceeded 10,000 mg/L. Pursuant to New Mexico Administrative Code (NMAC) Section 20.6.2.4103, the groundwater is non-abatable based on pre-existing conditions, remediation of the groundwater at the 14" Vac to Jal release site is not warranted.

Basin further recommends that Plains request approval to cease groundwater monitoring at the 14" Vac to Jal release site and plug and abandon MW-1. The monitor well will be plugged and abandoned according to NMOSE guidelines by a state-certified water well drilling company. Plains will provide the NMOCD with plugging reports documenting the plugging procedures.

5.0 QA/QC PROCEDURES

5.1 Soil Sampling

Soil Samples were delivered to Xenco Laboratories, Inc., of Odessa, Texas, for BTEX and/or TPH analyses using the methods described below. Soil samples were analyzed for BTEX and/or TPH concentrations within fourteen (14) days following the collection date.

The soil samples were analyzed as follows:

- BTEX concentrations in accordance with EPA Method 8021B, 5030
- TPH concentrations in accordance with modified EPA Method 8015M GRO/DRO

5.2 Groundwater Sampling

The groundwater monitor wells were developed utilizing the Environmental Protection Agency (EPA) protocol of nine (9) well volumes of groundwater or until the monitoring wells are dry using an electrical Grundfos Pump. Within forty-eight hours of development and during subsequent quarterly groundwater sampling events, the monitor wells were measured and purged of approximately three (3) well volumes utilizing an electrical Grundfos Pump. Groundwater samples were collected using a disposable Teflon sampler, stored in clean, glass containers provided by the laboratory, and placed on ice in the field. Purge water was collected in a polystyrene tank and disposed of at a NMOCD-approved disposal facility.

Groundwater samples were delivered to Xenco Laboratories, Inc., of Odessa, Texas, for analysis of BTEX, Chloride, and/or TDS concentrations using the methods described below. All samples were analyzed within approved holding times following the collection date.

- BTEX concentrations in accordance with EPA Method 8021B, 5030
- Chloride concentrations in accordance with EPA Method 300
- TDS in accordance with Method SM2540C

5.3 Decontamination of Equipment

Cleaning of the sampling equipment was the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment was cleaned with Liqui-Nox® detergent and rinsed with distilled water.

5.4 Laboratory Protocol

The laboratory was responsible for proper QA/QC procedures after signing the chain-of-custody form(s). These procedures were either transmitted with the laboratory reports or are on file at the laboratory.

6.0 SITE CLOSURE REQUEST

Basin recommends that Plains request site closure status for the 14-Inch Vac to Jal Legacy release site. The activities conducted at the site met the objectives set forth in the "Remediation Summary and Proposed Soil Closure Strategy". It is recommended that Plains not conduct any further remediation activities at the site.

7.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this "Remediation Summary and Site Closure Request" to the best of its ability. No other warranty, expressed or implied, is made or intended.

Basin Environmental Service Technologies, LLC, has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin Environmental Service Technologies, 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 Service Technologies, LLC, has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin Environmental Service Technologies, 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, LP. 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 Service Technologies, LLC, and/or Plains Pipeline, LP.

8.0 DISTRIBUTION:

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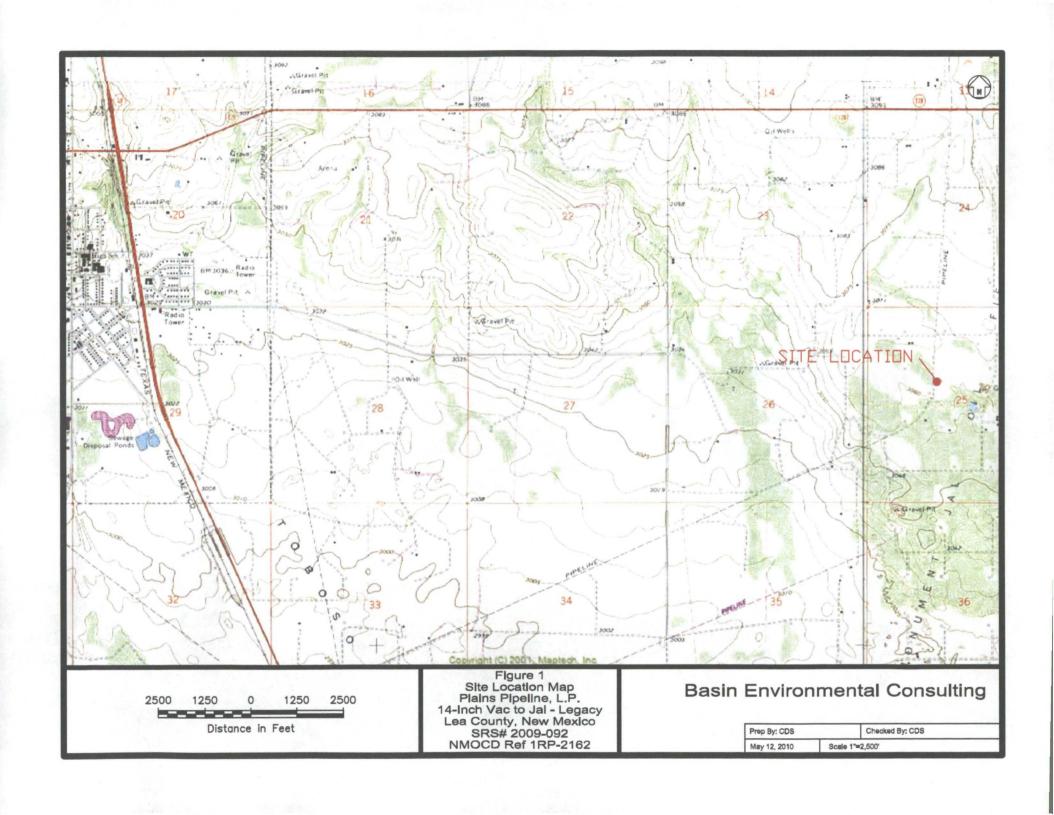
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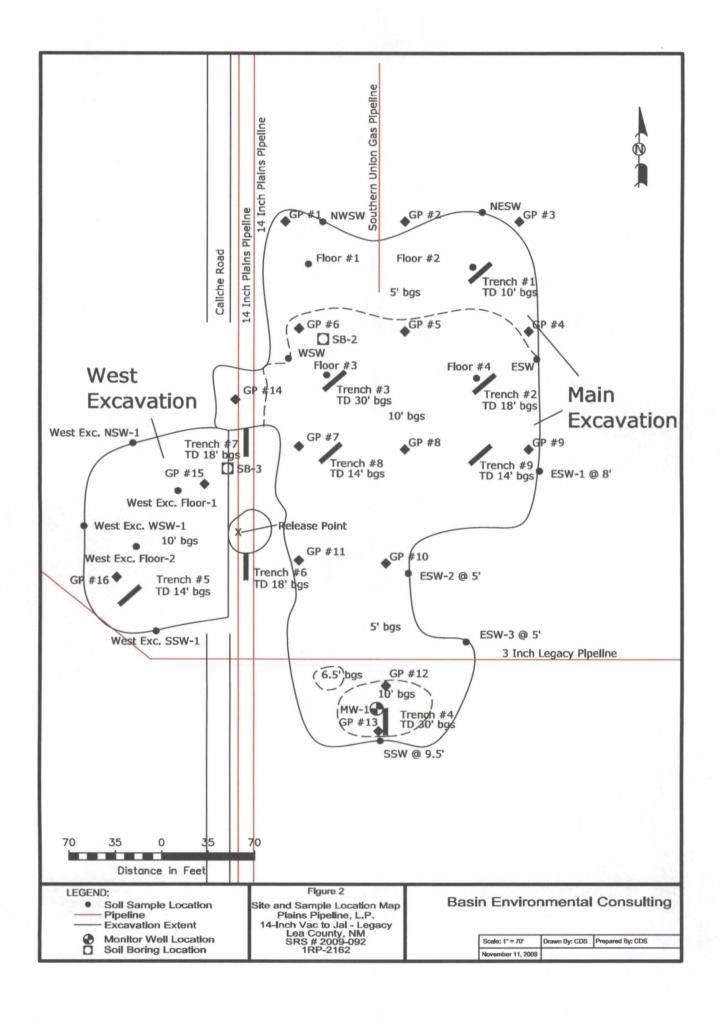
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Figures







CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDES IN SOIL

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

NMOCD REFERENCE NO: 1RP-2162

					METHOD: EPA SW 846-8021B, 5030					ME.	THOD: 801	TOTAL	E 300		
CAMPIC LOCATION	SAMPLE DEPTH	SAMPLE	DATE	SOIL	DENIZENE	TOLLIENE	ETHYL-	M.P	0-	TOTAL	GRO	DRO	ORO	TPH	
SAMPLE LOCATION	(BGS)	DATE	ANALYZED	STATUS	BENZENE (mg/Kg)	TOLUENE	BENZENE	XYLENES	XYLENE	BTEX	C ₆ -C ₁₂	C ₁₂ -C ₂₈	C ₂₈ -C ₃₅	C ₆ -C ₃₅	CHLORIDE
	(603)				(IIIg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
Chloride Baseline	N/A	4/15/2009	4/17/2009	N/A	-		-	-		-	•	•	- "	-	796
1. 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	在外域的	関係に 主教	10000000000000000000000000000000000000	- W. L. W. C. C.	は記録を記れて	ない。金銭は	A STATE OF THE PARTY	27 1 1		さい 人は	ははないはは	数が見いた数	なっちゃっては	高级·美洲出了	場が表示で
Stockpile #1	N/A	5/18/2009	5/27/2009	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	5/18/2009	5/27/2009	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	5/18/2009	5/27/2009	In-Situ	0.0073	0.0354	0.0158	0.0249	0.009	0.0924	18	18.1	<15.4	36.1	-
Main Exc. NESW	4.5 Feet	5/18/2009	5/27/2009	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	5/18/2009	5/27/2009	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	<16.2	<16.2	<16.2	-
Main Exc. ESW	8 Feet	5/18/2009	5/27/2009	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	5/18/2009	5/27/2009	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	5/18/2009	5/27/2009	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	5/18/2009	5/27/2009	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	5/18/2009	5/27/2009	In-Situ	9.459	106.7	84.72	123	47.24	371.119	4,970	7,740	523	13,233	-
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T-1 @ 10' bgs	10 Feet	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	In-Situ	0.0023	0.0088	0.0069	0.0121	0.0052	0.0353	22.3	109	<17.3	131.3	<u> </u>
T-3 @ 12' bgs	12 Feet	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	In-Situ	0.007 <0.1194	0.025 0.6279	0.0085 1.565	0.011 4.657	0.0053	0.0568 9.2509	<18.5 289	59 910	<18.5 81.9	59 1,280,9	•
T-3 @ 26' bgs	26 Feet	5/26/2009	5/31/2009	In-Situ In-Situ	<0.1194	2.587	3.671	6.086	2.401 2.512	9.2509 14.856	420	1,400	118	1,280.9	<u> </u>
T-3 @ 30' bgs	30 Feet	5/26/2009	5/31/2009 5/31/2009	In-Situ	48 18	400.1	211.1	327.2	111	1097.58	13,200	22,300	2,050	37,550	<u> </u>
T-4 @ 12' bgs	12 Feet	5/26/2009 5/26/2009	5/31/2009	In-Situ	8.783	102	63.4	96	33.74	303.923	3,100	4,600	524	8,224	
T-4 @ 14' bgs T-4 @ 18' bgs	14 Feet 18 Feet	5/26/2009	5/31/2009	In-Situ	29.02	277.2	142.5	215,4	73.52	737.64	9,680	14,200	1,340	25,220	
T-4 @ 16 bgs	22 Feet	5/26/2009	5/31/2009	In-Situ	20.63	163.3	80.59	111.1	39.38	415	8,240	13,700	1,130	23,220	
T-4 @ 22 bgs T-4 @ 26' bgs	26 Feet	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	In-Situ	<0.0012	0.0042	0.0018	<0.0024	<0.0013	0.006	<18.3	66.6	<18.3	66.6	
T-7 @ 10 bgs	10 Feet	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	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	5/26/2009	5/31/2009	In-Situ	0.0072	0.3247	0.2975	0.4625	0.247	1.3389	383	3,720	648	4,751	-
T-9 @ 14' bgs	14 Feet	5/26/2009	5/31/2009	In-Situ	0.0062	<0.0023	0.0018	0.0097	0.0072	0.0249	<17.6	69.7	36.3	106	-
Tagel 1 1 1 2 2 2 1 1 1 1	5 3 4		7. 7.	1 177 249 4	* (# 	144	Translage	EN ANDWAR	4 - 400	4,000		5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	中华海湾	F . W. 18	ましたからに いる機
Main Exc. ESW-1 @ 8' bgs	8 Feet	5/28/2009	6/1/2009	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.8	38.8	<168	38.8	-
Main Exc. ESW-2 @ 5' bgs	5 Feet	5/28/2009	6/1/2009	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	1 .

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDES IN SOIL

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

Ī		<u> </u>				METHO	D: EPA SW	46-8021B, 50	030		ME	THOD: 801	5M	TOTAL	E 300
SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	DATE ANALYZED	SOIL STATUS	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)	TPH C ₆ -C ₃₅	CHLORIDE (mg/Kg)
Main Exc. ESW-3 @ 3' bgs	3 Feet	5/28/2009	6/1/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.5	59.9	26.3	(mg/Kg) 86.2	(ilig/itg)
Main Exc. SSW @ 9.5' bgs		5/28/2009	6/1/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<16.6	<16.6	<16.6	<16.6	
Production of the second secon		3/20/2009	0/1/2009	1110110 12882 :	C 200011	4.56% - 1° 5	* 5 T S S S S S S S S S S S S S S S S S S	10.0022	10.00 T	- U.0022	~10.0	## · · · · ·	10.0	T- 10.0	- A - 100 (1881)
SB-1 / MW-1 @ 5	15 feet	7/1/2009	7/10/2009	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	7/1/2009	7/10/2009	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 @ 15	35 Feet	7/1/2009	7/10/2009	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	7/1/2009	7/10/2009	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	7/1/2009	7/10/2009	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	7/1/2009	7/10/2009	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	7/1/2009	7/10/2009	In-Situ	<0.0011	<0.0021	0.0068	0.0094	0.0083	0.0245	25.8	392	27.6	445	179
	(3 m) 3	374 J.J	197.	30 F S	0.0011	.t 1	1,1,1,1	1. de; .	1 % 8 _{1.5}	40,000	20.0	; , ; , , , , , , , , , , , , , , , , ,	337	44.47.7	45
SB-2 @ 5'	15 Feet	7/1/2009	7/14/2009	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	7/1/2009	7/13/2009	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	7/1/2009	7/12/2009	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	7/1/2009	7/10/2009	In-Situ	<0.0010	<0.0021	0.0032	0.0078	0.0035	0.0145	<15.4	57.8	<15.4	57.8	<5.15
SB-2 @ 45'	55 Feet	7/1/2009	7/13/2009	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	7/1/2009	7/12/2009	In-Situ	<0.0011	< 0.0021	<0.0011	<0.0021	<0.0011	<0.0021	19.6	105	<16.0	124.6	471
SB-2 @ 55'	65 Feet	7/1/2009	7/12/2009	In-Situ	<0.0011	<0.0022	< 0.0011	<0.0022	<0.0011	<0.0022	16.8	86.8	<16.8	103.6	952
部。1947年後後の1947年12日、138日	457 NO.	The Mary Mary	THE STATE OF THE STATE OF	188	The Tale of The Tale of The Tale of Ta	a derina	200 700	1 242 77		"我我	1. 1. 2 A.	व , " । १ के व्यू हैं	13 18 13 1 1	一品种的原则:	ことは論語で
SB-3 @ 5'	5 Feet	7/2/2009	7/13/2009	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	7/2/2009	7/14/2009	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	7/2/2009	7/14/2009	In-Situ	<0.5530	2.969	4.529	7.355	2.875	17.728	887	4,560	268	5,715	54.4
SB-3 @ 35'	35 Feet	7/2/2009	7/10/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0010	<15.6	103	<15.6	103	24.8
SB-3 @ 45'	45 Feet	7/2/2009	7/10/2009	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	7/2/2009	7/10/2009	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	7/2/2009	7/10/2009	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	7/2/2009	7/10/2009	In-Situ	<0 0010	<0.0021	0.0038	0.0087	0.0041	0.0166	23.7	126	18.5	168.2	46.1
に対し、では動からに	39	和 语[] 1	77 Jag 4	3 th 1.3 p.	· Marine	o genta	, 433°,	, and	1. 1888. 1	property.	1. 2. 2. 3.	F. 5.	yeles A	いな話れて	7
Treatment Cell #1	Backfill	9/24/2009	9/30/2009	In-Situ_	1.539	31.4	30.15	51.23	21.99	136.31	2,560.0	8,530	220.0	11,310.0	-
The same of the same of the same	1.3	34 T. S	8.00	深台: 和	As Marine Con.	12/10/20	100,78	CF 48.50.00	公司 人	, r 2 4 1 1 1	1	7	温野され	W. M. C.	Take F
West Exc NSW-1	8 Feet	9/30/2009	10/3/2009	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	9/30/2009	10/3/2009	In-Situ	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0022	<18.3	<18.3	<18.3	<18.3	<u> </u>
West Exc. SSW-1	8 Feet	9/30/2009	10/3/2009	In-Situ	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<17.2	20.7	<17.2	20.7	<u> </u>
West Exc. Floor-1	10 Feet	9/30/2009	10/3/2009	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	9/30/2009	10/3/2009	In-Situ	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0024	<18.0	<18.0	<18.0	<18.0	-
Production (1) 10 10 10 10 10 10 10 10 10 10 10 10 10		3 3 16m J. H	75.27	多様のこと	· quagget . or	· w the contract of	水河雪堂	金銭数のよ	The Court of	- 一种意象	F4()。高線		Service Control	("性级学	1.1/2/数据379
GP #1 @ 6'	6 Feet	11/10/2009	11/10/2009	In-Situ	-	-	<u> </u>	-	-	-	<16.1	31.4	<16.1	31.4	119
GP #2 @ Grade	Surface	11/10/2009	11/10/2009	In-Situ	-		ļ <u>.</u>	<u> </u>		-	31.1	522	134	687.1	11.6
GP #3 @ Grade	Surface	11/10/2009	11/10/2009	In-Situ	-			-		-	<15.5	263	74.8	337.8	3,510
GP #4 @ 5'	5 Feet	11/10/2009	11/10/2009	In-Situ	-	-	-	-	<u> </u>	-	<16.3	√19.7	<16.3	19.7	772
GP #5 @ 7'	7 Feet	11/10/2009	11/10/2009	In-Situ		-	-	<u> </u>	<u> </u>		<15.7	62.1	<15.7	62.1	142
GP #6 @ 9'	9 Feet	11/10/2009	11/10/2009	In-Situ		<u> </u>		<u> </u>	<u> </u>	<u> </u>	216	4,190	290	4,696	<5.22
GP #7 @ 9'	9 Feet	11/10/2009	11/10/2009	In-Situ		-	<u> </u>	-	<u> </u>	<u> </u>	<16.2	40.6	<16.2	40.6	71.5

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDES IN SOIL

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

NMOCD REFERENCE NO: 1RP-2162

		Ĭ				METHO	D: EPA SW 8	46-8021B, 50	30		ME.	THOD: 801	5M	TOTAL	E 300
CAMPI E LOCATION	SAMPLE	SAMPLE	DATE	SOIL	DENIZENE	TOLLIENE	ETHYL-	M.P	0-	TOTAL	GRO	DRO	ORO	TPH	
SAMPLE LOCATION	(BGS)	DATE	ANALYZED	STATUS	BENZENE	TOLUENE	BENZENE	XYLENES	XYLENE	BTEX	C ₆ -C ₁₂	C ₁₂ -C ₂₈	C ₂₈ -C ₃₅	C ₆ -C ₃₅	CHLORIDE
	(BGS)	l			(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
GP #8 @ 9'	9 Feet	11/10/2009	11/10/2009	In-Situ	-	-	-	-			<16.5	<16.5	<16.5	<16.5	378
GP #9 @ 10'	10 Feet	11/10/2009	11/10/2009	In-Situ	-	•	-	-	-	,	36.4	286	16.2	338.6	6 72
GP #10 @ 7'	7 Feet	11/10/2009	11/10/2009	In-Situ	-		-	-	-	-	<15.9	· 23.2	<15.9	23.2	16.6
GP #11 @ 7'	7 Feet	11/10/2009	11/10/2009	In-Situ	•	•		-	-	•	<15.4	170	18.6	188.6	21.3
GP #12 @ 10'	10 Feet	11/10/2009	11/10/2009	In-Situ	-	-	-	-	-	-	688	3,670	227	4,585	<5.17
GP #13 @ 10'	10 Feet	11/10/2009	11/10/2009	In-Situ	•	-	•	-	-	-	<17.1	51.9	<17.1	51.9	219
GP #14 @ 12'	12 Feet	11/10/2009	11/10/2009	In-Situ	•	-	•	-	-	-	212	2,920	199	3,331	9.32
GP #15 @ 10'	10 Feet	11/10/2009	11/10/2009	In-Situ	•		-	-	-	-	<16.2	69.7	<16.2	69.7	62.9
GP #16 @ 10'	10 Feet	11/10/2009	11/10/2009	In-Situ	•	-	-	-	-	-	<18.8	<18.8	<18.8	<18.8	9.57
25° (4.5%)	"一种产品"	1 546.74		4			, Y. *	34 F 10 . 1		有机管理 化石	· · · · · · · · · · · · · · · · · · ·		海外。""·	のは必然ない	に決争をつい
SB #4 @ 10'	10 Feet	12/10/2009	12/15/2009	In-Situ	-	-	-	-	-	-		<u> </u>		-	85.3
SB #4 @ 20'	20 Feet	12/10/2009	12/15/2009	In-Situ	-	-	•	-	-	•	-		-		26.8
SB # 4 @ 30'	30 Feet	12/10/2009	12/15/2009	In-Situ	-	-	•	-	-	-	•	-			61.8
SB #4 @ 40'	40 Feet	12/10/2009	12/15/2009	In-Situ	-	-	•	-	-	-	-			-	26.5
SB #4 @ 50'	50 Feet	12/10/2009	12/15/2009	In-Situ	-	-	-	-	-	-	-	-			<5.02
SB #5 @ 10'	10 Feet	12/10/2009	12/15/2009	In-Situ	-	-	-		-	-	-	-			117
SB #5 @ 20'	20 Feet	12/10/2009	12/15/2009	In-Situ		-	-	-	-	-	-	-	•	-	263
SB #5 @ 30'	30 Feet	12/10/2009	12/15/2009	In-Situ	•	-	-		-	-	-	-	-	-	55.5
SB #5 @ 40'	40 Feet	12/10/2009	12/15/2009	In-Situ	-	-	-	-	-	-	-	-	-	-	6.71
SB #5 @ 45'	45 Feet	12/10/2009	12/15/2009	In-Situ	•	-	-	-		-	-	-	-	-	183
The second of the	31.3	1. J. M.				1.00	* e = 5°,	A, 1	key /	1 100	1.3	14	7 4.		· 1等点
Screened SP # 1	N/A	8/4/2010	8/16/2010	In-Situ	0.0173	0.1184	0.3405	1.206	0.7582	2.4404	1260	3550	201	5,011	
Screened SP # 2	N/A	8/4/2010	8/16/2010	In-Situ	0.0297	0.158	0.3963	1.354	1.784	3.722	1320	3400	148	4,868	
が、いは、強強いいは、あいは、		なるを確定し	さんち はれる	The state of	" Mary " Break"	Both of the	the of the ride	8-10 W	~ \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	: Madia -		¥	3.4 2.	1 KT JOHN E.	1. Min 18 4
Screened SP #3	N/A	8/17/2010	8/27/2010	In-Situ	-	-	-	-	-	-	643	5810	1050	7,503	
Screened SP #4	N/A	8/17/2010	8/27/2010	In-Situ	<0.1077	<0.2155	0.46	1.673	1.405	3.538	1120	2840	160	4,120	
Screened SP #5	N/A	8/17/2010	8/27/2010	In-Situ	<0.0217	0.0814	0.3981	1.443	1.513	3.436	1190	2480	190	3,860	
Screened SP #6	N/A	8/17/2010	8/27/2010	In-Situ	<0.108	0.2311	0.9537	6.488	6.944	14.617	1490	2510	195	4,195	
Screened SP #7	N/A	8/17/2010	8/27/2010	In-Situ	<0.1094	<0.2187	0.6792	4.426	4.88	9.985	1290	2510	145	3,945	
おおいいなないだけ、これのでいるか		114 1819 25 25.	15 .: 8 . 3 . 4. 11	"治" 计算机器	المنافية المرافق	July and The Andry	final or a street	\$\$77. 11 To \$ 6.25	Section .	33/27 S.	14.5	1,0	* * * * * * * * * * * * * * * * * * *	克温度汽车	
Screened SP #8	N/A	8/30/2010	9/9/2010	In-Situ	<0.1105	0.2828	1.507	6.676	7.176	15.642	981	1730	80.4	2,791	ļ
Screened SP #9	N/A	8/30/2010	9/9/2010	In-Situ	<0.1130	0 4158	1.037	11.78	8.956	22.19	1690	2520	129	4,339	
Screened SP #10	N/A	8/30/2010	9/9/2010	In-Situ	<0.1104	0.5621	1.339	15.25	10.4	27.55	1420	2210	73.7	3,704	
機能のいいではない。	E Mary Co.	The state of	784	3227.	ويوالم في الم		3" "" "	No. 1	A	Co. P.S.	1.74.71.19	1 1 20	" " " " " " " " " " " " " " " " " " "	. "List"	1 " , " "
Screened SP #3A	N/A	9/7/2010	9/15/2010	In-Situ	<0.0213	0.0552	0.1002	0.2966	0.1321	0.5841	680	2470	199	3,349	
Screened SP #11	N/A	9/7/2010	9/15/2010	In-Situ	<0.0535	0.2656	0.3266	0.4519	0.2816	1.3257	592	2060	134	2,786	<u></u>
Screened SP # 12	N/A	9/7/2010	9/15/2010	In-Situ	<0.0528	<0.1056	0.3476	1.258	1.855	3.461	764	2750	140	3,654	
Screened SP #13	N/A	9/7/2010	9/15/2010	In-Situ	<0.0541	0.2092	0.127	3.177	1.938	5.451	1270	2710	173	4,153	
考, t 、	内質性はない	er ender end	or ogsålprede	C Le La Maria	47.74, 52.	11 122	A CONTRACTOR	100	1 m	EURIST P.	77 福堂。	3 14 10.74	Himse Land	A 34 E2 .	· 2 3455
Screened SP # 14	N/A	9/10/2010	9/16/2010	In-Situ	0.0011	0.0314	0.0149	0.5307	0.4611	1.0392	901	2540	66.4	3,507	ļ
Screened SP # 15	N/A	9/10/2010	9/16/2010	In-Situ	<0.0265	0.14	0.7463	2.849	2.675	6 41	645	1930	81.6	2,657	
Screened SP #16	N/A	9/10/2010	9/16/2010	In-Situ	<0.0265	0.0672	0.4311	1.377	1.203	3.078	408	1510	36 8	1,955	
2 1 2 2 1 3 25	13 % . 4.	18:2.	1 12 4 4	· 10 - 15 1	1 475	1.5 1 de 183	7: 10 0 %	في ما يا د	the of the	7 AL 28	1. J.	1. 1. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	(S - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	, 运弹道, , ;	+ r = 12 = 1

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDES IN SOIL

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

NMOCD REFERENCE NO: 1RP-2162

	SAMPLE					METHO	D: EPA SW 8	46-8021B, 50	30		ME	THOD: 801	5M	TOTAL	E 300
SAMPLE LOCATION	DEPTH (BGS)	SAMPLE DATE	DATE ANALYZED	SOIL STATUS	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)	TPH C ₆ -C ₃₅ (mg/Kg)	CHLORIDE (mg/Kg)
Screened SP # 17	N/A	9/16/2010	9/25/2010	In-Situ	<0.0214	<0.0427	0.1657	0.7331	0.7071	1.6059	488	2780	97.3	3,365	
Screened SP # 18	N/A	9/16/2010	9/25/2010	In-Situ	<0.0213	0.0451	0.2326	1.208	1.099	2.585	538	3070	99.2	3,707	
Screened SP # 19	N/A	9/16/2010	9/25/2010	In-Situ	· <0.0211	0.0433	0.1387	1.033	0.8556	2.071	501	3570	139	4,210	
The state of the s	-76.45°	4.5 ° ° 1.0%	· 有一	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	italia di	\$18.48° - 12.5 45°	們們一個軍	X	\$\$\dagge\tag{\tag{2}} \tag{2} \tag{2} \tag{2} \tag{2} \tag{2}	· 数1000	小学系统	11.1927	A - 7 1	(1) (1) (1)	··斯斯斯斯··
Screened SP # 20	N/A	9/24/2010	10/1/2010	In-Situ	<0.0217	0.0572	0.1376	0.5285	0.274	0.9973	350	1130	56.1	1,536	
Screened SP # 21	N/A	9/24/2010	10/1/2010	In-Situ	<0.0221	<0.0441	<0.0221	0.0755	0.0322	0.1077	132	390	19.7	542	
Screened SP # 22	N/A	9/24/2010	10/1/2010	In-Situ	<0.0213	<0.0425	0.0423	0.2	0.1756	0.4179	436	1930	85.1	2,451	
Screened SP # 23	N/A	9/24/2010	10/1/2010	In-Situ	<0.0217	<0.0433	<0.0217	0.0925	0.0518	0.1443	161	640	39.2	840	
Screened SP # 24	N/A	9/24/2010	10/1/2010	In-Situ	<0.0213	<0.0427	0.1157	0.8306	0.7454	1.6917	850	2480	158	3,488	
Screened SP # 25	N/A	9/30/2010	10/9/2010	In-Situ	<0.0539	<0.1078	0.0652	0.1956	0.0749	0.3357	132	1280	35	1,447	
Screened SP # 26	N/A	9/30/2010	10/9/2010	In-Situ	<0.0542	<0.1083	< 0.0542	0.1365	<0.0542	0.1365	104	1200	26.3	1,330	
[17] "孫智" P. Jangar	r year of swith	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	から、一人物で	ه، وړ ت د √بيره	ξζ - , , - , + r	3 4 . 1 × 1 × 1 × 1	A STATE OF THE STA	\$ C	10 29 T	1300	1. P. 2. 21	1. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	W	Walley	3就4个行。?
Screened SP # 27	N/A	10/1/2010	10/9/2010	In-Situ	<0.0533	<0.1066	<0.0533	0.1493	0.0576	0.2069	156	1820	31.4	2,007	
Screened SP # 28	N/A	10/1/2010	10/9/2010	In-Situ	<0.0534	<0.1068	<0.0534	0.1111	<0.0534	0.1111	96.4	1080	27.4	1,204	·
· 《 新音· 如《 · · · · · · · · · · · · · · · · · ·	· , * > 模型	1 -25	, J. (F. 5		, ,	به		,		W. '.'		240	J. F 14	、 、 學達 、	11、世界線に動

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

			MET	HODS: EP/	A SW 846-80	21B, 5030				
SAMPLE LOCATION	SAMPLE DATE	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL- BENZENE (mg/L)	M,P- XYLENES (mg/L)	O-XYLENES (mg/L)	TOTAL BTEX (mg/L)	CHLORIDES (mg/L)	TDS (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	
		,					1 2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 2 2	
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	-	•	
MW-1	09/23/10	0.0514	0.0278	0.0022	0.0028	0.0019	0.0861	-	-	
MW-1	11/05/10	0.2795	0.1807	0.0126	0.0114	0.0049	0.4891	-	-	
1942年,後出了自己	# 1 m 1 m	File Street			1. 28 - 1 Bangary	新新,本意识。发表	A STATE OF THE STATE OF	新語小聲四種	では、大学は	
SB-4 GW	12/22/09	-	-	+	-	-	-	8,580	15,700	
SB-5 GW	12/22/09	-			-	-	-	9,920	18,200	
A. A. A. C.	在国际人	The state of the s	(三級) 為		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	整。"这个面	· 通风 测数 。			
NMOCD CRITERIA	,	0.01	0.75	0.75	TOTAL XY	LENES 0.62		250	10,000	

GROUNDWATER ELEVATION DATA

PLAINS PIPELINE, L.P. 14" VAC TO JAL LEGACY LEA COUNTY, NEW MEXICO PLAINS SRS NO: 2009-092

NMOCD REFERENCE NO: 1RP-2162

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW - 1	7/6/2009	3,497.90	•	55.38	0.00	3,442.52
MW - 1	10/21/2009	3,497.90	-	55.42	0.00	3,442.48
MW 1	3/11/2010	3,497.90	-	50.57	0.00	3,447.33
MW 1	6/4/2010	3,497.90	-	55.54	0.00	3,442.36
MW - 1	9/23/2010	3,497.90	-	50.66	0.00	3,447.24
MW 1	11/5/2010	3,502.90	-	60.54	0.00	3,442.36

Appendices

Appendix A Soil Boring & Monitor Well Logs

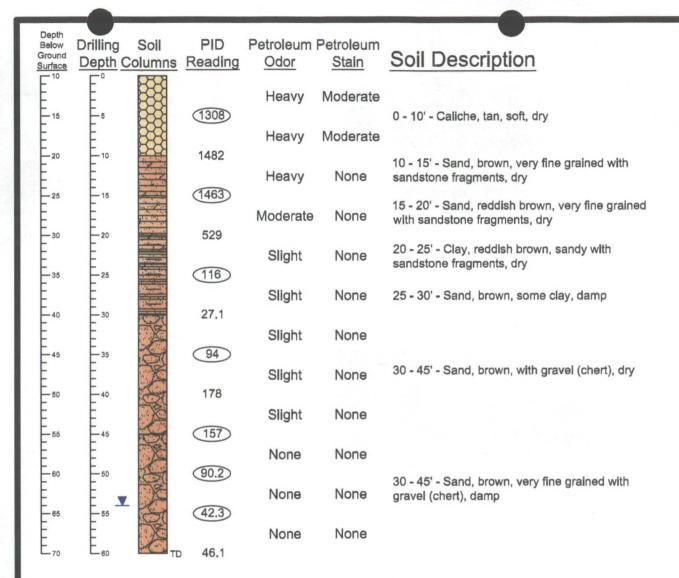
Soil Boring SB-1 / Monitor Well MW-1 Depth Soil PID Petroleum Petroleum Drilling Below Ground Soil Description Depth Columns Reading Odor Stain Surface July 1, 2009 Moderate Slight 0 - 5' - Caliche, tan, damp Date Drilled 42 Ft Thickness of Bentonite Seal 20 676 Depth of Exploratory Boring _ 70 Ft Heavy Slight Depth to Groundwater Approximately 64 Ft bgs 1305 5 - 15' - Caliche, tan, soft, dry with sand Ground Water Elevation Heavy Slight Indicates the PSH level measured (1634) 15 - 20' - Sand, brown, very fine grained with Indicates the groundwater level Moderate None measured on_ sandstone fragments Indicates samples selected for 30 1355 -20 Laboratory Analysis. Head-space reading in ppm obtained Moderate None with a photo-ionization detector. 35 (1904) 20 - 30' - Sand, brown to red, clayey - 25 Moderate None Grout Surface Seal 196 Moderate None Bentonite Pellet Seal (224) 55 -35 30 - 40' - Gravel (Chert), tan to brown, dry Slight None 441 Sand Pack Slight None 30 - 40' - Sand, brown, very fine grained with 169 gravel (chert) Screen Slight None (836) - 60 - 65 - 70 - 50 None None V **Completion Notes** (123) - 55 None None 1.) The monitor well was advanced on date using air rotary drilling techniques. 50 - 70' - Sand, red to brown, very fine grained. 92 -60 2.) The well was constructed with 4" ID, 0.010 Inch factory slotted, threaded joint, schedule 40 PVC pipe. F 75 - 65 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 Checked By: CDS
August 4, 2009



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



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

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

Soil Boring Details SB-2 14-Inch Vac to Jal - Legacy Lea County, New Mexico Plains Pipeline, L.P. Basin Environmental Consulting

Prep By: CDS

Checked By: CDS

August 4, 2009

Depth PID Petroleum Petroleum Soil Below Ground Soil Description Columns Reading Odor Stain Surface 0 - 5' - Caliche, tan, hard, dry Heavy Heavy (1550) 5 - 10' - Sand, tan, dry with caliche nodules Heavy Heavy -10 1465 Slight Heavy 10 - 20' - Sand, tan to white, dry with caliche (1128)- 15 nodules Slight Heavy -20 1367 Moderate None 20 - 30' - Clay, brown, sandy with sandstone **—** 25 (1487) fragments, dry Moderate None 381 30 - 35' - Clay, reddish brown, sandy, dry Slight None (125) None None 87 35 - 50' - Sand, reddish brown, dry with gravel None None 75 None None (85.6) - 50 None None (136) None None 50 - 70' - Sand, reddish brown, damp with gravel 96.1 None None 157 None None 84.4

Soil Boring SB-3

V

Indicates the PSH level measured



Indicates the groundwater level measured on _____



Indicates samples selected for Laboratory Analysis.

PID

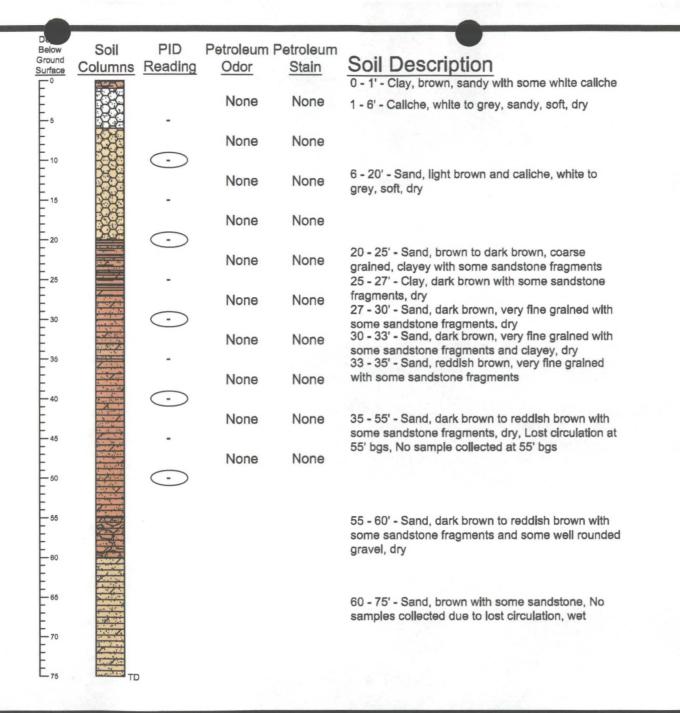
Head-space reading in ppm obtained with a photo-ionization detector.

Notes

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

Soil Boring Details SB-3 14-Inch Vac to Jal - Legacy Lea County, New Mexico Plains Pipeline, L.P. Basin Environmental Consulting

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



Soil Boring SB-4

Date Drilled	December 10, 2009
Thickness of Bentonite	Seal75 Ft
Depth of Exploratory Bo	ring 75 Ft
Depth to Groundwater	
Ground Water Elevation	

•

Indicates the PSH level measured



Indicates the groundwater level measured on _____



Indicates samples selected for Laboratory Analysis.

PID

Head-space reading in ppm obtained with a photo-ionization detector.

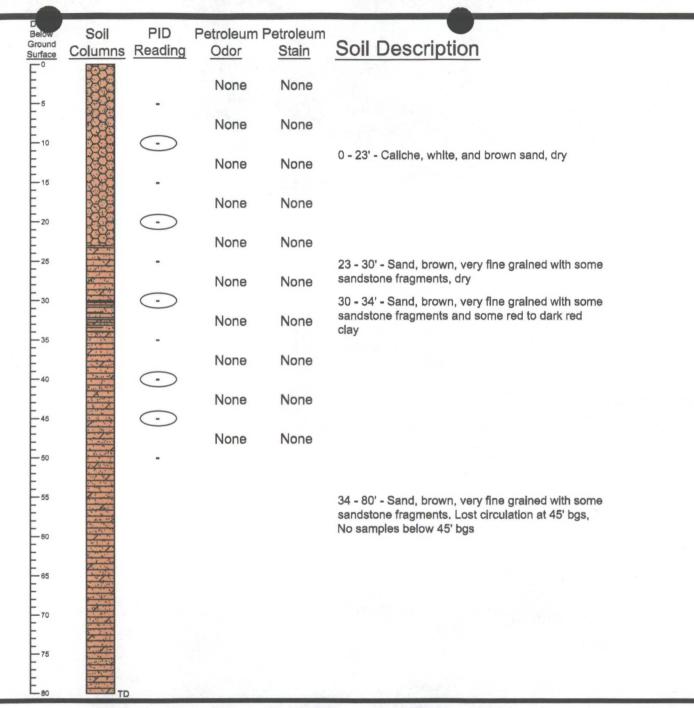
Notes

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

Soil Boring Details SB-4 14-Inch Vac to Jal - Legacy Lea County, New Mexico Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS	Checked By: CDS
May 5, 2010	



Soil Boring SB-5

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

Indicates the PSH level measured



Indicates the groundwater level measured on_



Indicates samples selected for Laboratory Analysis.

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 Boring Details **SB-5**

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

Basin Environmental Consulting

Prep By: CDS Checked By: CDS May 5, 2010

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.

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Sample Cross Reference 330360



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vacuum to Jal Lagacy

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

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14" Vacuum to Jal Lagacy

Date Received in Lab: Fri Apr-17-09 08:07 am

Report Date: 20-APR-09

roject Location. Dea County, Nivi			Project Manager:	Brent Barron, II
	Lab Id:	330360-001		
Amalusia Basusastad	Field Id:	Chloride Baseline		
Analysis Requested	Depth:			
	Matrix:	SOIL		
	Sampled:	Apr-15-09 15:00		
Anions by EPA 300	Extracted:			
1	Analyzed:	Apr-17-09 14:47		
	Units/RL:	mg/kg RL		
Chloride		796 10.3		
Percent Moisture	Extracted:			
1 41 44-11 11 20 20 20 20 20 20 20 20 20 20 20 20 20	Analyzed:	Apr-17-09 17:00		
	Units/RL:	% RL		
Percent Moisture		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 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 involved for this work order unless otherwise agreed to in writing

Since 1990 Houston - Dallas - San Antonio - Austın - Tampa - Mıami - 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
(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
	(281) 240-4200 (214) 902 0300 (210) 509-3334 (813) 620-2000 (305) 823-8500 (432) 563-1800



Blank Spike Recovery



Project Name: 14" Vacuum to Jal Lagacy

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

D . 4 . 1. #.

1 BLANK/BLANK SPIKE RECOVERY STUDY

	Keporting Chits: hig/kg	Daten#; 1	BLANK/BLANK SPIKE RECOVERT STO									
	Anions by EPA 300	Blank Result	Spike Added	Blank Spike	Blank Spike %R	Control Limits %R	Flags					
	Analytes	[A]	[B]	Result [C]	70K [D]	70 K						
٠	Chloride	ND	10.0	10.5	105	80-120						



Form 3 - MS Recoveries

Project Name: 14" Vacuum to Jal Lagacy



Work Order #: 330360

Lab Batch #: 756272

Jate Analyzed: 04/17/2009

QC- Sample ID: 330360-001 S

Project ID: 2009-092

Date Prepared: 04/17/2009

Analyst: LATCOR

Batch #:

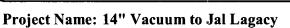
Matrix: Soil

Reporting Units: mg/kg	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	796ر	207	939	69	80-120	Х						

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



Sample Duplicate Recovery





Work Order #: 330360

Lab Batch #: 756272

Project ID: 2009-092

Date Analyzed: 04/17/2009

04/17/2009 Date Prepared:

Analyst: LATCOR

QC- Sample ID: 330360-001 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE/SAMPLE DUPLICATE RECOVERY										
1222000	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
Analyte]	[13]									
Chloride	796	793	0	20							

Lab Batch #: 756187

Date Analyzed: 04/17/2009

04/17/2009 Date Prepared:

Analyst: BEV

QC- Sample ID: 330355-021 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY	
Parent Sample	Sample	DDD	Control		_

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

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City/State/Zip:	Lovington, NM 68260				- ; - ;	*******		,2,	ı.	-						P	n#:	PAA	• J. F	lenry				Ų.		
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ipecial instructions:	-5,		<u> </u>	1000 11 10			\ , ;	(2)			1	 .	<u> </u>	, ,			Sa	mple Ca F	Cont	omn ainer Hea	inta dspa	el? ce?			(X)	一路的
amille by	nt 4 July	116	<u>.</u>	Received by		لبنيا	L,	ر الرائية الرائية	3		5	7. 7.	4/1	ate Coop	16	ime ime	- Cú	giod)	Sea Winn	S On C	oole	iner(s (š)	rail.	المراجعة	S. S.	ر. خرا خرار
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Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

	, • ;	_			
Otient: Plain's /Basin	•				
Date/ Time; 04-17-09 @ 0907	•				
Lab ID#: 330360					
	* •				
Initials: JMF					
Sample Receipt	Checklist				
	*		d	lient initials	8
#1 Temperature of container/ cooler?	(Yes)	No	z.S°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?//igbe	(Yes)	No.	Not Present	Ť	
#5 Chain of Custody present?	Yes	No -	, ''		
#6 Sample instructions complete of Chain of Custody?	(YES)	No		• •	1
#7 Chain of Custody signed when relinquished/ received?	(Yes)	No.			1
#8 Chain of Custody agrees with sample label(s)?	(Yes)	No .	ID written on Cont./ Lid		1
#9 Container label(s) legible and intact?	(Yes)	No.	Not Applicable		1
#10 Sample matrix/ properties agree with Chain of Custody?"	(Yes).	No			1
#11 Containers supplied by ELOT?	(Yest)	No .	. ' , '	:	1
#12 Samples in proper container/ bottle?	(Yes)	No	See Below		1
#13 Samples properly preserved?	Yes	No	See Below		1
#14 Sample bottles intact?	Yes	. No	. '		1
#15 Preservations documented on Chain of Custody?	Yes.	No	-		1
#16 Containers documented on Chain of Custody?	(Yes)	No		· ·	1 `
#17 Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below		1
#18 All samples received within sufficient hold time? .	(Yes)	No	See Below	· · · · · · · · · · · · · · · · · · ·	1
#19 Subcontract of sample(s)?	Yes	No.	Not Applicable		1
#20, VOC samples have zero headspace?	(Yes)	No:	- Not Applicable	· ·	1
	e 7	٠ ,			
Variance Docu	mentation		,		
	`			•	
Contact Contacted by:			Date/ Time:	***************************************	
			,		
Regarding:					
•					
Corrective Action Taken					
· .			• ,		· , ,
<u> </u>	· · ·				
			<u> </u>		
Check'all that Apply: See attached e-mail/ fax					
Crieck all that Apply See attached e-mail risk Client understands and wou	id like to oro	ceed with	analysis		
Cooling process had begun					
Cooming process riad begun	oner and		~		

• •					

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 Work Order Number: 333087 Report Date: 29-MAY-09 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

Report Date: 29-MAY-09

Work Order Number: 333087

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 reanalysis. 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 Analysis Summary 333087 PLAINS ALL AMERICAN EH&S, Midland, TX

PACCO POLICIES

Project Id: 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14" Vac to Jal Legacy

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

Report Date: 29-MAY-09
Project Manager: Brent Barron, II

								I TOJECT MIAI	iagei.	Brent Barron,	11		
	Lab Id:	333087-0	01	333087-0	02	333087-0	03	333087-0	04	333087-0	005	333087-0	006
Analysis Requested	Field Id:	Stockpile	#1	Stockpile	# 2	Main Exc - N	wsw	Main Exc - N	₹SW	Main Exc	wsw	Main Exc	ESW
Anatysis Requesteu	Depth:												
	Matrix:	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
BTEX by EPA 8021B	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	0.0010
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	1110	2 187	0.0158	0.0010		0 0011		0.0011	ND	0.0010
m,p-Xylenes		88.09	1.109	165.8	4 373		0.0020		0.0022		0.0022	ND	0.0020
o-Xylene		32 31	0.5545	12 40	2.187		0 0010		0 0011		0.0011	ND	0.0010
Total Xylenes		120.4	0.5545	178.2	2 187	0.0339	0.0010		0.0011		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	Extracted:												
	Analyzed:	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
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
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	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 Laboratones XENCO Laboratones 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 Analy: Summary 333087 PLAINS ALL AMERICA: EH&S, Midland, TX

melad

Project Id: 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14" Vac to Jal Legacy

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

Report Date: 29-MAY-09

Project Manager: Brent Barron, Il

									B	Diene Barron, ii	
	Lab Id:	333087-0	07	333087-0	08	333087-0	009	333087-	010		
Analysis Requested	Field Id:	Main Exc Flo	or # 1	Main Exc. Flo	or # 2	Main Exc Fl	oor # 3	Main Exc F	loor#4		•
Anuiysis Requesieu	Depth:										
	Matrix:	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:	May-19-09	12:58	May-19-09	12:58	May-19-09	12:58	May-19-09	12:58		
	Analyzed:	May-19-09	18:29	May-19-09	18:54	May-19-09	19:44	May-19-09	20:09	-	
	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 interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laborationes XENCO Laborationes XENCO Laborationes on responsibility and makes no warranty to the end use of the data hereby presented Our hability is limited to the amount involved 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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Project Name: 14" Vac to Jal Legacy

ork Orders: 333087,

Sample: 530571-1-BKS/BKS

Project ID: 2009-92

Lab Batch #: 759977

Matrix: Solid

Units: mg/kg	Date Analyzed: 05/22/09 14:44	SURROGATE RECOVERY STUDY						
ВТЕ	X 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:

Matrix: Solid

Units: mg/kg Date Analyzed: 05/22/09 15:06	SU	RROGATE R	ECOVERY	STUDY	•
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		·	[D]	,	
1,4-Dıfluorobenzene	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	SU	RROGATE RI	ECOVERY S	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	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			(2)		
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: Matrix: Soil

Units: mg/kg Date Analyzed: 05/22/09 18:19	SU	RROGATE RI	ECOVERY S	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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

Work Orders: 333087,

Project ID: 2009-92

Lab Batch #: 759977

Sample: 333087-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/22/09 19:03	nits: mg/kg Date Analyzed: 05/22/09 19:03 SURROGATE RECOVERY STUD				
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	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	9:24 SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes	'		[D]				
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	SU	RROGATE RI	ECOVERY S				
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Dıfluorobenzene	0.0242	0.0300	81	80-120			
4-Bromofluorobenzene	. 0.0255	0.0300	85	80-120			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

'ork Orders: 333087,

Lab Batch #: 759977 Sample: 333087-009 / SMP

BTEX by EPA 8021B

Analytes

Project ID: 2009-92

Matrix: Soil

0.0300

0.0300

1

Units: mg/kg

Date Analyzed: 05/22/09 2

21:33	L SU	RRUGATE R	ECOVERY	SIUDY	
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags

4-Bromofluorobenzene Lab Batch #: 759977

1,4-Difluorobenzene

Sample: 333087-003 S/MS

Batch:

Matrix: Soil

118

80-120

80-120

Unite mo/ko

Date Analyzed: 05/23/09 00:45

SURROGATE RECOVERY STUDY

Units. mg/kg Date Analyzed. 03/25/07 00.45					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	· ··

0.0240

0.0353

Lab Batch #: 759977

· Sample: 333087-003 SD / MSD

Batch:

Matrix: Soil SUPPOCATE DECOVERY STUDY

Units: mg/kg Date Analyzed: 05/23/09 01:07 SURROGATE RECOVERT STUDI						
BTEX by	EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Ana	lytes	(**)	[2]	(D)	751	
1,4-Dıfluorobenzene		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:

Matrix: Solid

Units: mg/kg Date Analyzed: 05/27/09 10:	:23 SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg	Date Analyzed: 05/27/09 10:44	SU	RROGATE RI	ECOVERY	STUDY	
	EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R IDI	Control Limits %R	Flags
Alla	alytes			101		
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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

Work Orders: 333087,

Project ID: 2009-92

Lab Batch #: 760298

Sample: 530774-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 05/27/09 11:27	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Dıfluorobenzene	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					
вте	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	Analytes	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	Amount Found {A}	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/27/09 20:07	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Dıfluorobenzene	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:

Matrix: Solid

Units: mg/kg Date Analyzed: 05/28/09 13:01	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R .	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0318	. 0.0300	106	80-120	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

'ork Orders: 333087,

Project ID: 2009-92

Lab Batch #: 760452

Sample: 530869-1-BSD / BSD

Matrix: Solid Batch:

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	Control Limits %R	Flags	
Analytes	, ,	'-'	[D]			
1,4-Dıfluorobenzene	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						
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	• •	, ,	[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/28/09 16:28 SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount B	Recovery %R [D]	Control Limits %R	Flags
1,4-Dıfluorobenzene	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:

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					
ТРН	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		46.0	50.0	92	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

Work Orders: 333087,

Project ID: 2009-92

Lab Batch #: 759476

Sample: 530300-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg	SURROGATE RECOVERY STUDY						
ТРН 1	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	WWW. WW.	91.9	100	92	70-135		
o-Terphenyl		52.3	50.0	105	70-135		

Lab Batch #: 759476

Sample: 333087-001 / SMP

Batch: 1

Matrix: Soil

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

Lab Batch #: 759476

Sample: 333087-002 / SMP

Batch:

Matrix: Soil

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

Lab Batch #: 759476

Sample: 333087-003 / SMP

Batch: 1

Matrix: Soil

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

Lab Batch #: 759476

Sample: 333087-004 / SMP

Batch: 1

Matrix: Soil

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

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

Vork 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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	11	(-)	[D]	,,,,,	
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	59.2	50.0	118	70-135	

Lab Batch #: 759476

Sample: 333087-007 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/19/09 18:29	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/19/09 18:54 SURROGATE RECOVERY STU					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE RI	ECOVERY S	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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

Work Orders: 333087,

Project ID: 2009-92

Lab Batch #: 759476

Sample: 333087-010 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/19/09 20:09	SL	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/20/09 00:18	SU	RROGATE RI	ECOVERY S	STUDY	•
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	49.2	50.0	98	70-135	

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 333087

Date Prepared: 05/22/2009

Project ID: 2009-92 Date Analyzed: 05/22/2009

Analyst: BRB Lab Batch ID: 759977

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

CIII.07 C C											
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		{B}	[C]	[D]	[E]	Result [F]	[G]			,	
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	

Analyst: ASA

Date Prepared: 05/27/2009

Date Analyzed: 05/27/2009

Lab Batch ID: 760298

Sample: 530774-1-BKS

Sample: 530571-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg		BLAN	K/BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	LICATE 1	RECOVE	ERY STUD	Υ	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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

Date Prepared: 05/28/2009

Project ID: 2009-92

Date Analyzed: 05/28/2009

Lab Batch ID: 760452

Sample: 530869-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg		BLAN	K/BLANK S	SPIKE / E	BLANK S	PIKE DUPI	ICATE I	RECOVE	ERY STUD	Y	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	(E)	Result [F]	[G]				
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

C12-C28 Diesel Range Hydrocarbons

Sample: 530300-1-BKS

ND

Date Prepared: 05/19/2009

Batch #: 1

1000

Date Analyzed: 05/19/2009

95

Matrix: Solid

70-135

35

Units: mg/kg		BLAN	K/BLANK S	SPIKE / E	BLANK S	PIKE DUPI	ICATE 1	RECOVI	ERY STUD	Y	
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]			,	
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1010	101	1000	990	99	2	70-135	35	

96

1000

954

964

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 - M MSD Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 333087

Project ID: 2009-92

Lab Batch ID: 759977

QC- Sample ID: 333087-003 S

Batch #:

Matrix: Soil

Date Analyzed: 05/23/2009

Date Prepared: 05/22/2009

Analyst: BRB

Reporting Units:

Benzene Toluene Ethylbenzene m,p-Xylenes o-Xylene

its: mg/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag		
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD			
	0.0073	0.1024	0.2245	212	0.1024	0.2088	197	7	70-130	35	Х		
	0.0354	0.1024	0.3688	326	0.1024	0.3445	302	7	70-130	35	Х		
	0.0158	0.1024	0.1478	129	0.1024	0.1382	120	7	71-129	35			
	. 0.0249	0.2048	0.2332	102	0.2048	0.2213	96	5	70-135	35			
	0.0090	0.1024	0.1041	93	0.1024	0.0991	88	5	71-133	35			

Lab Batch ID: 760298

OC- Sample ID: 333233-020 S

Batch #:

Matrix: Soil

Date Analyzed: 05/27/2009

Date Prepared: 05/27/2009

Analyst: ASA

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked **Control** Control BTEX by EPA 8021B Sample Sample Spiked Sample Spike Result Spike Dup. RPD Limits Limits Flag Result Added Added [C] %R Result [F] %R % %R %RPD Analytes [A] [B] $|\mathbf{D}|$ [E] |G| ND 0.1092 0.0619 57 0.1092 0.0656 60 6 70-130 35 Х Benzene ND 0.1092 0.0606 55 0.1092 0.0644 59 6 70-130 35 Х Toluene 0.1092 62 35 Х ND 0.0677 0.1092 0.0720 66 6 71-129 Ethylbenzene ND 0.2183 0.1392 64 0.2183 0.1474 68 70-135 35 Х m,p-Xylenes 58 ND 0.1092 0.0628 0.1092 0.0671 7 71-133 35 Х o-Xylene 61

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



Form 3 - MS / 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 #:

Matrix: Soil

Date Analyzed: 05/19/2009

Date Prepared: 05/19/2009

Analyst: BHW

Renorting Units: mg/kg

Acporting Ones. hig/ag		[V]	IATRIX SPIK	E/MAI.	KIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH By SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%K [G]	%	%K	%KPD	
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	



Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 333087

Lab Batch #: 759451

QC- Sample ID: 333088-001 D

Date Analyzed: 05/20/2009

Date Prepared: 05/20/2009

Project ID: 2009-92

Analyst: BEV

Batch #:

Matrix: Soil

SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Result	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
	[B]			
ND	ND.	NC	20	
	Parent Sample Result [A]	Parent Sample Result [A] Sample Duplicate Result [B]	Parent Sample Result [A] Result [B]	Result Duplicate RPD Limits [A] Result %RPD [B]

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

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	- ARCHITECTURE CONTROL OF THE PROPERTY OF THE		, p1.1 k		photograph de sale		
· .	Environmental Lab of T	exas		CHAIN OF CUS West I-20 East In, Toxes 79765	TODY RECORD AND A	ANALYSIS REQUEST Phone: 432-563-1800 Fax: 432-563-1713	· lof
	Project Manager: Camillo Bryant		·····	+	Project Name: 14"	Vac to Jal Legacy	
•	Company Name Basin Environmental Co	essulting LLC SEV	LUICE FECUTE		Project #: SRS	s# 2009-92	
	Company Address, P.O. Box 381	, ,		•	Project Loc: Lea	County, NM	
,	, , ,			· · · · · · · · · · · · · · · · · · ·	PO #: PAA		
·							
	Telephone No: (575)605-7210	D- 1-	Fax No: (505) 396-		Report Format: X S	Standard TRRP	NPDES
	Sampler Signature:	Dujant	e-mail: <u>cibryan</u>	@basin-consultin	<u>a.∞m</u>	Analyze For:	
:	(lab use only)	U			TCI	19:	TT į
•	ORDER #: 333087		₹ (Seese	vation 8 / of Containers	Maurbs gg	8 8	
	FIELD CODE	Beginning Dopth Ending Depth Date Sampled	Time Sampled	rtÖ İşstör, İsanısı Kanası (Speckly)	Discription water salaring on a commonger of scotton of the control of the contro	Mens. As As Ba Cal C Puris Mens. As As Ba Cal C Puris Volucia Sementables Offic (Astronomy P UTEX BA PATE (ASTRONOM) P UTEX BA PATE (ASTRONOM P UT	RUSH TAT fire-Scheole) 24 Skindard TAT 4 DAY
	OI STOCKPILE !!	6/18	1430 11X		SoucX		X
	OI STOCKPILE#2		1440				
	- 03 MAIN EXC NWSW		1445	$\sqcup \sqcup \sqcup \sqcup \sqcup \sqcup$			
	MESW - NESW	 	1450			++++ #++	- - - -
	65 MAIN Exe WISLL	 	ISOO		- - 		-
	OW MAIN EXC ESW	+	1570	├┤┼ ┼┼┼	- 	++++	
	108 MAIN Exc FLOOR # 2	: - -` -	1530		- 	+++++	- - - -
	Of MAIN Exc - FLORES	}	1540		V 1/1 + 1 + 1	111411	
	10 MAIN Exc FLOORY	5/18	1550 XX		SOIL X	X	1 1 1 1 1 1 1 1
	Special Instructions:	,			Catha i	manufacture and same 18 4 4 . Se	(380)
	ame le layout \$1000	Time Received by	July_	57/13/ Da	of 1600 Custody of Time Sample H	en of Headspace? Containings Seels on container(s) seels on container(s) seels on container(s) tand Defining mplet Elent Rep. Printer? UPS DHL F	84 (S)
	Reinculated by 5/19/cc	Time Received by Et	Maler	US 19	Time Tempera	minus, ore commit	FedEx Lone Star

.

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-in

Client	Basin Plains	. •				
, , , , , , , , , , , , , , , , , , ,				•		
Date/ Time: 05/19/09 8:12						
Lab 10#. 333087 .						
Initials: ONA		•				
	Sample Receipt	Checklist				
		<u>,</u>		· · · · · · · · · · · · · · · · · · · ·	Hient Initials	R
#1 Tempe	erature of container/,cooler?,	Yes	- No.	1.5 · · c	, in 5 2	
			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?			No	* * * * * * * * * * * * * * * * * * *	, , ,	١.
#6 Sample instructions complete of Chain of Custody?			No -	3 , 1 , 1 1 1 1		
#7 Chain of Custody signed when relinquished/ received?			· No			
	of Custody agrees with sample label(s)?	(Yes	No ·	ID written on Cont7 Lid		1 - 1
#9 Container label(s) legible and intact?		Mes :	.No	Not Applicable 1	-5	1. 3.5
	ile matrix/ properties agree with Chain of Custody?	(Yes	No.			115
#11 Containers supplied by ELOT?			No	1	11.	1.
#12 Samples in proper container/ bottle?		(Yes	·No	See Below	3 × 5	
#13 Samples properly preserved?		(Yes)	. No	Sce Below	-	
#14 Sample bottles intact?		(Yes)	No	2	7,7	1. 5.7
#15 Preservations documented on Chain of Custody?		(Yes)	No		1	135
#16 Containers documented on Chain of Custody?		(Yes)	No		1377	1
#17 Sufficient sample amount for indicated test(s)?		(Yea)	. No	See Below		1 * :
#18 All samples received within sufficient hold time?		Yes	· No A	See Below		
#19 Subcontract of sample(s)?		Yes	No ~	Not Applicable	*	1 📆
#20 VOC	samples have zero headspace?	Yes	No	Not Applicable		1
-	1		·	1		.
	Variance Docur	nentation.			-	' e
					57.7	1. 4
Contact:	Contacted by		_	Date/ Time:	<u> </u>	
	,	,	_			
Regarding			·			
·.				,	11 - 12 -	37
	•	74		-		Ť ;,
Corrective	Action Taken:		•			,
			,			٠.
	,		· :		-,17	
		<u> </u>	,	, , ,		
			·			
Ohnak -"	that Apply:					
Cueck all	that Apply: See attached.e-mail/ fax Client understands and woul	d like to are	cood with	analysis .		•
į	Cooling process had begun				,	
1	Cooming hinopage und pagent	Granding artes	sampany	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.

Certified and approved by numerous States and Agencies.

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

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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

Work Order Number: 333729

Report Date: 03-JUN-09

Date Received: 05/27/2009

Sample receipt non conformances and Comments:

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

Report Date: 03-JUN-09

Work Order Number: 333729

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

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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, il

								2 10 1000 1121	mager.	Dient Darion	,		
	Lab Id:	333729-0	001	333729-0	002	333729-0	003	333729-	004	333729-	005	333729-0	06
Analysis Banuartad	Field Id:	T-1 @ 10	'bgs	T-2 @ 12'	bgs	T-2 @ 14'	bgs	T-2@18	' bgs	T-3 @ 12	' bgs	T-3 @ 14'	bgs
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOII	-	SOIL	
	Sampled:	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 l	0:40
BTEX by EPA 8021B	Extracted:	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 I	11:00
DILADY EITHOUTE	Analyzed:	May-31-09	1641	Jun-02-09 11:41		Jun-02-09 12.24		May-31-09 17:03		May-31-09 19:33		May-31-09 2	20:37
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.0011	34.76	5.852	18.84	5.886	0.0023	0.0011	4 046	1.153	4.059	1 147
Toluene		ND	ND 0.0022		11.70	223.7	11 77	0.0088	0.0023	55 43	2 305	74 40	2 293
Ethylbenzene		ND	ND 0.0011		5.852	136.1	5.886	0.0069	0.0011	43 23	1.153	58.59	1.147
m,p-Xylenes		ND	ND 0.0022		11.70	206.0	11 77	0.0121	0.0023	66 87	2.305	87 36	2.293
o-Xylene		ND	0.0011	96 74	5.852	70.99	5 886	0.0052	0.0011	23 70	1 153	31 03	1.147
Total Xylenes		ND	0 0011	381.74	5.852	276 99	5 886	0.0173	0.0011	90 57	1.153	118 39	1.147
Total BTEX		ND	0.0011	930.1	5.852	655 63	5.886	0.0353	0.0011	193.276	1.153	255.439	1 147
TPH By SW8015 Mod	Extracted:	Jun-01-09	11:07	Jun-01-09	11:07	Jun-01-09	11:07	Jun-01-09	11:07	Jun-01-09	11:07	Jun-01-09 1	1:07
2 , 56010 1.100	Analyzed:	Jun-01-09	14:25	Jun-01-09	14:50	Jun-01-09	15:15	Jun-01-09	15:40	Jun-01-09	16:05	Jun-01-09 1	6:30
	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		ND			177	7000	178	22.3	17.3	3550	173	3980	174
C12-C28 Diesel Range Hydrocarbons		ND	16.4	16500	177	10500	178	109	17.3	6450	173	7300	174
C28-C35 Oil Range Hydrocarbons		ND	16.4	1440	177	1050	178	ND	17.3	725	173	785	174
Total TPH		ND	16.4	28240	177	18550	178	131.3	17.3	10725	173	12065	174

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 Laborationes XENCO Laborationes XENCO Laborationes as XENCO Laborationes as Summers no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount involved for this work order unless otherwise agreed to in writing

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

Project Id: 2009-092

Contact: Jason Henry

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 Location: Lea County, NM Project Manager: Brent Barron, II

					•			I TOJECT MIAI	agei.	Dieni Barron,	ш		
	Lab Id:	333729-0	01	333729-0	02	333729-0	03	333729-0	04	333729-0	005	333729-0	06
Analysis Requested	Field Id:	T-1 @ 10'	bgs	T-2 @ 12'	ogs	T-2 @ 14'	bgs	T-2 @ 18'	ogs	T-3 @ 12'	bgs	T-3 @ 14'	bgs
Anutysis Requested	. Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-26-09	0:00	May-26-09	0 05	May-26-09	10:10	May-26-09	0 20	May-26-09	10 30	May-26-09	10:40
Percent Moisture	Extracted:												
1 01 00110 1/10/10/10	Analyzed:	May-28-09 08:46		May-28-09 (8:46	May-28-09	08:46	May-28-09 (8:46	May-28-09	08:46	May-28-09 (08:46
	Units/RL:	%	RL	%	RL	· %	RL	%	RL	%	RL	%	RL
Percent Moisture		8.71	1.00	15.24	1.00	15.73	1.00	13.23	1.00	13.24	1.00	13.66	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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Certificate of Analysis Summary 333729 PLAINS ALL AMERICAN EH&S, Midland, TX

Meladi

Project Id: 2009-092

Project Location: Lea County, NM

Contact: Jason Henry

Project Name: 14-Inch Vac to Jal - Legacy

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

Report Date: 03-JUN-09

- County, NVI								Project Ma	nager:	Brent Barron,	, Ц		
	Lab Id:	333729-0	007	333729-0	800	333729-	009	333729-0	010	333729-0	011	333729-0	12
Analysis Degreeted	Field Id:	T-3 @ 18	bgs	T-3 @ 22'	bgs	T-3 @ 26	' bgs	T-3 @ 30	bgs	T-4 @ 12	'bgs	T-4 @ 14'	bgs
Analysis Requested	Depth:										-		
	Matrix:	SOIL	SOIL		SOIL		SOIL			SOIL		SOIL	
	Sampled:	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
BTEX by EPA 8021B	Extracted:	May-30-09	11.00	May-30-09	11:00	May-30-09 11:00		May-30-09 11:00		Jun-01-09 16:30		May-30-09	11:00
DIEM by DIM 0021D	Analyzed:	May-31-09	May-31-09 20:59		May-31-09 17:24		18:28	May-31-09	21.20	Jun-02-09	12:46	May-31-09 22.03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		11.28	1 141	0 0070	0.0012	ND	0.1194	ND	1.073	48 18	6.038	8.783	1 280
Toluene		83.91	2.283	0.0250	0.0025	0 6279	0.2388	2.587	2.147	400 1	12.08	102 0	2 561
Ethylbenzene		48.65	48.65 1 141		0.0012	1.565	0 1194	3.671	1.073	211.1	6.038	63.40	1 280
m,p-Xylenes		73.01	2 283	0.0110	0.0025	4.657	0 2388	6.086	2.147	327.2	12.08	96.00	2 561
o-Xylene		24.87	1 141	0.0053	0.0012	2.401	0 1194	2.512	1.073	111.0	6.038	33 74	1.280
Total Xylenes		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 BTEX		241.72	1 141	0.0568	0.0012	9.2509	0.1194	14 856	1.073	1097.58	6.038	303 923	1.280
TPH By SW8015 Mod	Extracted:	Jun-01-09	11.07	Jun-01-09	11:07	Jun-01-09	11:07	Jun-01-09	11:07	Jun-01-09	11:07	Jun-01-09 1	1 07
2212 23 2 11 20 20 11 20 2	Analyzed:	Jun-01-09	16 55	Jun-01-09	17:20	Jun-01-09	17:45	Jun-01-09	18:10	Jun-01-09	19:00	Jun-01-09 1	9:24
	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		5930	171	ND	18.5	289	18.2	420	16.2	13200	364	3100	193
C12-C28 Diesel Range Hydrocarbons		11100	171	59.0	18 5	910	18.2	1400	162	22300	364	4600	193
C28-C35 Oil Range Hydrocarbons		1080	171	ND	18.5	81.9	18.2	118	162	2050	364	524	193
Total TPH		18110	171	59	18.5	1280.9	18.2	1938	16.2	37550	364	8224	193

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 KENCO 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 involved for this work order unless otherwise agreed to in writing

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



Project Id: 2009-092

Contact: Jason Henry

Project Name: 14-Inch Vac to Jal - Legacy

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

p								I roject wan	mgcr.	Dient Darton,	ш		
	Lab Id:	333729-0	07	333729-0	08	333729-0	09	333729-0	10	333729-0	11	333729-0	12
Analysis Requested	Field Id:	T-3 @ 18'	bgs	T-3 @ 22'	ogs	T-3 @ 26'	bgs	T-3 @ 30'	ogs	T-4 @ 12'	bgs	T-4 @ 14'1	bgs
Anutysis Requesteu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-26-09	10:50	May-26-09	1:00	May-26-09	11:10	May-26-09	1:20	May-26-09	11:30	May-26-09 1	11:40
Percent Moisture	Extracted:								-				
	Analyzed:	May-28-09	08 46	May-28-09 (8:46	May-28-09	08:46	May-28-09 (08:46	May-28-09	08:46	May-28-09 ()8·46
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		12.39	1.00	19 12	1.00	17.55	1.00	7.39	1.00	17.52	1 00	22.36	1.00

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								I TOJECT MIA	nager.	Dieni Dairon	,		
-	Lab Id:	333729-0	013	333729-0	14	333729-0	115	333729-0	016	333729-	-017	333729-0	18
Analysis Daguestad	Field Id:	T-4 @ 18	'bgs	T-4 @ 22'	bgs	T-4 @ 26'	bgs	T-4 @ 30	bgs	T-5 @ 14	l' bgs	T-6 @ 10'	bgs
Analysis Requested	Depth:												
	Matrix:	SOIL	. [SOIL		SOIL		SOIL		SOII	Ĺ	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
BTEX by EPA 8021B	Extracted:	Jun-01-09	16:30	May-30-09	May-30-09 11:00		11 00	Jun-01-09	16 30	May-30-09	11:00	May-30-09	11.00
DIEM DY EIN COLLE	Analyzed:	Jun-02-09	Jun-02-09 13:08		May-31-09 22:46		23:07	Jun-02-09	13:50	May-31-09	17:46	May-31-09 23:5	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		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	250.2	11 39	0.0041	0.0025	20 67	2.468
Ethylbenzene		142.5	6 24 1	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	150.48	1.178	214	1.129	288.82	5.694	ND	0 0012	45.23	1.234
Total BTEX		737.64	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	Jun-01-09	11:07	Jun-01-09	11:07	Jun-01-09	11:07	Jun-01-09	11.07	Jun-01-09 1	1:07
2 , 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	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 2	1:53
	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		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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Project Id: 2009-092

Contact: Jason Henry

Project Name: 14-Inch Vac to Jal - Legacy

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:	333729-0 T-4 @ 18' b		333729-0 T-4 @ 22'		333729-0		333729-0	- 1	333729-0		333729-0	18
Analysis Requested		T-4 @ 18' b	ogs	T-4 @ 22'	Las I	T 4 0 201							
Anatysis Kequestea	Depth:				ugs	T-4 @ 26' l	ogs	T-4 @ 30' l)gs	T-5 @ 14'	bgs	T-6 @ 10' l	ogs
[
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-26-09 1	1:50	May-26-09	12:00	May-26-09 l	2 10	May-26-09 l	2:20	May-26-09	12 30	May-26-09 l	12:40
Percent Moisture	Extracted:												
	Analyzed:	May-28-09 08:46		May-28-09	08:46	May-28-09 (8:46	May-28-09 0	8.46	May-28-09	08:46	May-28-09 0	J8:46
	Units/RL:	%	RL	%	RL	%	RL.	%	RL	%	RL	%	RL
Percent Moisture		20 20 .	1 00	15 11	1.00	11.76	1.00	12.54	1 00	19.36	1 00	18.97	1.00

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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

								110,000111	B	Biene Burron	, —		
· · · · · · · · · · · · · · · · · · ·	Lab Id:	333729-	019	333729-0)20	333729-0	021	333729-	022	333729-	023	333729-	024
Analysis Degreested	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 '
Analysis Requested	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
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
DILLI BY LITTOUZIE	Analyzed:	Jun-01-09	Jun-01-09 10:55		Jun-01-09 11:17		13:04	Jun-01-09	13.25	Jun-01-09 13:47		Jun-01-09	11:38
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		0.0013	0 0013	ND	0.0012	9 257	1.137	5.998	1 190	ND	1.200	ND	0.0011
Toluene	0.0053		0.0025	0.0042	0.0024	56.21	2 274	62.42	2.380	33.32	2.400	ND	0 0023
Ethylbenzene		0.0015	0.0013	0.0018	0.0012	35.25	1 137	46.94	1.190	37.70	1.200	ND	0.0011
m,p-Xylenes		ND	0 0025	ND	0.0024	54.67	2.274	71.87	2.380	59.77	2.400	ND	0.0023
o-Xylene		ND	0.0013	ND	0.0012	19.97	1.137	25.59	1.190	22.55	1.200	ND	0.0011
Total Xylenes		ND	0.0013	ND	0.0012	74.64	1.137	97 46	1.190	82.32	1.200	ND	0.0011
Total BTEX		0.0081	0.0013	0 006	0.0012	175.357	1.137	212.818	1.190	153.34	1.200	ND	0 0011
TPH By SW8015 Mod	Extracted:	Jun-01-09	11.07	Jun-01-09	11:07	Jun-01-09	12:14	Jun-01-09 12 14		Jun-01-09	12:14	Jun-01-09	12:14
11112, 5,,0010,1102	Analyzed:	Jun-01-09	22 18	Jun-01-09	22:43	Jun-01-09	13:33	Jun-01-09	13 56	Jun-01-09	14:20	Jun-01-09	14:43
	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		ND	18.9	ND	18.3	3460	344	3170	360	3190	360	ND	17.0
C12-C28 Diesel Range Hydrocarbons		28.3	18.9	66.6	18.3	5480	344	5270	360	5010	360	47 4	17.0
C28-C35 Oil Range Hydrocarbons		ND	18.9	ND	18.3	900	344	799	360	861	360	44.3	17.0
Total TPH		28.3	18 9	66.6	18.3	9840	344	9239	360	9061	360	91.7	17.0

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Contact: Jason Henry

Project Name: 14-Inch Vac to Jal - Legacy

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

								Froject Mai	iager:	BIEIR Barron,	ц		
	Lab Id:	333729-0	19	333729-0	20	333729-0	21	333729-0	22	333729-0	23	333729-0	24
Analysis Requested	Field Id:	T-6@14'	bgs	T-6 @ 18'	ogs	T-7@10'1	bgs	T-7@14'1	bgs	T-7@18	bgs	T-8 @ 10'	bgs
Anatysis Requested	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
Percent Moisture	Extracted: Analyzed:	May-28-09	OR 46	May-28-09 (18.46	May-28-09 (ገ ደ -ፍ <i>ለ</i>	May-28-09 (18.54	May-28-09	ng.54	May-28-09 (ne-54
	-	•		,		_		•		'		•	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	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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Date Received in Lab: Wed May-27-09 08:34 am

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

								Troject Manager.	Dient Berron, II	
	Lab Id:	333729-025	5	333729-02	26	333729-0	027			
Analysis Degreested	Field Id:	T-8 @ 14' bg	gs	T-9 @ 10' l	ogs	T-9 @ 14	bgs			
Analysis Requested	Depth:									
	Matrix:	SOIL		SOIL		SOIL				
	Sampled:	May-26-09 13	50	May-26-09 1	4:00	May-26-09	14 10			
BTEX by EPA 8021B	Extracted:	Jun-01-09 08	:00	Jun-01-09 0	8:00	Jun-01-09	08.00			
DIEN by Elin 60215	Analyzed:	Jun-01-09 11	Jun-01-09 11:59		Jun-01-09 12:43		12:21			
	Units/RL:	ıng/kg	RL	mg/kg	RL	mg/kg	RL			
Benzene		ND 0	0012	0.0072	0.0011	0.0062	0 0012			
Toluene		ND 0	0023	0.3247 (0.0021	ND	0 0023			
Ethylbenzene		ND 0	0012	0.2975	0.0011	0.0018	0 0012			
m,p-Xylenes		ND 0	0023	0.4625	0.0021		0.0023			
o-Xylene		ND 0	0012	0.2470	0.0011	0.0072	<u>-</u>			
Total Xylenes		ND 0	0012	0.7095			0.0012			
Total BTEX		ND 0	0012	1.3389	0.0011	0.0249	0.0012			
TPH By SW8015 Mod	Extracted:	Jun-01-09 12	:14	Jun-01-09 12	2:14	Jun-01-09	12:14			
	Analyzed:	Jun-01-09 15	06	Jun-01-09 1:	5:29	Jun-01-09	15:52			
	Units/RL:	mg/kg	RL.	mg/kg	RL	mg/kg	RL	·		
C6-C12 Gasoline Range Hydrocarbons		ND	17 4	383	160	ND	17.6			
C12-C28 Diesel Range Hydrocarbons		ND	17.4	3720	160	69.7	17 6			
C28-C35 Oil Range Hydrocarbons		ND	17.4	648	160	36 3	17.6			
Total TPH	ND		17.4	4751	160	106	17.6			

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Project Location: Lea County, NM

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Report Date: 03-JUN-09

Project Manager: Brent Barron, II

								Troject Manager	Dieni Duron, n	
	Lab Id:	333729-0	25	333729-0	26	333729-0	27			
Analysis Requested	Field Id:	T-8 @ 14'	bgs	T-9 @ 10'	ogs	T-9@14'l	bgs			
Anutysis Requested	Depth:							•		
	Matrix:	SOIL		SOIL		SOIL				
	Sampled:	May-26-09	13:50	May-26-09	4:00	May-26-09 I	14:10	•		
Percent Moisture	Extracted:									
1 of cont 1/20istare	Analyzed:	May-28-09	08:54	May-28-09	8.54	May-28-09 (08:54			
	Units/RL:	%	RL	%	RL	%	RL			
Percent Moisture		13.92	1.00	6.37	1.00	14.57	1.00			

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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	(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



Project Name: 14-Inch Vac to Jal - Legacy

'ork 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	Control Limits %R	Flags	
Analytes			[D]	İ		
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 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	0.0269	0.0300	90	80-120		

Lab Batch #: 760705

Sample: 530985-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 05/31/09 15:58	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Dıfluorobenzene	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 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0277	0.0300	92	80-120		
4-Bromofluorobenzene	0.0189	0.0300	63	80-120	* *	

Lab Batch #: 760705

Sample: 333729-004 / SMP

Batch:

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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal - Legacy

Work Orders: 333729,

Sample: 333729-008 / SMP

Project ID: 2009-092

Lab Batch #: 760705

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 05/31/09 17:24	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes	()	,-,	[D]				
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 05/31/09 17:46	SU	RROGATE R	RECOVERY	SIUDY	
ВТЕ	X by EPA 8021B	Amount Found .[A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analyte	Analytes	1 1		[D]		
1,4-Dıfluorobenzene		0.0270	0.0300	. 90	80-120	
4-Bromofluorobenzene		0.0224	0.0300	75	80-120	**

Lab Batch #: 760705

Sample: 333729-009 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/31/09 18:28	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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					
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/31/09 20:37	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal - Legacy

/ork Orders: 333729,

Project ID: 2009-092

Lab Batch #: 760705

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	Control Limits %R	Flags	
Analytes	[6]		[D]	/4K		
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	Control Limits %R	Flags		
Analytes			[D]				
1,4-Dıfluorobenzene	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	Control Limits %R	Flags	
Analytes			[D]			
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	Control Limits %R	Flags
Analytes			[D]		
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 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	0.0297	0.0300	99	80-120		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

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



Project Name: 14-Inch Vac to Jal - Legacy

Work Orders: 333729,

Project ID: 2009-092

Lab Batch #: 760705

Sample: 333729-018 / SMP

Matrix: Soil Batch: 1

Units: mg/kg	Date Analyzed: 05/31/09 23:50	SURROGATE RECOVERY STUDY					
ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	Analytes	0.0252	0.0300	84	80-120		
4-Bromofluorobenzene	<u>.</u>	0.0273	0.0300	91	80-120		

Lab Batch #: 760705

Sample: 333729-004 S / MS

Batch:

Matrix: Soil

Units: mg/kg	Units: mg/kg Date Analyzed: 06/01/09 00:12	SURROGATE RECOVERY STUDY						
ВТЕ	X 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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 00:33	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/01/09 09:29	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found . [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	o.		[D]		
I,4-Dıfluorobenzene	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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal - Legacy

/ork Orders: 333729,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 531040-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 06/01/09 10:34	Su	RROGATE R	ECOVERY :	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	[,	(-)	[D]		
1,4-Dıfluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0220	0.0300	73	80-120	*

Lab Batch #: 760797

Sample: 333729-019 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 10:55	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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

A a				
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
0.0244	0.0200		90 120	
				**
	Found	Found Amount [B]	Found [A] Amount [B] Recovery %R [D] 0.0244 0.0300 81	Found [A] Amount [B] Recovery %R %R [D] Limits %R 0.0244 0.0300 81 80-120

Lab Batch #: 760797

Sample: 333729-025 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 11:59	SU	RROGATE RI	ECOVERY S	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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

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



Project Name: 14-Inch Vac to Jal - Legacy

Work Orders: 333729,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 333729-027 / SMP

Matrix: Soil Batch: 1

Units: mg/kg Date Analyzed: 06/01/09 12:21	Su	URROGATE RECOVERY STUDY				
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	(,		[D]			
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	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			{ D]		
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/01/09 13:04	SURROGATE RECOVERY STUDY					
втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/01/09 13:25	SU	RROGATE RI	ECOVERY	STUDY	
BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1,4-Dıfluorobenzene		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	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	. Flags
Analytes			[D]		
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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal - Legacy

/ork Orders: 333729,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 333729-025 S/MS

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 06/01/09 19:04 SURROGATE RECOVERY STUDY						
вте	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	, ,		[D]		
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/01/09 19:26	SU	RROGATE R	ECOVERY	STUDY	
втех	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
4	Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg	Date Analyzed: 06/02/09 09:31	SU	RROGATE R	RECOVERY STUDY				
втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
1,4-Dıfluorobenzene	-	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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/02/09 09:52	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	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	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Dıfluorobenzene	0.0277	0.0300	92	80-120			
4-Bromofluorobenzene	0.0192	0.0300	64	80-120	*		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

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



Project Name: 14-Inch Vac to Jal - Legacy

Work Orders: 333729,

Project ID: 2009-092

Lab Batch #: 760926

Sample: 333729-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/02/09 11:41 SURRUGATE RECOVERY STUDY						
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	. -1		[D]	',	
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/02/09 12:24	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	(,	(-)	[D]			
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:

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	
Analytes			1 ' '			
1,4-Dıfluorobenzene	0 0251	0.0300	84	80-120		
4-Bromofluorobenzene	0.0279	0.0300	93	80-120		

Lab Batch #: 760926

Sample: 333729-013 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/02/09	13:08 SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
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					
BTE	X 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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal - Legacy

'ork Orders: 333729,

Project ID: 2009-092

Lab Batch #: 760926

Sample: 334047-004 S / MS

Matrix: Soil

Units: mg/kg Date Analyzed: 06/02/09 14:12 SURROGATE RECOVERY STUDY						•
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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:

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	Control Limits %R	Flags	
Analytes			[D]			
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:

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	Control Limits %R	Flags	
Analytes			[D]			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/01/09 12:46	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			(2)		
I-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		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits, data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

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



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 RECOVE						
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	[]	[-,	[D]		
1-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				
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		128	100	128	70-135	
o-Terphenyl		53.0	50.0	106	70-135	

Lab Batch #: 760837

Sample: 333729-023 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 14:20	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-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						
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			D				
1-Chlorooctane		92.8	100	93	70-135			
o-Terphenyl	, , <u>, , , , , , , , , , , , , , , , , </u>	49.5	50.0	99	70-135			

Lab Batch #: 760837

Sample: 333729-025 / SMP

Batch:

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
			` '		
1-Chlorooctane	93.4	100	93	70-135	
o-Terphenyl	48 7	50.0	97	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal - Legacy

'ork Orders: 333729,

Project ID: 2009-092

Lab Batch #: 760837

Sample: 333729-026 / SMP

Matrix: Soil Batch: 1

Units: mg/kg Date Analyzed: 06/01/09 15:29	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	51.8	50.0	104	70-135		

Lab Batch #: 760837

Sample: 333729-027 / SMP

Batch:

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		
	<u> </u>						
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			נשו		
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	44.7	50.0	89	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

[\]ll results are based on MDL and validated for QC purposes.



Project Name: 14-Inch Vac to Jal - Legacy

Work Orders: 333729,

Project ID: 2009-092

Lab Batch #: 760842

Sample: 531073-1-BSD / BSD

Matrix: Solid Batch: 1

Units: mg/kg	Date Analyzed: 06/01/09 13:35	SURROGATE RECOVERY STUDY						
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/01/09 14:00 SURROGATE RECOVERY STUDY						
TPH By SW8015	Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes				[D]		
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	Date Analyzed: 06/01/09 14:25 SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			[-]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 14:50	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			[10]		
I-Chlorooctane	85.0	100	85	70-135	
o-Terphenyl	55.2	50.0	110	70-135	

Lab Batch #: 760842

Sample: 333729-003 / SMP

Batch:

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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal - Legacy

'ork Orders: 333729,

Lab Batch #: 760842

Sample: 333729-004 / SMP

Project ID: 2009-092

Ratch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/01/09 15:40 、	SU	RROGATE RI	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	[A]	[15]	[D]	/UK	
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/01/09 16:05	St	RROGATE R	ECOVERY	STUDY	•
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		124	100	124	70-135	
o-Terphenyl		47.4	50.0	95	70-135	

Lab Batch #: 760842

Sample: 333729-006 / SMP

Batch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/01/09 16:30	SU	RROGATE R	ECOVERY	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	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
I-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	SU	RROGATE RI	ECOVERY S	STUDY	
TPH By SW8015 Mod Analytes		Amount Found [A]	True Amount [B]	Recovery Limits %R %R [D]		Flags
I-Chlorooctane		97.1	100	97	70-135	
o-Terphenyl		52.1	50.0	104	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal - Legacy

Work Orders: 333729,

Project ID: 2009-092

Lab Batch #: 760842

Sample: 333729-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 17:45		SURROGATE RECOVERY STUDY					
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
1-Chlorooctane		102	100	102	70-135		
o-Terphenyl		52 3	50.0	105	70-135		

Lab Batch #: 760842

Sample: 333729-010 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	TPH By SW8015 Mod Analytes Pound [A] Analytes	SU	SURROGATE RECOVERY STUDY				
ТРН		Found	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	Analytes	96.4	100	96	70-135		
o-Terphenyl		48.9	50.0	98	70-135		

Lab Batch #: 760842

Sample: 333729-011 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 19:00	SU	RROGATE RI	ECOVERY S	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

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 19:24	St	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			{D}		
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 760842

Sample: 333729-013 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 19:49	St	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	57.1	50.0	114	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal - Legacy

Vork Orders: 333729,

Sample: 333729-014 / SMP

Project ID: 2009-092

Lab Batch #: 760842

1 . Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09	20:14	KKUGAIE K	ECUVERY	SIUDI	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		127	[D]	/***	
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	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 21:28	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
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:

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	l				
o-Terphenyl	50.6	. 50.0	101	70-135					

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



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 80	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	· Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01	1/09 22:43 SU	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes	Ì		[D]	}					
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 2	3:08 SU	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes		,	[D]						
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 23:3	3 SU	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







Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Analyst: ASA

Date Prepared: 05/30/2009

Project ID: 2009-092

Date Analyzed: 05/31/2009

Lab Batch ID: 760705

Sample: 530985-1-BKS

Batch #: 1

Matrix: Solid

linits: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Olitis, 5 5											
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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 .										
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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	150
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

Date Prepared: 06/01/2009 Analyst: ASA

Project ID: 2009-092

Date Analyzed: 06/02/2009

Lab Batch ID: 760926

Sample: 531104-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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	l	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

Lab Batch ID: 760837

Sample: 531068-1-BKS

Date Prepared: 06/01/2009

Batch #: 1

Date Analyzed: 06/01/2009

Matrix: Solid

Units: mg/kg

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

Work Order #: 333729

Analyst: BHW

Date Prepared: 06/01/2009

Project ID: 2009-092

Date Analyzed: 06/01/2009

Lab Batch ID: 760842

Sample: 531073-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY						ΟΥ				
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]		,		
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 - MS / MSD Recoveries

Project Name: 14-Inch Vac to Jal - Legacy



Work Order #: 333729

Project ID: 2009-092

Lab Batch ID: 760705

QC- Sample ID: 333729-004 S

Batch #:

Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 05/30/2009

Analyst: ASA

Reporting Units: mg/kg

N	MATRIX SPIK	E / MATRIX S	PIKE DUPLICATE	RECOVERY STUDY	
		T			-

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0023	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

QC- Sample ID: 333729-025 S

Batch #:

Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 06/01/2009

Analyst: ASA

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R		Duplicate Spiked Sample Result F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	1100011 [2]	[G]	,,	, , ,	, , , , , ,	
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	



Form 3 - M 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

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Date Analyzed: 06/02/2009

Date Prepared: 06/01/2009

Analyst: ASA

Reporting Units: mg/kg

Analyst: ASA

MATMA STIRE / MATMA STIRE DOT LICATE RECOVERT STODI											
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0039	0.1162	0.0695	56	0.1162	0.0599	48	15	70-130	35	х
Toluene	0.0316	0.1162	0.0582	23	0.1162	0.0535	19	8	70-130	35	Х
Ethylbenzene	0.0370	0.1162	0.0447	7	0.1162	0.0421	4	6	71-129	35	х
m,p-Xylenes	0.0469	0.2323	0.1022	24	0.2323	0.0944	20	8	70-135	35	Х
o-Xylene	0.0475	0.1162	0.0447	0	0.1162	0.0418	0	7	71-133	35	х

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											
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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: 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

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY							•			
TPH By SW8015 Mod Analytes	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits %RPD	Flag
	[A]										
C6-C12 Gasoline Range Hydrocarbons	ND	1100	987	90	1100	1090	99	10	70-135	35	
C12-C28 Diesel Range Hydrocarbons	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



Sample Duplicate Recovery



Work Order #: 333729

Lab Batch #: 760246 Date Analyzed: 05/28/2009 **Project ID: 2009-092**

Date Prepared: 05/28/2009 Analyst: BEV

QC- Sample ID: 333729-001 D

Batch #:

1

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOV								
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag					
Analyte		[B]		ĺ						
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 #:

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	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

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Page 1 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 Manager.	Camille Bryant														_	Projec	t Na	me:	14-	inc	h Va	c to) Ja	11 - L	ega	су			
	Company Name	Basin Environmental Se	rvice T	echno	logies, LLC												P	rojec	1 5:	200	9-0	92								
	Company Address	P. O. Box 301															Proj	ect L	.oc:	Lon	Cos	anty,	NM					-		
	City/State/Zip:	Lovington, NM 88260													-20-1			Pi) #:	PA	A - J	. Her	чу							
	Telephone No:	(575)605-7210	\sim			Fax No		(50	5) 3	96-1	429				٠٠	ੋ)≁ ` Rep	ort Fo	mai	: :	X	Star	daro		ſ	7 78	LRP		D NI	POES	
	Sampler Signature:	(1 10x1-()	/E.w	<u>lu</u>	exavo	e mail.		cit	ory	ant	@t	oasi	in-c	ons	ulti	ng co								_				_		
Day day																			_			Ana	lyze	For				<u></u>	Π	
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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: Camille Bryant							,							_ Pı	ojec	t Ma	ne:	14-Ir	ch '	Vac	to.	Jai	- Le	gac	<u>y</u>		
	Company Name Basin Environme	ntal Servic	e Techn	ofogles, LLC											-	Pi	ojec	t#: j	2009	-092	!				,,,,,,,,,,,			
	Company Address: P. O. Box 301	1,1													-	Proje	ect L	oc: l	Lea C	ount	ly, N	M						
	City/State/Zip: Lovington, NM 8	9260													_		PC	#: <u> </u>	PAA-	J. H	lenn	,						
	Telephone No. (575)605-7210/	`			Fax No		150	5) 39	28.1	420					Repo	m Ea		-	X s				П	TRE	272	n	NPE	nee
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	Sampler Signature:	<u>wma</u>	<u> </u>	agen	- e-man		<u> </u>	JIV	16 160	<u>wu</u>	951	11-0	V. 12	ALI (I	ng.com					A	nafy	ze F	oc.				\exists	7
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Environmental Lab of Texas

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CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765 Phone: 432-563-1800 Fax: 432-583-1713

Project Manager Camille Bryant			-		<u>.</u>									Pr	ojec	n Na	me:	14-1	ıch	Vac	to:	Jai	· Le	gac	:Y		
Company Name Basin Environmental Se	rvice Te	chnoli	ogies; LLC			٠.		-							P	rojec	1#.	2009	-09	2						<u>.</u>	:
Company Address: P.O. Box 301	. ;	`		,		•		. "	7		,				Prob	oct L	oc:	.oa C	oun	ty. N	iM:					. '-	, , , , , , , , , , , , , , , , , , ,
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City/State/Zip: Lovington, NM 88260			- 152					,								P					10028 A 1015 A 1016 A 1		-				
Telephone No: (575)605-7210				Fax N	o:	<u>(5</u>	05)	396-1	429					Repor	t Fo	mat	: 1	X s	tand:	ard		Ц	TRR	₹P	Ļ	ુર્યોત [DES
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Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Ra	sim Plains			į,	
Date/ Time:	5127109 8:34	•			
Lab ID #:	33:3729				
-	a, me				
Initials	- Chrox	•			
	Sample Receip	t Checklist			
,-			-		Client Initials
#1 Temperature of contain	ner/ cooler?	(Yes	· No	-1.5 °C	
#2 Shipping container in g	ood condition?	(Yes)	No.	•	
#3 Custody Seals intact of	n shipping container/ cooler?	'Yes	No ·	Not-Present.	٠
#4 Custody Seals Intact or	n sample bottles/ container?	(Yes)	. No	Not Present ·	·
#5 Chain of Custody presi	ent?	Yes	No	-	
#6 Sample instructions co	mplete of Chain of Custody?	(FE3	No	,	
#7 Chain of Custody signs	ed when relinquished/ received?	(YES	No		-
#8 Chain of Custody agre	es with sámple label(s)?	. SY.ES	No"	ID written on Cont./ Lid	·
#9 Container label(s) legit		(Yes)	, No	Not Applicable	
#10 Sample matrix/ prope	rties agree with Chain of Custody?	(Yes)	No		
#11 Containers supplied b	y ELOT?	Yes	No		
#12 Samples in proper cor	ntainer/ bottle?	Yes	No .	See Below	
#13 Samples properly pre-	served?	(Yes)	No≥。	See Below	,
#14 Sample bottle's intact		Yes :	No	· .	
#15 Preservations docum	ented on Chain of Custody?	(Yes)	No		
#16 Containers document	ed on Chain of Custody?	(Yes)	No		
#17 Sufficient sample amo	ount for indicated test(s)?	(Yes)	No	See Below	
#18 All samples received	within sufficient hold time?'	⟨Yes'	No .	See Below	
#19 Subcontract of sample	e(s)?	Yes	No	Not Applicable	1
#20 VOC samples have z	ero headspace?	Yes	No'	Not Applicable	
Contact:	Variance Docu	umentation	· .	Date/ Time:	
			<u> </u>		
Corrective Action Taken:			· .(.)		
	*			<u> </u>	
	<u> </u>			···	
		-		_ :	
Check all that Apply	See attached e-mail/ fax Client understands and wo Cooling process had begu			•	

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

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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



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal - Legacy

Project ID:

2009-092

Work Order Number: 334002

Report Date: 03-JUN-09

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 reanalysis. 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 Analys ummary 334002 PLAINS ALL AMERICAN EH&S, Midland, TX

Melad

Project Id: 2009-092

Project Location: Jal, NM

Contact: Jason Henry

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

							I Toject MI		DICHE DATION.	,		
Lab Id:	334002-0	01	334002-0	002	334002-0	003	334002-	004		•		
Field Id:	Main Exc ESW-	1 @ 8'bgs	Main Exc ESW-	2 (a) 5'bgs	Main Exc ESW-	3 @ 3'bgs	Main Exc SSW	(@ 9 5'bgs				
Depth:												
Matrix:	SOIL		SOIL		SOIL		SOIL					
Sampled:	May-28-09 1	15:30	May-28-09	15:40	May-28-09	15.50	May-28-09	16.00				
Extracted:	Jun-01-09 0	8.00	Jun-01-09 (08:00	Jun-01-09 (08:00	Jun-01-09	08:00			•	
Analyzed:	Jun-01-09 1	6:32	Jun-01-09	l6:54	Jun-01-09	17:16	Jun-01-09	17:38			!	
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
	ND	0.0011	ND	0.0011	ND	0.0010	ND	0.0011				
	ND	0 0022	ND	0.0021	ND	0.0021	ND	0.0022				
-	ND	0.0011	· ND	0.0011	ND	0.0010	ND	0.0011				
	ND	0.0022	ND	0.0021	ND	0.0021	ND	0.0022				
			ND	0.0011	ND	0 0010	ND	0.0011				
	ND	0.0011	, ND	0.0011	ND	0 0010	ND	0.0011				
	ND	0.0011	ND	0.0011	ND	0.0010	ND	0.0011				
Extracted:												
Analyzed:	May-29-09	14:05	May-29-09	14:05	May-29-09	14:05	May-29-09	14:05				
Units/RL:	%	RL	%	RL	%	RL	%	RL				
	10.85	1 00	6.16	1.00	3.18	1 00	9.90	1.00				
Extracted:	Jun-01-09 1	2:14	Jun-01-09 i	14:45	Jun-01-09 1	4:45	Jun-01-09	14.45				•
Analyzed:	Jun-01-09 2	1:12	Jun-02-09 I		Jun-02-09	17.21	Jun-02-09	17 44			•	
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
	ND	16.8	ND	16.0	ND	15.5	ND	16.6				
	38 8	16.8	ND	16.0	59.9	15.5	ND	16.6				
	ND	16.8	ND	16.0	26.3	15.5	ND	16.6				
	38.8	16.8	ND	16.0	86.2	15.5	ND	16.6				
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Analyzed: Analyzed: Analyzed:	Field Id: Main Exc ESW- Depth: Matrix: SOIL Sampled: May-28-09 Extracted: Jun-01-09 Analyzed: Jun-01-09 Units/RL: mg/kg ND Extracted: May-29-09 Units/RL: % Extracted: Jun-01-09 Analyzed: May-29-09 Units/RL: mg/kg ND 38 8 ND	Field Id: Depth: Matrix: SOIL Sampled: May-28-09 15:30 Extracted: Jun-01-09 08:00 Analyzed: Jun-01-09 16:32 Units/RL: mg/kg RL ND 0.0011 ND 0.0022 ND 0.0011 ND 0.0011 ND 0.0011 ND 0.0011 ND 0.0011 ND 0.0011 ND 0.0011 Extracted: Analyzed: May-29-09 14:05 Units/RL: % RL 10.85 1 00 Extracted: Jun-01-09 12:14 Analyzed: Jun-01-09 21:12 Units/RL: mg/kg RL ND 16.8 38 8 16.8 ND 16.8	Field Id: Main Exc ESW-1 @ 8*bgs May-28-09 15:30 May-28-09	Field Id: Main Exc ESW-1 @ 8*bgs Main Exc ESW-2 @ 5*bgs Depth: SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL May-28-09 15:40 Extracted: Jun-01-09 08:00 Jun-01-09 08:00 Jun-01-09 16:54 Impykg RL Impykg RL	Field Id: Main Exc ESW-1 @ 8*bgs Main Exc ESW-2 @ 5*bgs Main Exc ESW-Depth:	Field Id: Depth: Main Exc ESW-1 @ 8*bgs Main Exc ESW-2 @ 5*bgs Main Exc ESW-3 @ 3*bgs Matrix: SOIL May-28-09 15:50 Extracted: Jun-01-09 08:00 May-09 09 17:01 MD 0.00011 MD 0.00011 MD 0.00011 MD 0.00011 MD 0.00011 MD 0.00011	Lab Id: 334002-001 334002-002 334002-003 334002-003 334002-003 334002-003 334002-003 334002-003 334002-003 334002-003 334002-003 334002-003 334002-003 334002-003 Main Exc ESW-3 @ 3bgs May-28-09 15:50 May-28-09 15	Lab Id: 334002-001	Lab Id: 334002-001	Lab Id: 334002-001 334002-002 334002-003 334002-004 Main Exc ESW-1 @ 8bgs Main Exc ESW-2 @ 5bgs Main Exc ESW-3 @ 3bgs Main Exc ESW @ 9 5bgs Depth: Marrix: SOIL May-28-09 15:50 May-28-09 16:00 Jun-01-09 08:00 Jun-01-09 17:16 Jun-01-09 17:16 Jun-01-09 17:16 Jun-01-09 17:16 Jun-01-09 17:16 Jun-01-09 17:16	Lab Id: 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 ESW-3 (@ 3*bgs) Main Exc ESW-9 (§ 5*bgs) Main Exc ESW-3 (@ 3*bgs) Main Exc ESW-9 (§ 5*bgs) Main Exc ESW-3 (@ 3*bgs) Main Exc ESW-9 (§ 5*bgs) Main Exc ESW-9 (§ 5*bgs) Main Exc ESW-9 (§ 5*bgs) Main Exc ESW-3 (@ 3*bgs) Main Exc ESW-9 (§ 5*bgs) Main Exc ESW-9 (9 5*bgs) Main Exc ESW-9 (9 5*bg)

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 Laborationes XENCO Laborationes assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount involved 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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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



Project Name: 14" Vac to Jal - Legacy

'ork Orders: 334002,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 531040-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 06/01/09 09:29	l so	RROGATE RI	COVERY	STUDY	
BTEX by EPA 8021B	Amount Found {A}	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		, ,	[D]		
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	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

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: 334002-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/01/09 16:32	SURROGATE RECOVERY STUDY					
. ВТЕХ	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
1,4-Dıfluorobenzene		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						
ВТЕ	X 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		0.0232	0.0300	77	80-120	*		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal - Legacy

Work Orders: 334002,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 334002-003 / SMP

Matrix: Soil Batch:

Units: mg/kg	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 17:3	8 SU	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
Analytes	0.0077	0.0200		00.120				
1,4-Dıfluorobenzene	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:

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	Control Limits %R	Flags	
Analytes			[D]			
1,4-Dıfluorobenzene	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:

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	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	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:

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	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	42.0	50.0	84	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits, data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal - Legacy

'ork Orders: 334002,

Lab Batch #: 760837

Project ID: 2009-092

Sample: 531068-1-BSD / BSD

Batch: 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	Control Limits %R	Flags	
Analytes	(,	[-,	[D]		-	
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:

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	Control Limits %R	Flags
Analytes	• •	, ,	[D]		
1-Chlorooctane	92.3	100	92	70-135	
o-Terphenyl	47.0	50.0	94	70-135	<u> </u>

Lab Batch #: 760837

Sample: 334002-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/01/09 21:12	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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:

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	5/01/09 21:58 SU	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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal - Legacy

Work Orders: 334002,

Sample: 531173-1-BKS / BKS

Project ID: 2009-092

Lab Batch #: 761030

Batch:

Matrix: Solid

Units: mg/kg	Date Analyzed: 06/02/09 15:49	SURROGATE RECOVERY STUDY								
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes	6-3	,	[D]						
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	Units: mg/kg Date Analyzed: 06/02/09 16:12		SURROGATE RECOVERY STUDY								
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
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	SU	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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/02/09 16:58	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes			[D]						
I-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 TPH By SW8015 Mod		SURROGATE RECOVERY STUDY								
		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
An	alytes			[D]						
1-Chlorooctane		105	100	105	70-135	-				
o-Terphenyl		54.0	50.0	108	70-135					

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal - Legacy

'ork Orders: 334002,

Lab Batch #: 761030

Sample: 334002-004 / SMP

Project ID: 2009-092

Batch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/02/09 17:44	SURROGATE RECOVERY STUDY								
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R {D}	Control Limits %R	Flags				
	Allalytes			1 , ,						
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/02/09 21:56	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/02/09 22:18	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
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



BS / BSD Recoveries



Project Name: 14" Vac to Jal - Legacy

Work Order #: 334002

Date Prepared: 06/01/2009 Analyst: ASA

Project ID: 2009-092

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										
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				L
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

Lab Batch ID: 760837

Sample: 531068-1-BKS

Date Prepared: 06/01/2009 Batch #: 1

Date Analyzed: 06/01/2009

Matrix: Solid

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
TPH By SW8015 Mod Analytes	Biank 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	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

Analyst: BHW Date Prepared: 06/01/2009

Project ID: 2009-092 **Date Analyzed:** 06/02/2009

Lab Batch ID: 761030 Sample: 531173-1-BKS Batch #: 1

Matrix: Solid

Units: mg/kg BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Units88							· -				
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
C6-C12 Gasoline Range Hydrocarbons	ND	1000	877	88	1000	873	87	0	70-135	3,5	
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 - MS / MSD Recoveries

Project Name: 14" Vac to Jal - Legacy



Work Order #: 334002

Project ID: 2009-092

Lab Batch ID: 760797

QC- Sample ID: 333729-025 S

Batch #:

Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 06/01/2009

Analyst: ASA

Reporting Units: mg/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021B	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample %R		Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag			
Analytes	[A]	Added [B]	[C]	[D]	(E)	Result [F]	%R [G]	%	%R	%RPD				
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	i			

Lab Batch ID: 760837

QC-Sample ID: 333729-027 S

Batch #:

Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 06/01/2009

Analyst: BHW

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUD									STUDY		
TPH By SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%K [G]	76	% K	%RPD	
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

QC- Sample ID: 334002-004 S

Batch #:

Matrix: Soil

Date Analyzed: 06/02/2009

Date Prepared: 06/01/2009

Analyst: BHW

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

	WHITE STREET SHIP STREET STREET STREET										
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	-	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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) Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E



Percent Moisture

Sample Duplicate Recovery



Project Name: 14" Vac to Jal - Legacy

Work Order #: 334002

Lab Batch #: 760577 Date Analyzed: 05/29/2009

Project ID: 2009-092

Date Prepared: 05/29/2009 Analyst: JLG

QC-Sample ID: 333999-001 S D

Analyte

Batch #:

2.91

1

5.39

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte	' '	[B]			

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

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Xenco Laboratories The Environmental Lab of Texas		•	CHAIN C 12600 West I-20 Eas Odessa, Texas 7976		ECORD		ALYSIS Phone: 4 Fax: 4	32-563-	1800	,	•
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Company Name RASIN SA	NIRON	MEITAL			Project	#: <u>2</u>	<i>209 -</i>	-07	<u>'2`</u>		
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City/State/Zip: Louisto	~ NIM	EBU10			PO	a: <u>P</u> A	A-1		الما	M	
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Environmental Lab of Texas Variance/ Corrective Action Report- Sample Log-In

Client:	Plains /Basin	•	12.7.7°3			
Date/ Time:						141.00
Date/, rime;	al .					
Lab ID#	3334002					
Initials.	JMF	1				
	Sample Receipt	Checklist			Client Initial	_
#1 Tempera	ature of container/ cooler?	(Yes)	No	4.5 .0		i
	container in good condition?	Yeso.	- No	413		1.
	Seals intact on shipping container/ cooler?	Yes	- No	Not Present	 	
	Seals intact on sample bottles/ container? //abr)	(Yes	No	Not Present	 	† · .
	Custody present?	(Yes)	No	1*	 	1
	instructions complete of Chain of Custody?	(Yes)	No		 	1
	Custody signed when relinguished/ received?	(Yes)	No .		 	1 `
	Custody agrees with sample label(s)?	(Yes)	No.	ID written on Cont./ Lid	 	· ·
	er label(s) legible and intact?	(Yess	No.	Not Applicable	 	ļ. · ·
	matrix/ properties agree with Chain of Custody?	(Yes)	No	Not ripplicable .		1.
	ers supplied by:ELOT?	(Yes)	No	1 2 2 2 2 2	 	4:
	s in proper container/-bottle?	(Yes)	No	See Below	 	∮ /. → .
	s properly preserved?	(Yes)	No .	See Below	21.81.20	1527
	bottles intact?	(Yes-	No.	7020.000	 	13.5
	valions occumented on Chain of Custody?	(Yes)	No		1 24.1.	7.3
	ers documented on Chain of Custody?	(Yes	No		1 : : :	∤ ` • •
	nt sample amount for indicated test(s)?	(Yes)	- No	See Below	 	1: .
	ples received within sufficient hold time?	(Yes)	. No	See Below	1-2	1
	tract of sample(s)?	Yes	No	Not Applicable	124.14. 1	1
	amples have zero headspace?	(Yes:)	No	Not Applicable	1 3	
<u></u>		1 1 1	· · · · ·	, .vetrappiidable		
	Variance Docum	nentation			, , , , , ,	
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Contact.	Contacted by:	. 1		Date/ Time:		
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Check all that						
:	Client understands and would				•	
	Cooling process had begun s	snortly 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)

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





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- LegacyProject 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

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 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
M _. W-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



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

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



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal- Legacy

Proiect 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-Bromoflurorobenzene 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 reanalysis. 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



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



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 reanalysis. 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 Id: 2009-092

Project Location: Lea County, NM

Contact: Jason Henry

Project Name: 14-Inch Vac to Jal-Legacy

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
Analysis Requested	Field Id:	MW-1 @ 5'	MW-1 @ 15'	MW-1 @ 25'	MW-1 @ 35'	MW-1 @ 45'	MW-1 @ 50'
Analysis Requesteu	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	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
Anions by EPA 300 Extracte							
	Analyzed:	Jul-31-09 07:55	Jul-31-09 07.55	Jul-31-09 07:55	Jul-31-09 07:55	Jul-31-09 07:55	Jul-31-09 07:55
<u> </u>	Units/RL:	mg/kg RI	mg/kg RL				
Chloride		53.4 6.1	23.0 6.77	10.3 5.41	12.5 5.39	22.1 5.14	19.6 5.22
BTEX by EPA 8021B Extracte		Jul-09-09 17:00	Jul-09-09 17:00	Jul-09-09 17:00	Jul-11-09 11:15	Jul-11-09 10:00	Jul-11-09 10:00
Analyze		Jul-10-09 01:26	Jul-10-09 02:09	Jul-10-09 07:30	Jul-13-09 10:08	Jul-12-09 15:37	Jul-12-09 15:18
	Units/RL:	mg/kg RI			mg/kg RL	mg/kg RL	mg/kg RL
Benzene		1.447 0.0611	_		0.5556 0.2697	ND 0.0010	ND 0.0010
Toluene		13.56 0.1222		18.58 0.2163	10.74 0.5394	0.0127 0.0021	ND 0.0021
Ethylbenzene		10.15 0.061	8.475 0.0338		17.45 0.2697	0.0642 0.0010	ND 0.0010
m,p-Xylenes		14.23 0.1222		29.75 0.2163	30.49 0.5394	0.1268 0.0021	0.0025 0.0021
o-Xylene		6.562 0.061			11.55 0.2697	0.0578 0.0010	ND 0.0010
Total Xylenes		20.792 0.061	17.868 0.0338		42.04 0.2697	0.1846 0.0010	0.0025 0.0010
Total BTEX		45.949 0.061	39.81 0.0338	79.4979 0.1082	70.7856 0.2697	0.2615 0.0010	0.0025 0.0010
TPH By SW8015 Mod	Extracted:	Jul-07-09 12:24	Jul-07-09 12:24	Jul-07-09 12:24	Jul-07-09 12.24	Jul-07-09 12:24	Jul-07-09 12:24
	Analyzed:	Jul-07-09 18:57	Jul-07-09 19:22	Jul-07-09 19:47	Jul-07-09 20:12	Jul-07-09 20:37	Jul-07-09 21:02
	Units/RL:	mg/kg RI	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		731 183	551 101	1950 81.1	66.8 16.2	98.4 15.3	336 78.3
C12-C28 Diesel Range Hydrocarbons		2310 183	1980 101	7270 81.1	827 16.2	1060 15.3	2910 78.3
C28-C35 Oil Range Hydrocarbons		ND 183	126 101	435 81.1	51.6 16.2	70.7 15.3	195 78.3
Total TPH		3041 183	2657 101	9655 81.1	945.4 16.2	1229.1 15.3	3441 78.3

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Certificate of Analys. Jummary 337175 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2009-092

Project Location: Lea County, NM

Contact: Jason Henry

Project Name: 14-Inch Vac to Jal-Legacy

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

Report Date: 03-AUG-09

	•							Project Mai	ager:	Brent Barron,	11		
	Lab Id:	337175-0	001	337175-0	02	337175-0	03	337175-0	04	337175-0	05	337175-00	06
Analysis Pagyastad	Field Id:	MW-1@	5'	MW-1 @	15'	MW-1 @	25'	MW-1 @	35'	MW-1 @	45'	MW-1 @ :	50'
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
·	Sampled:	Jul-01-09 (9:30	Jul-01 - 09 0	9:50	Jul-01-09 1	0:00	Jul-01-09 1	0:20	Jul-01-09 1	0:45	Jul-01-09 11	1:15
Percent Moisture	Extracted:												
/	Analyzed:	Jul-06-09	12:45	Jul-06-09 1	2:45	Jul-06-09 1	2:45	Jul-06-09 1	2:45	Jul-06-09 1	2:45	Jul-06-09 12	2:45
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		18.20	1.00	26.12	1.00	7.55	1.00	7.30	1.00	2.63	1.00	4.21	1.00



Certificate of Analysis Summary 337175 PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Project Location: Lea County, NM

Contact: Jason Henry

Project Name: 14-Inch Vac to Jal-Legacy

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

Report Date: 03-AUG-09

Project Manager: Brent Barron, II

								Project Ma	nager:	Brent Barron,	, 11		
	Lab Id:	337175-0	07	337175-0	08	337175-0	09	337175-	010	337175-0	011	337175-	012
Annaturals Descripted	Field Id:	MW-1 @	55'	SB-2 @	5'	SB-2@	15'	SB-2 @	25'	SB-2 @	35'	SB-2 @	45'
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL	,	SOIL	,	SOIL	,
	Sampled:	Jul-01-09 1	2:05	Jul-01-09 1	3:10	Jul-01-09 1	3:40	Jul-01-09	14:10	Jul-01-09 1	14:35	Jul-01-09	15:10
	Extracted:												····· · · · -
Anions by EPA 300	Analyzed:	Jul-31-09 0	7:55	Jul-31-09 0	7:55	Jul-31-09 07:55		Jul-31-09	07:55	Jul-31-09 (07:55	Jul-31-09	07.55
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	UnivRL.	179	10.5	47.7	5.58	34.0	5.65	32.3	5.66	ND	5.15	51.2	5.29
DEEL ED OOM	Extracted:	Jul-09-09 1	7:00	Jul-11-09 1	2:05	Jul-11-09 11:15		Jul-11-09 10:00		Jul-09-09 17:00		Jul-11-09	12:05
BTEX by EPA 8021B	Analyzed:	Jul-10-09 1	3:18	Jul-14-09 0	0:55	Jul-13-09 (8:35	Jul-12-09	16:14	Jul-10-09	13:39	Jul-13-09	22:46
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene			0.0011		0.0279		0.0565		0.0011		0.0010	ND	0.0011
Toluene		ND	0.0021	2.410	0.0558	4.984	0.1130	ND	0.0023	ND	0.0021	ND	0.0021
Ethylbenzene		0.0068	0.0011	7.296	0.0279	2.384	0.0565	0.0019	0.0011	0.0032	0.0010	ND	0.0011
m,p-Xylenes		0.0094	0.0021	11.59	0.0558	9.315	0.1130	0.0058		0.0078	0.0021	ND	0.0021
o-Xylene		0.0083	0.0011	5.095	0.0279	3.829	0.0565	0.0032		1	0.0010	· ND	0.0011
Total Xylenes		0.0177	0.0011	16.685	0.0279	13.144	0.0565		0.0011	0.0113		ND	0.0011
Total BTEX		0.0245	0.0011	26.391	0.0279	20.7791	0.0565	0.0109	0.0011	0.0145	0.0010	ND	0.0011
Percent Moisture	Extracted:												
2 0100111101101110	Analyzed:	Jul-06-09 1	2:45	Jul-06-09 1	2.45	Jul-06-09 1	2:45	Jul-06-09	12:45	Jul-06-09	12:45	Jul-06-09	12:45
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4 84	1.00	10.46	1.00	11.47	1.00	11.60	1.00	2.83	1.00	5.47	1.00
TPH By SW8015 Mod	Extracted:	Jul-07-09 1	3:22	Jul-07-09 1	3:22	Jul-07-09 1	3:22	Jul-07-09	13:22	Jul-07-09	13:22	Jul-07-09	13:22
TITI Dy S WOOTS WILL	Analyzed:	Jul-08-09 0	1.35	Jul-08-09 0	2:01	Jul-08-09 (2:26	Jul-08-09	02:52	Jul-08-09	03:16	Jul-08-09	03:41
	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			15.8	904	83.8	555	16.9	21.1	16.9	ND	15.4	27.2	15.9
C12-C28 Diesel Range Hydrocarbons		392	15.8	3610	83.8	2210	16.9	196	16.9	57.8	15.4	261	15.9
C28-C35 Oil Range Hydrocarbons		27.6	15.8	141	83.8	107	16.9	ND	16.9	ND	15.4	20.2	15.9
Total TPH		445.4	15.8	4655	83.8	2872	16.9	217.1	16.9	57.8	15.4	308.4	15.9

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Project Location: Lea County, NM

Certificate of Analys Summary 337175 PLAINS ALL AMERICAN EH&S, Midland, TX

nelad

Project Name: 14-Inch Vac to Jal- Legacy

Project Id: 2009-092

Contact: Jason Henry

Project Name: 14-Inch Vac to J

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

Report Date: 03-AUG-09

oject Location. Lea County, NWI			,					Project Ma	nager:	Brent Barron,	, II		
	Lab Id:	337175-0	13	337175-0	014	337175-0)15	337175-	016	337175-0	017	337175-0	018
Analysis Requested	Field Id:	SB-2@	50'	SB-2 @	55'	SB-3 @	5'	SB-3 @	15'	SB-3 @	25'	SB-3 @	35'
Analysis Requesieu	Depth:					·							
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	,	SOIL	,
	Sampled:	Jul-01-09 1	5·40	Jul-01-09 1	16:10	Jul-02-09 (9:50	Jul-02-09 10:15		Jul-02-09 10:35		Jul-02-09	11:05
Anions by EPA 300	Extracted:												
	Analyzed:	Jul-31-09 (7:55	Jul-31-09 (07:55	Jul-31-09 (7:55	Jul-31-09	07:55	Jul-31-09	13:25	Jul-31-09	13:25
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		471	471 10.7		22.4	152 10.6		73.0	5.43	54.4	5.53	24.8	5.19
BTEX by EPA 8021B	Extracted:	Jul-11-09	Jul-11-09 10:00		10:00	Jul-11-09 1	1:15	Jul-11-09	12:05	Jul-11-09	12:05	Jul-09-09	17:00
	Analyzed:	Jul-12-09	Jul-12-09 12:50		Jul-12-09 15:55		Jul-13-09 09:31		01:13	Jul-14-09 (02:26	Jul-10-09	11:30
•	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.0011	ND	0.0011	0.0644	0.0528	ND	0.0272	. ND	0.5530	ND	0.0010
Toluene			0.0021		0.0022	1.411		0.6387		2.969	1.106	ND	0.0021
Ethylbenzene			0.0011		0.0011		0.0528		0.0272		0.5530	ND	0.0010
m,p-Xylenes			0.0021		0.0022	2.708			0.0543	7.355	1.106	ND	0.0021
o-Xylene			0.0011	 	0.0011	0.9809			0.0272	2.875		ND	0.0010
Total Xylenes			0.0011		0.0011	3.6889			0.0272		0.5530	ND	0.0010
Total BTEX		ND ND	0.0011	ND	0.0011	6.7683	0.0528	9.7267	0.0272	17.728	0.5530	ND	0.0010
Percent Moisture	Extracted:	•										,	
	Analyzed:	Jul-06-09 1	2:45	Jul-06-09 1	12:45	Jul-06-09 1	2:45	Jul-06-09	12:45	Jul-06-09	12:45	Jul-06-09	12:45
•	Units/RL:	%	RL	.%	RL	%	RL	. %	RL	%	RL	%	RL
Percent Moisture		6.52	1.00	10.91	1.00	5.24	1.00	7.94	1.00	9.58	1.00	3.61	1.00
TPH By SW8015 Mod	Extracted:	Jul-07-09 1	3:22	Jul-07-09 1	13:22	Jul-07-09 1	3:22	Jul-07-09	13:22	Jul-07-09	13:22	Jul-07-09	13:22
1111 By 5 (10015 11100	Analyzed:	Jul-08-09 (4:06	Jul-08-09 ()4:30	Jul-08-09 0	14:55	Jul-08-09	05:20	Jul-08-09 (06:10	Jul-08-09 (06:35
	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		19.6	16.0	16.8	16.8	1550	79.0	477	81.3	887	82.9	ND	15.6
C12-C28 Diesel Range Hydrocarbons		105	16.0	86.8	16.8	4450	79.0	2660	81.3	4560	82.9	103	15.6
C28-C35 Oil Range Hydrocarbons		ND	16.0	ND	16.8	226	79.0	155	81.3	268	82.9	ND	15.6
Total TPH		124.6	16.0	103.6	16.8	6226	79.0	3292	81.3	5715	82.9	103	15.6

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Certificate of Analysis Summary 337175 PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Project Name: 14-Inch Vac to Jal-Legacy

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

	,							Project Manager:	Dient Darron, 11	
	Lab Id:	337175-0	019	337175-0)20	337175-0	21			
Analysis Page astad	Field Id:	SB-3 @	45'	SB-3 @	50'	SB-3 @ 5	55'			
Analysis Requested	Depth:									
	Matrix:	SOIL		SOIL		SOIL				
i	Sampled:	Jul-02-09	11:30	Jul-02-09 1	1:55	Jul-02-09 1	2:25			
Anions by EPA 300	Extracted:							,		
Amons by E171500	Analyzed:	Jul-31-09	13:25	Jul-31-09	13:25	Jul-31-09 1	3:25			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Chloride		17.2	5.13	8.94	5.12	24.1	5.14			
BTEX by EPA 8021B	Extracted:	Jul-09-09	17:00	Jul-09-09	7:00	Jul-09-09 1	7:00			
212/10 J 21/10 02/12	Analyzed:	Jul-10-09	11:52	Jul-10-09	12:13	Jul-10-09 1	2:35			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Benzene		ND	0.0010	ND	0.0010	ND	0.0010			
Toluene		ND	0.0021		0.0020	0.0035				
Ethylbenzene		0.0023		0.0015		0.0142				
m,p-Xylenes		0.0054		0.0035		0.0305				
o-Xylene		0.0028		0.0018		0.0137				
Total Xylenes		0.0082		0.0053		0.0442				
Total BTEX		0.0105	0.0010	0.0068	0.0010	0.0619	0.0010			
Percent Moisture	Extracted:									
	Analyzed:	Jul-06-09	12:45	Jul-06-09	12:45	Jul-06-09 1	2:45			
	Units/RL:	%	RL	%	RL	%	RL			
Percent Moisture		2.58	1.00	2.27	1.00	2.65	1.00			
TPH By SW8015 Mod	Extracted:	Jul-07-09	13.22	Jul-07-09	13:22	Jul-07-09 1	3:22			
	Analyzed:	· Jul-08-09	06.59	Jul-08-09 (7:24	Jul-08-09 0	7:48			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
C6-C12 Gasoline Range Hydrocarbons		17.3	15.3	ND	15.3	23.3	15.4			
C12-C28 Diesel Range Hydrocarbons		113	15.3	72.2	15.3	159	15.4			
C28-C35 Oil Range Hydrocarbons		18.0	15.3	ND	15.3	18.2	15.4			
Total TPH		148.3	15.3	72.2	15.3	200.5	15.4			

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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	(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



Project Name: 14-Inch Vac to Jal-Legacy

Work Orders: 337175,

Project ID: 2009-092

Lab Batch #: 765019

Sample: 533394-1-BKS / BKS

Matrix: Solid

Units: mg/kg Date Analyzed: 07/09/09 22:13	. SU	RROGATE R	ECOVERY :	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			(2)		
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	SU	RROGATE R	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			(12)		
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

Batch:

Matrix: Solid

Units: mg/kg Date Anal	yzed: 07/09/09 23:17	SU	RROGATE RI	ECOVERY	STUDY	
BTEX by EPA 80	21B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes				[D]		
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	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/10/09 02:09	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal- Legacy

'ork Orders: 337175,

Project ID: 2009-092

Lab Batch #: 765019

Sample: 337175-003 / SMP

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 07/10/09 07:30	st	RROGATE RI	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	1 -7	,-,	[D]		
I,4-Dıfluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0530	0.0300	177	80-120	*

Lab Batch #: 765019

Sample: 337025-001 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 07/10/09 08:17	SU	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery	Control Limits %R	Flags
Analytes			[D]		
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

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/10/09 08:39	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	',		[D]		
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

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 07/10/09 09:22	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE R	ECOVERY	STUDY	•
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0361	0.0300	120	80-120	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal- Legacy

Work Orders: 337175,

Sample: 533433-1-BLK / BLK

Project ID: 2009-092

Lab Batch #: 765081

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 07/10/09 10:26		SURROGATE RECOVERY STUDY					
втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
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:

Matrix: Soil

Units: mg/kg Date Analyzed:	07/10/09 11:30	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			(D)		J		
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 An	alyzed: 07/10/09 11:52	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery Limits %R %R		Flags	
Analytes				[D]			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/10/09 12:13		SURROGATE RECOVERY STUDY					
втех	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/10/09 12:35	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal-Legacy

'ork Orders: 337175,

Project ID: 2009-092

Lab Batch #: 765081

Sample: 337175-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/10/09 13:18		SURROGATE RECOVERY STUDY					
втех	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes	[,-,	(-)	{D}			
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	13	[2]	[D]	A)		
1,4-Dıfluorobenzene	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:

Matrix: Solid

Units: mg/kg Date Analyzed: 07/12/09 08:45	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]		•	
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	SU	RROGATE RI	ECOVERY S	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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal-Legacy

Work Orders: 337175,

Project ID: 2009-092

Lab Batch #: 765200

Sample: 337175-006 / SMP

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 07/12/09 1	5:18 SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Dıfluorobenzene	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

	U	nits:	mg/kg

Date Analyzed: 07/12/09 15:37

SURROGATE RECOVERY STUDY

Olitis, mg/kg Date Hadiyzed: 07/12/07 15.57					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes		1	[D]				
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
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:

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		
Amarytes					<u> </u>		
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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits, data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal-Legacy

Vork Orders : 337175,

Project ID: 2009-092

Lab Batch #: 765200

Sample: 337713-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 07/12/09 17:09	SURROGATE RECOVERY STUDY						
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes	Analytes	[28]	(6)	[D]]			
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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
Analytes			10,				
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 07/13/09 03:00	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Dıfluorobenzene	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						
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
•	Analytes			[D]				
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:

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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal-Legacy

Work Orders: 337175,

Sample: 337175-015 / SMP

Project ID: 2009-092

Lab Batch #: 765231

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 07/13/09 09:31	SU	RROGATE R	ECOVERY :	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/13/09 10:44	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0362	0.0300	121	80-120	*

Lab Batch #: 765231

Units: mg/kg

Sample: 337719-001 SD / MSD

Date Analyzed: 07/13/09 11:03

Matrix: Soil Batch: 1

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:

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	
• · · · · · · · · · · · · · · · · · · ·				22.142		
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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal-Legacy

∀ork Orders : 337175,

Project ID: 2009-092

Lab Batch #: 765323

Sample: 533559-1-BSD / BSD

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 07/13/09 21:50	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Dıfluorobenzene	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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene .	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0164	0.0300	55	80-120	*

Lab Batch #: 765323

Sample: 337175-012 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/13/09 22:46	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
I,4-Dıfluorobenzene	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	
I,4-Dıfluorobenzene	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	COVERY S	STUDY			
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
₽					
I,4-Dıfluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0532	0.0300	177	80-120	**

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal-Legacy

Work Orders: 337175,

Project ID: 2009-092

Lab Batch #: 765323

Sample: 337175-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/14/09 02:26	Su	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
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

Batch:

Matrix: Soil

Units: mg/kg

Date Analyzed: 07/14/09 05:31

SURROGATE RECOVERY STUDY

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

Lab Batch #: 765323

Sample: 337175-012 SD / MSD

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/14/09 07:37	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 07/07/09 11:21	SU	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount {B}	Recovery %R	Control Limits %R	Flags		
Analytes	•		[D]				
1-Chlorooctane	111	100	111	70-135			
o-Terphenyl	43.9	50 0	88	70-135			

Lab Batch #: 764775

Sample: 533254-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 07/07/09 11:46	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	()	[-,	[D]			
1-Chlorooctane	107	100	107	70-135		
o-Terphenyl	41 4	50.0	83	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal-Legacy

Vork Orders: 337175,

Project ID: 2009-092

Lab Batch #: 764775

Sample: 533254-1-BLK / BLK

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

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 07/07/09 18:57	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
I-Chlorooctane	95.9	.100	96	70-135			

42.5

Lab Batch #: 764775

o-Terphenyl

Sample: 337175-002 / SMP

Batch:

Matrix: Soil

70-135

50.0

Units: mg/kg Date Analyzed: 07/07/09 19:22 SURROGATE RECOVERY STUI					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]	ļ	
1-Chlorooctane	103	99.8	103	70-135	
o-Terphenyl	48.2	49.9	97	70-135	

Lab Batch #: 764775

Sample: 337175-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/07/09 19:47 SURROGATE RECOVERY ST					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

Lab Batch #: 764775

Sample: 337175-004 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 07/07/09 20:12	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
I-Chlorooctane	104	100	104	70-135		
o-Terphenyl	51.8	50.0	104	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	, ,		[D]			
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					
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]	,		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/07/09 21:26	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	51 9	50.0	104	70-135	

Lab Batch #: 764775

Sample: 337224-001 SD/MSD

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/07/09 21:51	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 07/08/09 00:20 SURROGATE RECOVERY STUDY						
TPH By SW801	5 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			i	{D}		
1-Chlorooctane		113 ·	100	113	70-135	
o-Terphenyl		45.0	50.0	90	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal-Legacy

/ork Orders: 337175,

Project ID: 2009-092

Lab Batch #: 764777

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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]	,	
1-Chlorooctane .	118	100	118	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

Lab Batch #: 764777

Sample: 533256-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 07/08/09 01:11 SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	99.8	100	100	70-135	
o-Terphenyl	49.0	50.0	98	70-135	,

Lab Batch #: 764777

Sample: 337175-007 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 01:35 SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.8	50.0	100	70-135	

Lab Batch #: 764777

Sample: 337175-008 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 02:01 SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-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	
I-Chlorooctane	109	100	109	70-135		
o-Terphenyl	51.1	50.0	. 102	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal-Legacy

Work Orders: 337175,

Sample: 337175-010 / SMP

Project ID: 2009-092

Lab Batch #: 764777

Matrix: Soil Batch:

49.9

Units: mg/kg Date Analyzed: 07/08/09 02:52 SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	,		[D]		
1-Chlorooctane	94.0	99.7	94	70-135	

44.5

Lab Batch #: 764777

o-Terphenyl

Sample: 337175-011 / SMP

Batch:

Matrix: Soil

70-135

Units: mg/kg	Date Analyzed: 07/08/09 03:16	SURROGATE RECOVERY STUDY					
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]		•	
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 0	Inits: mg/kg Date Analyzed: 07/08/09 03:41 SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes			1~1			
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						
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	Analytes			[5]	1	
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 04:30 SURROGATE RECOVERY S					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	98.5	100	99	70-135	
o-Terphenyl	47.7	50.0	95	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal-Legacy

'ork Orders: 337175,

Project ID: 2009-092

Lab Batch #: 764777

Sample: 337175-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 04:55	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	,,,,	-1	[D]			
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	Control Limits %R	Flags	
V			<u> </u>			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 06:1	0 SU	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					
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
	Analytes						
1-Chlorooctane	·	101	100	101	70-135		
o-Terphenyl		48.8	50.0	98	-70-135		

Lab Batch #: 764777

Sample: 337175-019 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 06:59	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	99.8	99.5	100	70-135	
o-Terphenyl	48.0	49.8	96	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal- Legacy

Work Orders: 337175,

Project ID: 2009-092

Lab Batch #: 764777

Sample: 337175-020 / SMP

Matrix: Soil Batch: 1

Units: mg/kg	Date Analyzed: 07/08/09 07:24	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod Analytes		Amount Found [A]	Found Amount		Control Limits %R	Flags
1-Chlorooctane		98.3	100	98	70-135	
o-Terphenyl		46.6	50.0	93	70-135	

Lab Batch #: 764777

Sample: 337175-021 / SMP

Batch:

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY									
ТРН Ву S	W8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
An	alytes			[D]						
1-Chlorooctane		101	100	101	70-135					
o-Terphenyl		48.9	50.0	98	70-135					

Lab Batch #: 764777

Sample: 337175-007 S / MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 10:17	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

Lab Batch #: 764777

Sample: 337175-007 SD / MSD

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 07/08/09 10:42	SU	RROGATE RI	ECOVERY S	STUDY	•
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R D	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	47.7	50.0	95	70-135	

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



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	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags			
Analytes			[C]	[D]					
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 #:

BLANK/BLANK SPIKE RECOVERY STUDY										
Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags						
10.0	9.70	97	80-120	l						

Lab Batch #: 767307

Chloride

Anions by EPA 300

Analytes

Sample: 767307-1-BKS

ND

Blank

Result [A]

Matrix: Solid

Date Analyzed: 07/31/2009

Date Prepared: 07/31/2009

Analyst: LATCOR

Reporting Units: mg/kg

Reporting Cities. Ing/kg	ten #: 1	DLANK/B	LANK SPI	NE KEC	OVERY	STUDY
Anions by EPA 300	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags
Analytes.	[A]	[B]	Result [C]	%R [D]	%R	
Chloride .	ND	10.0	9.14	91	80-120	





Project Name: 14-Inch Vac to Jal-Legacy

Work Order #: 337175

Analyst: BRB

Date Prepared: 07/09/2009

Project ID: 2009-092 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								Y				
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Benzene	ND	0.1000	0.0776	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

Lab Batch ID: 765081

Sample: 533433-1-BKS

Date Prepared: 07/09/2009

Batch #: 1

Date Analyzed: 07/10/2009

Matrix: Solid

RI ANK /RI ANK SPIKE / RI ANK SPIKE DIPLICATE RECOVERY STUDY

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUFLICATE RECOVERT STUDT										
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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







Project Name: 14-Inch Vac to Jal-Legacy

Work Order #: 337175

Analyst: BRB

Date Prepared: 07/11/2009

Project ID: 2009-092 Date Analyzed: 07/13/2009

Lab Batch ID: 765231

Sample: 533520-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg		BLAN	K/BLANK S	SPIKE / B	LANK S	PIKE DUP	LICATE R	RECOVERY	Y STUDY	ľ
RTEX by FPA 8021R	Blank	Spike	Blank	Blank	Snike	Blank	Blk Snk	Τ,	Control	Co

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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 SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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





Project Name: 14-Inch Vac to Jal-Legacy

Work Order #: 337175

Analyst: BHW **Date Prepared: 07/07/2009** **Project ID: 2009-092**

Date Analyzed: 07/07/2009

Lab Batch ID: 764775

Sample: 533254-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. 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

Date Prepared: 07/07/2009

Date Analyzed: 07/08/2009

Lab Batch ID: 764777

Sample: 533256-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result {C}	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	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

QC-Sample ID: 339247-001 S

Date Analyzed: 07/31/2009

Project ID: 2009-092

Date Prepared:

07/31/2009

Analyst: LATCOR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	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	157	212	386	108	80-120					

Lab Batch #: 767307

Date Analyzed: 07/31/2009

Date Prepared: 07/31/2009

Analyst: LATCOR

QC- Sample ID: 337175-017 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	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	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 - MS / MSD Recoveries

Project Name: 14-Inch Vac to Jal-Legacy



Work Order #: 337175

Project ID: 2009-092

Lab Batch ID: 765019

QC- Sample ID: 337025-001 S

Batch #:

Matrix: Soil

Date Analyzed: 07/10/2009

Date Prepared: 07/09/2009

Depositing United marks

Analyst: BRB

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result C	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	(-,	[D]	[E]	(-)	[G]				
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	Х
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

QC- Sample ID: 337713-006 S

Batch #:

Matrix: Soil

Date Analyzed: 07/12/2009

Date Prepared: 07/11/2009

BRB Analyst:

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Reporting Units: mg/kg		M	ATRIX SPIKI	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]		,,,,,	,,,	
Benzene	ND	0.1123	0.0720	64	0.1123	0.0742	66	3	70-130	35	Х
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	



MSD Recoveries Form 3 - M

Project Name: 14-Inch Vac to Jal-Legacy



Work Order #: 337175

Project ID: 2009-092

Lab Batch ID: 765231

OC-Sample ID: 337719-001 S

Batch #: Matrix: Soil

Date Analyzed: 07/13/2009

Date Prepared: 07/11/2009

Analyst: BRB

Reporting Units: mg/kg

MATDIY SPIKE / MATDIY SPIKE DUPLICATE DECOVEDY STUDY

Reporting omes. mg ng	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]		Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Benzene	ND	0.1025	0.0713	70	0.1025	0.0682	67	4	70-130	35	х	
Toluene	ND	0.1025	0.0592	58	0.1025	0.0499	49	17	70-130	35	Х	
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

QC- Sample ID: 337175-012 S

Batch #:

Matrix: Soil

Date Analyzed: 07/14/2009

Date Prepared: 07/11/2009

Analyst: ASA

Reporting Units: mg/kg		M	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result C	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	{B}		[D]	[E]		[G]	,,		,	
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	Х
Ethylbenzene	ND	0.1058	0.0796	75	0.1058	0.0731	69	9	71-129	35	Х
m,p-Xylenes	ND	0.2116	0.1580	75	0.2116	0.1470	69	7	70-135	35	Х
o-Xylene	ND	0.1058	0.0780	74	0.1058	0.0709	· 67	10	71-133	35	Х

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



Form 3 - MS / 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 #:

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	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
C6-C12 Gasoline Range Hydrocarbons	729	1130	1840	98	1130	1870	101	2	70-135	35	

5230

Lab Batch ID: 764777

QC- Sample ID: 337175-007 S

3940

Batch #:

114

Matrix: Soil

133

70-135

5440

Date Analyzed: 07/08/2009

C12-C28 Diesel Range Hydrocarbons

Date Prepared: 07/07/2009

1130

BHW Analyst:

1130

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%K [G]	%	70K	76KPD	
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	



Sample Duplicate Recovery



Project Name: 14-Inch Vac to Jal-Legacy

Work Order #: 337175

Lab Batch #: 767305

07/31/2009

Project ID: 2009-092

Date Analyzed: 07/31/2009

Date Prepared:

Analyst: LATCOR

QC- Sample ID: 339247-001 D

Batch #:

Matrix: Soil

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

Lab Batch #: 767307

Date Analyzed: 07/31/2009

Date Prepared: 07/31/2009

Analyst: LATCOR

QC-Sample ID: 337175-017 D

Batch #:

Matrix: Soil

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

Lab Batch #: 764625

Date Analyzed: 07/06/2009

07/06/2009 Date Prepared:

Analyst: LATCOR

QC-Sample ID: 337166-001 D

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	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

Date Analyzed: 07/06/2009

Date Prepared: 07/06/2009

Analyst: LATCOR

QC- Sample ID: 337175-008 D

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE / SAMPLE DUPLICATE RECOVERY											
	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag							
Analyte		[B]										
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

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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:	Camillo Bryant								•						Pr	oject	Nan	na: <u>1</u>	4-in	ch V	ac	to J	al - I	Lega	ку							
	Company Name	Basin Environmental Ser	vice T	echnol	ogles, LLC								_				Pro	oject	#: <u>2</u>	009	092												
	Company Address:	P. O. Box 301														_	Proje	ct L	oc: L	ea C	ounty	y, NI	ч					_					
	City/State/Zip:	Lovington, NM 88250			-					_						_		PO	#; P	AA -	J. Ho	enry			M (Predometer 24 dt 72 br d TAT 4 OAV								
	Telephone No:	(575) 605-7210	5) 605-7210 Fax No: (505) 396-1429											Repor	n For	mat:	5	St	andar	nd -		Пт	RRP		ΠN	PDES	 S						
	Sampler Signature	<u> </u>																															
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			Jeginning Depth	Ę	100	<u>8</u>		of Containers							2	DW - Orlenting water GW - Groundwater NP - Konfessols		ğ.	Cations (Ce. Mg. Ne	g	8							Ž	TA				
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102			ä	Inding Depth	Date Sampled	Time Sumpled	old Filtered	Cottob # o		HWD,	_	H,50.	KOCH HOCH	Series Series	Other (Specify)	DW - Orfniang v CW - Groundw NP - Non-Fotab		4	8	SAR / ESP / CEC	ğ	/clatifica	1	4.	NORM			8	ğ				
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67		-1 @ 15'			7/1/09	0950	-	1		_	Ц		4	+	╀	SOIL	X	+	4	4	\dashv	4		X.	+	\vdash	-	+	×				
133	 	-1 @ 25'	<u> </u>		7/1/09	1000	<u> </u>	1	X		\dashv		4	+	╄-	SOIL	X	4	4	4	\vdash	4		X.	+	\vdash	-	+-	×				
[51]		-1 @ 35'	<u> </u>		7/1/09	1020	L	1	X		_	Щ	-	+	╀-	SOIL	X	4	4	4	\sqcup	-	-	×	+	\vdash	+	╀	×				
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600	MW	-1 @ 50'	<u> </u>	<u> </u>	7/1/09	1115	Ц	1	×		_		4	1	1	SOIL	X	4	4	1	\sqcup	4		×	4	Н	-	+	×				
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09	SB	-2 @ 5'	ļ	ļ	7/1/09	1310	Ц	1	X		4		4	_	↓_	SOIL	×	4	4	4	\sqcup	4	-+	×	+	\vdash	+	+	×				
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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:	ect Manager: Camille Bryant														Pro	ojec	Nan	nte: _	14-lr	ch	Vac	to .	Jal -	Les	јасу					
	Company Name	Basin Enviro	nmental Ser	vice To	echnol	ogles, LLC												Pr	oject	#: <u>]</u>	2009	-09	2								
	Company Address	P. O. Box 301	1	•			-										F	roje	ict Le	oc: j	es C	oun	ty, N	м							
	City/State/Zip:	Lovington, N	M 88260																PO	n: s	PAA-	· J. }	lonn	,							
	Telephone No	(575) 605-721			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Fax No.		(50	5) 30	18-14	źη					Report	Fa	rinat:	Ī	x s	tend	and		RRP NPDES						
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f (ab use only)			; <u>* * * 1</u>	Beginning Depth	Ending Depth	Date Sampled .	Time Sempled	ield Funed	otal #. of Containers			1,30,		۷			DW-Drinking water 5 Study CW - Groundwater 5 Selthor III	TPH, 4181 (015M) 50158		3	Antons (Cr. SO4, Alkabraty)	Meass As Ag Ba Cd Cr Po Ho Se			BTEX 6021B/030 or BIEK 8260		NO.R.W.		BISH YAT DA. Selected 12 4	USH IA! (We-schedule) za, a	
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CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odeasa, Texas 79765 Phone: 432-563-1890 Fax: 432-563-1713

	Project Manager: Camille Bry	ant															Pro	ject	Nam	s: <u>14</u>	-Inc	h V	ac t	o J	al -	Leg	acy			
	Company Name Basin Envir	onmental Serv	vice Te	chnol	ogies, LLC	-												Pro	ject	#: <u>20</u>	09-0	092								
	Company Address: P.O. Box 30	01															P	Project Loc: Les County, NM												
	City/State/Zip: Lovington, I	NM 88260														PO #: PAA - J. Henry														
	Telephone No: (575) 605-72			Fax No		(50	5) 3	08-14	29					Re	port	Fort	mat:	X	Stn	ndar	ď		П []	RRP	•	0	NPDE	s		
	Sampler Signature	<u>vaai</u>	18	کید	time	e-mail:		cit	ρηγ	ant@	D)ba	asir	1-00	กรน	ltın	g.α	<u>om</u>													٠,
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LAB # (lab use only)	FIELD CODE		Seginning Depth	Ending Depth	Date Samptod	Tune Samplod	iedd Filmand	Total #, of Containing	Kos .	нею,	Ď.	H,30,	NSch	None		DW - Orbinistry Water St. Study CW - Groundwater S. Solifsol	3	418.1 (SDISM	TPH: TX 1005 TX 1008	Anions (Cl. SO4, Assability)	SAR (ESP / CEC	Motans. As Ag Ba Ca Cr Fo Hg.	Votables		BTE (802 IB:D) or BTEX 8250	202			RUSH, TAT (Pre-Schedule) 24.	Standard TAT 4 DAY
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Environmental Lab of Texas

	Variance/ Corrective Action R	teport- Sampl	e Log-In			
Client	Basin Env. Plains			•		
Date/ Time:	7.6.09 12:35					
Lab ID#:	337175					
Initials:	<u>a</u> L	• .				
•	Sample Receir	t Checklist		,		
	- Contract of the contract of			, ,	Client Initial	
#1 Tempera	ture of container/ cooler?	Yes T	No			ĭ ·
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				Not Present	1	٠,
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						1
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				ii) written on Cont / Lid	 	;
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.#20 , VOC sa	mples have zero headspace?	Yes	No	Not Applicable .	L	ي ٠٠٠
	Variance Doc	umentation	•		∰÷ .	
Contact:	Contacted by:			Date/ Time:	<u>.</u>	- ,
Bonnedina						•
Regarding.						37 12
•					-	1
Corrective Ac	ction Taken:				, . · *	,.
• /		1		_ (· .	: ·,
		·····	······································			-3-3
Date/ Time: 331115 Lab ID #: 331115 Initials: CaL Sample Receipt Checklist Client Initials: #1 Temperature of container/ cooler? Yes No Yes No Not Present Not Not Not Present Not Not Not Not Not Not Not Not Not No						
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Check all tha					٠.	•
Client Plains Pla		•				
	L_1 Cooking process had begu	m snortly after	sampling	event		
	•					
				1		

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)

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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 - LegacyProject 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	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-3 @ 60'	S	Jul-02-09 12:35		337279-001

CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14-Inch Vac to Jal - Legacy

Project ID:

2009-092

Report Date: 04-AUG-09

Work Order Number: 337279

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 reanalysis. Samples affected are: 533433-1-BKS,337279-001. Matrix interference is suspected.

Batch: LBA-767458 Inorganic Anions by EPA 300

E300



Certificate of Analys Jummary 337279 PLAINS ALL AMERICAN EH&S, Midland, TX

energy and the second s

Project Id: 2009-092

Project Location: Lea County, NM

Contact: Jason Henry

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

Lab Id: SB-3 @ 60 Depth: Marix: SOIL Sampled: Jul-02-09 12:35	
Depth: Matrix: SOIL Jul-02-09 12:35	
Depth: Matrix: SOIL Jul-02-09 12:35	
Matrix: SOIL Jul-02-09 12:35 Jul-02-09 12:36 Jul-02-09 17:00	
Sampled: Jul-02-09 12:35	
Anions by EPA 300 Extracted:	
Analyzed:	
Chloride	
Chloride	
BTEX by EPA 8021B	
BIEA by EFA 8021B	
Benzene	
Benzene	
Toluene	
Ethylbenzene	
Description Description	
O-Xylene	
Total BTEX	
Percent Moisture	
Analyzed: Jul-07-09 16:00 Units/RL: % RL Percent Moisture 2.46 1.00	
Analyzed: Jul-07-09 16:00	
Units/RL:	
Percent Moisture 2.46 1.00	
Futurated 101.09.00.12.20	
TPH By SW8015 Mod	
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 involved 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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	(214) 902 0300 (210) 509-3334 (813) 620-2000 (305) 823-8500 (432) 563-1800



Project Name: 14-Inch Vac to Jal - Legacy

'ork Orders: 337279,

Project ID: 2009-092

Lab Batch #: 765081

Sample: 533433-1-BKS / BKS

Matrix: Solid

Units: mg/kg Date Analyzed: 07/10/09 09:2	2 80	SURROGATE RECOVERY STUDY									
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
Analytes			[D]								
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	SURRUGATE RECOVERY STUDY									
BTEX by EPA 8021B	Amount Found [A]	True Amount B	Recovery %R	Control Limits %R	Flags					
Analytes		(2)	[D]		•					
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 07/10/09 10:26	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Dıfluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 765081

Sample: 337279-001 / SMP

Batch:

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	Control Limits %R	Flags					
Analytes			{D}							
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									
ТРН	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		53.0	50.0	106	70-135						

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits, data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal - Legacy

Work Orders: 337279,

Project ID: 2009-092

Batch:

Lab Batch #: 764867

Sample: 533304-1-BSD / BSD

1 Matrix: Solid

Units: mg/kg	Date Analyzed: 07/08/09 15:30	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes	(1)	101	[D]	,,,,,					
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									
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
1-Chlorooctane		112	100	112	70-135	,					
o-Terphenyl		55.5	50.0	111	70-135						

Lab Batch #: 764867

Sample: 337279-001 / SMP

Batch: |

Matrix: Soil

Units: mg/kg	Date Analyzed: 07/08/09 16:22	SU	STUDY			
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	Marytes	108	99.9	108	70-135	
o-Terphenyl		55.1	50.0	110	70-135	

Lab Batch #: 764867

Sample: 337279-001 S / MS

Batch:

Matrix: Soil

Units: mg/kg Date Anal	its: mg/kg Date Analyzed: 07/08/09 19:25 SURROGATE RECOVERY STUDY								
TPH By SW8015	Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes				[D]					
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	nalyzed: 07/08/09 19:51 SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
	Analytes			12)					
1-Chlorooctane		129	99.9	129	70-135				
o-Terphenyl		54.2	50.0	108	70-135				

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



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	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags	
Analytes	17	121	[C]	[D]	/31		
Chloride	ND	10.0	9.93	99	80-120		





Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 337279

Analyst: BRB

Date Prepared: 07/09/2009

Project ID: 2009-092

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									
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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

Lab Batch ID: 764867

Sample: 533304-1-BKS

Date Prepared: 07/08/2009

Batch #: 1

Date Analyzed: 07/08/2009

Matrix: Solid

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[6]				
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

Project ID: 2009-092

Date Prepared: 08/03/2009

1

Analyst: LATCOR

QC- Sample ID: 337279-001 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	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 ·	46.1	103	150	101	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 - MS / 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 #:

Matrix: Soil

Date Analyzed: 07/08/2009

Date Prepared: 07/08/2009

Analyst: BHW

Reporting Units: mg/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY									
TPH By SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike Added	Duplicate Spiked Sample	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%K [G]	70	70 K	70KFD	
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	



Chloride

Sample Duplicate Recovery



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 337279

Lab Batch #: 767458

Date Analyzed: 08/03/2009

_ . _ .

Project ID: 2009-092

Date Prepared: 08/03/2009

Analyst: LATCOR

QC- Sample ID: 337279-001 D **Batch #:**

Matrix: Soil

SAMPLE/SAMPLE DUPLICATE RECOVERY Reporting Units: mg/kg Anions by EPA 300 **Control** Sample Parent Sample RPD Result Duplicate Limits Flag %RPD Result [A] [B] **Analyte**

Lab Batch #: 764742

Date Analyzed: 07/07/2009

Date Prepared: 07/07/2009

46.1

45.4

Analyst: BEV

20

2

QC- Sample ID: 337200-001 D

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE / SAMPLE DUPLICATE RECOVERY									
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag					
Analyte	(,	[B]			:					
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

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	(City/State/Zip:	Lovington,	NM 88250											-		PO	8: <u>P</u> A	A - J. I	Henry	·····		<u>.</u>	
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.

Environmental Lab of Texas

Variance/ Corrective A	Action Report- Samp	le Log-In			
Client Rasim / Plauns			•		•
Date/ Time: 67/07/09 10:15					
227276					
Lab ID# 3016 17					
Initials: OMen			•		
Sample	Receipt Checklist				•
				Client Initial	3 7
#1 Temperature of container/ cooler?		No			┥.
#2 Shipping container in good condition?	(Yes	No			Į. ·
#3 Custody Seals intact on shipping container/coole		No	Not Present		· .
#4 Custody Seals Intact on sample bottles/containe		No	- Not-Present		1 2 2
#5 Chain of Custody present?	(Yes)	. No	<i>'</i>	3,	1 . ''
#6 Sample instructions complete of Chain of Custod	y? (Yes)	No			j .
#7 · Chain of Custody signed when relinquished/ rece	ived? 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	• • •	1
#10 Sample matrix/ properties agree with Chain of C	ustody? (Yes)	No			٦٠.
#11" Containers supplied by ELOT?	Yes	-No			1
#12 . Samples in proper container/ bottle?	Yesi	- No	See Below	-	1 ' . ' .
#13 Samples properly preserved?	(Yés	No	See Below		1
#14- Sample bottles intact?	(Yēś	No	366 CE:0W		1
#15- Preservations documented on Chain of Custody		No ·		 	┥ .
#16 Containers documented on Chain of Custody?		No		11.	┨., 1
#17: Sufficient sample amount for indicated test(s)?		- No	0 0-1	 	┨
#18 All samples received within sufficient hold time?	Yes	No:	See Below	 	- 1
			See Below	-,	4
#19 Subcontract of sample(s)?	Yes	No No	Not Applicable		
#20 VOC samples have zero headspace?	Yes	¹"∙ No	Not Applicable	<u>L</u>	٠ - ك
· Variar	Ice Documentation	٠		•	
	a sector of	,		1	1
Contact: Contacted by:		·	Date/ Time:		. ,
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Regarding:			. 1		-
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Corrective Action Taken.			•		
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Check all that Apply [7] . See attached e-m	and for				
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·	is and would like to pro		•		
LJ Cooling process i	had begun shortly after	sampling	event		
•			•		
			•		
		•	•		

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)
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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

Report Date: 30-SEP-09

Work Order Number: 346217

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.

Page 4 of 13



Certificate of Analys. ummary 346217 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal-Legacy



Project Id: 2009-092

Project Location: Lea County, NM

Contact: Jason Henry

Date Received in Lab: Mon Sep-28-09 09:35 am

Report Date: 30-SEP-09
Project Manager: Brent Barron II

part						Project Manager:	Dieni Danon, n	
	Lab Id:	346217-001						
Analysis Requested	Field Id:	Treatment Cell #	# 1					,
many sis Requesica	Depth:							
	Matrix:	SOIL						
	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		, ,			,
Benzene		1.539 0.2	2060					
Toluene		31.40 0.4	1120		•			
Ethylbenzene		30.15 0.2	2060					
m,p-Xylenes		51.23 0.4	1120					
o-Xylene		21.99 0.2	2060					
Total Xylenes		73.22 0.2	2060					
Total BTEX		136.31 0.2	2060					
Percent Moisture	Extracted:			_				
	Analyzed:	Sep-29-09 09:	07					
	Units/RL:	%	RL					
Percent Moisture		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					
C6-C12 Gasoline Range Hydrocarbons		2560	155					
C12-C28 Diesel Range Hydrocarbons		8530	155					
C28-C35 Oil Range Hydrocarbons		220	155					
Total TPH		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

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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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5757 NW 158th St, Miami Lakes, FL 33014		(305) 823-8500	(305) 823-8555
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842 Cantwell Lane, Corpus Christi, TX 78408	7	(361) 884-0371	(361) 884-9116



Project Name: 14-Inch Vac to Jal-Legacy

ork Orders: 346217,

Project ID: 2009-092

Lab Batch #: 774935

Sample: 539231-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 09/30/09 13:14	SU	SURROGATE RECOVERY STUDY									
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
Analytes	1/-1		[D]	/410	•						
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	SU	SURROGATE RECOVERY STUDY									
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
Analytes			[D]								
1,4-Dıfluorobenzene	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	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	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:

Matrix: Solid

Units: mg/kg Date Analyz	ed: 09/29/09 23:36	SU	RROGATE RE	COVERY S	STUDY	
TPH By SW8015 M	od	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes				[D]		
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	SU	RROGATE RI	ECOVERY S	STUDY	
ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	1 mary tes					
1-Chlorooctane		87.7	100	88	70-135	
o-Terphenyl		36.7	50 0	73	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal-Legacy

Work Orders: 346217,

Project ID: 2009-092

Lab Batch #: 774863

Sample: 539177-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 09/30/09 00:25	SU	IRROGATE R	ECOVERY :	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE RI	ECOVERY S	STUDY	
ТРН	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:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/30/09 05:49	SURROGATE RECOVERY STUDY										
TPH By SW8015 Mod	Amount Found [A]	True Amount {B}	Recovery %R	Control Limits %R	Flags						
Analytes			[D]								
1-Chlorooctane	96.2	100	96	70-135							
o-Terphenyl	46.8	50.0	94	70-135							

Surrogate Recovery [D] = 100 * A / B

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

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



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

Datab #.

BLANK /BLANK SPIKE RECOVERY STUDY

Baten #:	BLANK/BEANK SPIKE RECOVERY STUI							
Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags			
[A]	[6]	[C]	76 R [D]	70 K				
ND	0.1000	0.0926	93	70-130				
ND	0.1000	0.0917	92	70-130				
ND	0.1000	0.0941	94	71-129				
ND	0 2000	0.2057	103	70-135				
ND	0.1000	0.0990	99	71-133				
	Blank Result [A] ND ND ND ND ND	Blank Spike Added [A] [B]	Blank Spike Blank Spike Result [C] ND 0.1000 0.0926 ND 0.1000 0.0917 ND 0.1000 0.0941 ND 0.2000 0.2057	Blank Result Added Spike Spike Spike Spike Result (C] (D] ND 0.1000 0.0926 93 ND 0.1000 0.0917 92 ND 0.1000 0.0941 94 ND 0.2000 0.2057 103	Blank Result Added Spike Result IA IB Result IC ID Result MR Result MR IC ID Result MR IC ID Result MR IC ID ID Result MR IC ID ID ID ID ID ID ID			

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 #: 346217

Analyst: BHW

Date Prepared: 09/29/2009

Project ID: 2009-092

Date Analyzed: 09/29/2009

Lab Batch ID: 774863

Sample: 539177-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY ST									ERY STUD	Y	
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added	Blank Spike Duplicate Result [F]	Bik. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		. ,			.,						
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 #:

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	12.2	13.0	7	20	

Lab Batch #: 774863

C28-C35 Oil Range Hydrocarbons

Date Analyzed: 09/30/2009

Date Prepared: 09/29/2009

Analyst: BHW

QC- Sample ID: 345957-002 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
TPH By SW8015 Mod Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte		1-1			<u> </u>
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	36.0	39.3	9	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

Εn	/ironmental La	b of Te	xas		*					CH/	4IN C	OF C	JSTO	ODY.	REC	ORI) AI	ID.	ANA	LYS	us F	₹EQ!	UES	3 7				
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	Company Address 2800 Plain	s Hwy								٠.	٠.				Pro	eject i	.oc:	Let	COU	nty,	NM							
	City/State/Zip. Lovington	NM 88280										•				4	O #:	PA	A - J,	Hen								
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Special I	nstructions:		L				<u>.</u>		ا۔ با د	L_		<u></u>	_L_		_L		Say	p s E	pe of	Hes	inte dece	ed?	<u></u>	<u>一</u> 终	: (g	 } }	W.	L.
Reinquish		Bate Pate	Tarre 0935 Time	Received by, Received by.									Date Date		Tin Tin	30	Daße Cust Cust Sein	ocy ocy oby ple ov S	n con seels spals tend ample outer	deline Option Deline 7	conte conte conje veruc int Ro UP	ijner(i N(s) op ?	e) ; ; ;	- 1 gr	100 A		N. Commercial Commerci).
Retropulsh	ec cy.	Dete	Time	Received by EL	rua Er	ابعد	, -		<u>,</u>	. ,		9.2	3 · C	9.	T 1::		Tam	Peri peri	7 9 Ituria	Jpon	7. Rec	æ.pt:	,	. į	3.(D	*0	r

Environmental Lab of Texas

	Vanance/ Corrective Action Re				
		nous asuibii	e cog-m		•
Client	Basin Env. Plains				
Date/ Time.	9.28.09 9:35				
Lab ID#.	346217				
Initials.	C\				
	Sample Receipt	Charblist			
	, Outriple Necesipt	Ciliberiist		,	Client Initials
#1 Tempera	ature of container/ cooler?	Yes	No	<i>3,</i> 6 °€	Jiletit Hittalis
	container in good condition?	(Yes)	No	<u> </u>	
	Seals intact on shipping container/ cooler? -	Yes	No	Not.Present	· · · ·
	Seals intact on sample bottles/ container?	Yes	No	Not Present	
	Custody present?	Yes	No	1901 mesent	
	instructions complete of Chain of Custody?	(Tes)	No		
		(rea	No	}	
	Custody signed when relinquished/ received?			15	
	Custody agrees with sample label(s)?	(es)	No	iD written on Cont./ Lid	
	er label(s) legible and intact?	1 Kesp	. No	Not Applicable	
	matrix/ properties agree with Chain of Custody?	(Yes	No	<u> </u>	
	ers supplied by ELOT?	(Yes)	No.		
	s in proper container/ bottle?	Ces	No	. See Below .	<u> </u>
	s properly preserved?	(Yes	No	See Below	<u> </u>
	bottles intact?	(Yes)	No		
#15 Presen	vations documented on Chain of Custody?	Yes	No		
#16 Contain	ers documented on Chain of Custody?	(Yes	No		
#17 Sufficie	nt sample amount for indicated test(s)?	Ces.	No	See Below .	
#18 All sam	ples received within sufficient hold time?	Yes	No.	See Below	
#19 Subcor	stract of sample(s)?	Yes '	· No	ZNoL Applicable>	
#20 ' VOC 52	amples have zero-headspace?	(Yes)	.No	Not Applicable	. ~
Contact:	Variance Docu	mentation	,	Date/ Time:	
				Date Time.	
Regarding:			***************************************		
Corrective A	ction Taken .				
					······································
Check all that	at Apply: See attached e-mail/ fax Client understands and wou Cooling process had begun	,		•	

Page 13 of 13

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: Work Order Number: 346641

2009-092

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 Analys Summary 346641 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal - Legacy



Project Id: 2009-092 Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Thu Oct-01-09 07:35 am

Report Date: 06-OCT-09

Project Manager: Brent Barron II

								Project iviai	iager:	Brent Barron,	11	
	Lab Id:	346641-0	01	346641-0	002	346641-0	03	346641-0	04	346641-0	005	
Analysis Requested	Field Id:	West Exc. N	SW-1	West Exc. W	/SW-1	West Exc. S	SW-1	West Exc Fl	oor-l	West Exc. Fl	oor-2	
Analysis Requesieu	Depth:											
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Sep-30-09 1	6:00	Sep-30-09	16:05	Sep-30-09 1	6:10	Sep-30-09 1	6:15	Sep-30-09	16:20	
BTEX by EPA 8021B	Extracted:	Oct-02-09 1	6:15	Oct-02-09	16:15	Oct-02-09 1	6:15	Oct-02-09 1	6:15	Oct-02-09	16:15	
•	Analyzed:	Oct-03-09	4:50	Oct-03-09	15:12	Oct-03-09 1	5:32	Oct-03-09 1	5:54	Oct-03-09 1	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		0.0012		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			0.0011		0.0012		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 (9:28	Oct-02-09	9:28	Oct-02-09 (9:28	Oct-02-09 0	9:28	Oct-02-09 (9:28	
	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:	Oct-04-09 1	4:52	Oct-04-09	4:52	Oct-04-09 1	4:52	Oct-04-09 1	4:52	Oct-04-09 1	4:52	
	Analyzed:	Oct-05-09 1	4:02	Oct-05-09	14:28	Oct-05-09 1	4:53	Oct-05-09 1	5:18	Oct-05-09 1	5:43	
	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 hability is limited to the amount involved 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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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 1-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Project Name: 14" Vac to Jal - Legacy

'ork Orders: 346641,

Project ID: 2009-092

Lab Batch #: 775555

Sample: 539581-1-BKS/BKS

Batch: 1 Matrix: Solid

Units: mg/kg	Date Analyzed: 10/03/09 08:13	SU	RROGATE RI	ECOVERY S	STUDY	
втех	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	' '		[D]		
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	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	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	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 10/03/09 14:50	SU	RROGATE RI	ECOVERY S	STUDY	
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 10/03/09 15:12	SU	RROGATE R	ECOVERY :	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

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

^{&#}x27;ll results are based on MDL and validated for QC purposes.



Project Name: 14" Vac to Jal - Legacy

Work Orders: 346641,

Project ID: 2009-092

Lab Batch #: 775555

Sample: 346641-003 / SMP

Matrix: Soil Batch: 1

Units: mg/kg Date Analyzed: 10/03/09 15:32 SURROGATE RECOVERT STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]		,	
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	Su	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE RI	ECOVERY :	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE RI	ECOVERY	STUDY	
втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	Analytes	:		(10)		
1,4-Dıfluorobenzene		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		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes				[D]			
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

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal - Legacy

'ork Orders: 346641,

Project ID: 2009-092

Lab Batch #: 775682

Sample: 539683-1-BKS / BKS

Matrix: Solid Batch: 1

Units: mg/kg	Date Analyzed: 10/05/09 11:57	SURROGATE RECOVERY STUDY							
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
I-Chlorooctane		91.3	100	91	70-135				
o-Terphenyl .		35.4	50.0	71	70-135				

Lab Batch #: 775682

Sample: 539683-1-BSD / BSD

Matrix: Solid Batch: 1

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	Control Limits %R	Flags			
Analytes				[D]					
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	Control Limits %R	Flags			
Analytes				[D]					
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			1~1					
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 Analytes		Amount Found [A]	True Amount B	Recovery %R [D]	Control Limits %R	Flags	
I-Chlorooctane		73.3	100	73	70-135		
o-Terphenyl		35.6	50.0	71	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

^{&#}x27;ll results are based on MDL and validated for QC purposes.



Project Name: 14" Vac to Jal - Legacy

Work Orders: 346641,

Project ID: 2009-092

Lab Batch #: 775682

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:

Matrix: Soil

Units: mg/kg Date Analyzed: 10/05/09 15:18	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R D	Control Limits %R	Flags			
Analytes			[2]					
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 10/05	5/09 15:43 SI	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
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: 10/05/0	9 21:54 SU	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
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	Allalytes	90.9	100	91	70-135		
o-Terphenyl		36.0	50.0	72	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



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BS / BSD Recoveries



Project Name: 14" Vac to Jal - Legacy

Work Order #: 346641

Analyst: ASA Date Prepared: 10/02/2009

Project ID: 2009-092 **Date Analyzed:** 10/03/2009

Lab Batch ID: 775555

Sample: 539581-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY							Ŷ			
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Biank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Benzene	ND	0.1000	0.0966	97	0.1	0.0976	98	1	70-130	35	-
Toluene	ND	0.1000	0.0932	93	0.1	0.0947	95	2	70-130	35	
Ethylbenzene	ND	0.1000	0.0937	94	0.1	0.0956	96	2	71-129	35	
m,p-Xylenes	ND	0.2000	0.2039	102	0.2	0.2082	104	2	70-135	.35	
o-Xylene	ND	0.1000	0.0993	99	0.1	0.1009	101	2	71-133	35	

Analyst: BHW

Date Prepared: 10/04/2009

Date Analyzed: 10/05/2009

Lab Batch ID: 775682

Sample: 539683-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	852	85	1000	. 867	87	2	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+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries

Project Name: 14" Vac to Jal - Legacy



Work Order #: 346641

Project ID: 2009-092

Lab Batch ID: 775555

QC- Sample ID: 346856-006 S

Batch #:

Matrix: Soil

Date Analyzed: 10/03/2009

Date Prepared: 10/02/2009

Analyst: ASA

Reporting Units: ma/ka

Reporting Units: ing/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		{ D]	[E]		[G]				<u> </u>
Benzene	ND	0.1095	0.0675	62	0.1088	0.0643	59	5	70-130	35	Х
Toluene	ND	0.1095	0.0702	64	0.1088	0.0651	60	8	70-130	35	х
Ethylbenzene	ND	0.1095	0.0685	63	0.1088	0.0646	59	6	71-129	35	Х
m,p-Xylenes	ND	0.2189	0.1647	75	0.2176	0.1504	69	9	70-135	35	Х
o-Xylene	ND	0.1095	0.0751	69	0.1088	0.0696	64	8	71-133	35	X

Lab Batch ID: 775682

QC- Sample ID: 346327-006 S

Batch #:

Matrix: Soil

Date Analyzed: 10/05/2009

Date Prepared: 10/04/2009

Analyst: BHW

Reporting Units: mg/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag		
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD			
C6-C12 Gasoline Range Hydrocarbons	ND	1020	914	90	1020	894	88	2	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



Sample Duplicate Recovery



Project Name: 14" Vac to Jal - Legacy

Work Order #: 346641

Lab Batch #: 775229

- 10/00/2000

Project ID: 2009-092

Date Analyzed: 10/02/2009

Date Prepared: 10/02/2009

Analyst:BEV

QC-Sample ID: 346641-001 D

Percent Moisture

Analyte

Batch #:

Matrix: Soil

Reporting Units: %

ercent Moisture

1			OVERY
Parent Sample Result [A] Resu [B]	ate RPD	Control Limits %RPD	Flag

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

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	Company Address	ss: 2800 Plains Hwy	-		7-			3		*		Prof	net Loc:	Les Cour	rty, RM		<u> </u>	
'	City/State/Zip:	Lovington, NM 88260				,				······				PAA - J. I				
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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

0 - [
10-01-09 00735				
346641				
JMF				
Sample	Receipt Checklist			Client Initials
ature of container/ cooler?	₹es	No	1.1 · °C	
container in good condition?	(es)	No		
Seals intact on shipping container/ cooler	? Yes	No	(Not Present)	
Seals intact on sample bottles/ container?	Mahel (Yes)	No	Not Present	
Custody present?	(Yeso	No		
instructions complete of Chain of Custody		No		
		No		
Custody agrees with sample label(s)?	(€ §2)	No	ID written on Cont / Lid-	
	(Tes)	No	Not Applicable	
matrix/ properties agree with Chain of Cu	stody? (Yes)	No		
ers supplied by ELOT?	(YES)	Nο		
s in proper container/ bottle?	(FES)	· No	See Below -	
es properly preserved?	(Yes)	No	' See Below	
bottles intact?	(Yes)	No		, ,
rations documented on Chain of Custody?		No		
ners accumented on Chain of Custody?	(Yes)	No.		
int sample amount for indicated test(s)?	(Yes)	No	See Below	·
*18 All samples received within sufficient hold time?			See Below	
	Yes	No	Not Applicable	
amples have zero headspace?	(es)	No	Not Applicable	
Variano	e Documentation		,	
Contacted by.	William Co. William Co. William Co. Co. Co. Co. Co. Co. Co. Co. Co. Co.		Date/ Time	***************************************
Also Talesa		,		
Gion Taxen				
				·····
			•	
Client understands	and would like to pro-		,	
	ac begun shortly after	sampling	event	
	ac begun shortly after	sampling	event	
	Sample Sample ature of container/ cooler? a container in good condition? Seals intact on shipping container/ cooler? Costody present? Instructions complete of Chain of Custody Custody signed when relinquished/ recent Custody agrees with sample label(s)? In custody agrees with sample label(s)? In the cooler is agree with Chain of Custody In the cooler is agree with Chain of Custody In proper container/ bottle?	Sample Receipt Checklist ature of container/ cooler? g container in good condition? Seals intact on shipping container/ cooler? Seals intact on sample bottles/ container? abe! Custody present? Custody present? Custody signed when relinquished/ received? Custody agrees with sample label(s)? For tabel(s) legible and intact? For matrix/ properties agree with Chain of Custody? For supplied by ELOT? For in proper container/ bottle? For property preserved? Potities intact? Potities in	Sample Receipt Checklist ature of container/ cooler? Goontainer in good condition? Seals intact on shipping container/ cooler? Seals intact on sample bottles/ container/ label Coustody present? Coustody present? Coustody signed when relinquished/ received? Coustody signed when relinquished/ received? Coustody agrees with sample label(s)? Coustody agrees with sample label(s)? Coustody preserved? Coustody preserved? Coustody preserved? Coustody agrees with chain of Custody? Coustody agrees with chain of Custody? Coustody preserved? Coustody? Coustody preserved? Coustody? Coustody preserved? Coustody? Cousto	Sample Receipt Checklist Sample Receipt Checklist Seals intact on shipping container/ cooler? Container in good condition? Seals intact on shipping container/ cooler? Seals intact on shipping container/ cooler? Custody present? Custody present? Custody present? Custody signed when relinquished/ received? Custody agrees with sample label(s)? Custody agrees with sample label(s)? Custody present sagre with Chain of Custody? Tess No Not Applicable In matrix properties agree with Chain of Custody? Se properly preserved? Se properly preserved? Se properly preserved? Se properly preserved? Se bottes intact? Custody? Tess No See Below See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No See Below Tess No Tess No See Below Tess No Tess No See Below Tess No Tess No See Below Tess No

Page 15 of 15

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 LegacyProject 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

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 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	1	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 Analys 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

_ · · · ·								I TOJECT MIA	nager.	Dient Barron,	11		
	Lab Id:	351779-0	001	351779-0	002	351779-0	003	351779-0	04	351779-0	005	351779-00	06 -
Analysis Requested	Field Id:	GP # 1 @	6 Ft	GP # 2 @ 0	Grade	GP # 3 @ C	Trade	GP # 4 @	5 Ft	GP # 5 @	7 Ft	GP # 6 @ 9	9 Ft
Analysis Requesieu	Depth:												
	Matrix:	SOIL	,	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	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 1	13:25
Inorganic Anions In Soil by E300	Extracted:												
	Analyzed:	Nov-11-09	13:33	Nov-11-09	13:33	Nov-11-09	13.33	Nov-11-09	13:33	Nov-11-09	13:33	Nov-12-09 0	08:42
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		119	10.7	11.6	10.2	3510	51.7	772	27.2	142	10.4	ND	5.22
Percent Moisture	Extracted:												
	Analyzed:	Nov-12-09	14:41	Nov-12-09	14:41	Nov-12-09	14:41	Nov-12-09	14:41	Nov-12-09	14:41	Nov-12-09 1	14:41
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		6.85	1.00	1.48	1.00	3.37	1.00	8.09	1.00	4.20	1.00	4.18	1.00
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 1	12:45
	Analyzed:	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 2	20:57
	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		ND	16.1	31.1	15.2	ND	15.5	ND	16.3	ND	15.7	216	15.6
C12-C28 Diesel Range Hydrocarbons		31.4	16.1	522	15.2	263	15.5	19.7	16.3	62.1	15.7	4190	15.6
C28-C35 Oil Range Hydrocarbons		ND	16.1	134	15.2	74.8	15.5	ND	16.3	ND	15.7	290	15.6
Total TPH		31.4	16.1	687	15.2	338	15.5	19.7	16.3	62.1	15.7	4696	15.6

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 1014

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

Project Location: Lea County, NM

Contact: Jason Henry

Date Received in Lab: Wed Nov-11-09 08:12 am

Report Date: 16-NOV-09

Project Manager: Brent Barron, II

								110,000 1.10		Breme Burron,			
	Lab Id:	351779-0	07	351779-0	08	351779-0	109	351779-0	10	351779-0)11	351779-0	12
Analysis Page astad	Field Id:	GP # 7 @	9 Ft	GP # 8 @	9 Ft	GP # 9 @ 1	l0 Ft	GP # 10 @	7 Ft	GP # 11 @	7 Ft	GP # 12 @ 1	l0 Ft
Analysis Requested	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 1	3.55
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	Nov-12-09	08:42	Nov-12-09 0	8:42
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		71.5	5.40	378	27.5	6.72	5.38	16.6	10.6	21.3	5.14	ND	5.17
Percent Moisture	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 1	4:52
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.38	1.00	9.23	1.00	7.03	1.00	5.46	1.00	2.80	1.00	3.25	1.00
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 1	2:45
	Analyzed:	Nov-11-09	21:25	Nov-11-09	21:52	Nov-11-09	22:19	Nov-11-09 2	22:47	Nov-11-09	23:41	Nov-12-09 0	80:00
	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		ND	16.2	ND	16.5	36.4	16.1	ND	15.9	ND	15.4	688	15.5
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

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Version: 1 014

Brent Barron, II Odessa Laboratory Manager



Certificate of Analys Jummary 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

							I roject Ma	uager.	Dient Darion, II			
Lab Id:	351779-0	013	351779-0	14	351779-0	15	351779-0	16		-		
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			•	
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				
	219	22.8	9.32	5.21	62.9	5.43	9.57	6.29	•			
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				
	12.1	1.00	3.95	1.00	7.86	1.00	20.5	1.00				
Extracted:	Nov-11-09	12:45	Nov-11-09	12:45	Nov-11-09	12:45	Nov-11-09	12:45				
Analyzed:	Nov-12-09	00:36	Nov-12-09 (01:03	Nov-12-09 (01:29	Nov-12-09	01:55				
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	1			
	ND	17.1	212	15.6	ND	16.2	ND	18.8				
	51.9	17.1	2920	15.6	69.7	16.2	ND	18.8				
	ND	17.1	199	15.6	ND	16.2	ND	18.8				
	51.9	17.1	3331	15.6	69.7	16.2	ND	18.8				
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Analyzed: Analyzed:	Field Id: GP # 13 @ Depth: Matrix: SOIL Sampled: Nov-10-09 Extracted: Analyzed: Nov-12-09 Units/RL: mg/kg 219 Extracted: Analyzed: Nov-12-09 Units/RL: % 12.1 Extracted: Nov-11-09 Analyzed: Nov-12-09 Units/RL: mg/kg Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09 Nov-12-09	Field Id: GP # 13 @ 10 Ft Depth: Matrix: SOIL Sampled: Nov-10-09 14:00 Extracted: Analyzed: Nov-12-09 08:42 Units/RL: mg/kg RL 219 22.8 Extracted: Analyzed: Nov-12-09 14:52 Units/RL: % RL 12.1 1.00 Extracted: Nov-11-09 12:45 Analyzed: Nov-12-09 00:36 Units/RL: mg/kg RL ND 17.1 51.9 17.1 ND 17.1	Field Id: GP # 13 @ 10 Ft GP # 14 @ Depth: Matrix: SOIL SOIL Sampled: Nov-10-09 14:00 Nov-10-09 Extracted: Analyzed: Nov-12-09 08:42 Nov-12-09 0 Units/RL: mg/kg RL mg/kg Extracted: Analyzed: Nov-12-09 14:52 Nov-12-09 Units/RL: % RL % Extracted: Nov-11-09 12:45 Nov-11-09 Analyzed: Nov-12-09 00:36 Nov-12-09 0 Units/RL: mg/kg RL mg/kg ND 17.1 2920 ND 17.1 199	Field Id: GP # 13 @ 10 Ft GP # 14 @ 12 Ft Depth: Matrix: SOIL SOIL Sampled: Nov-10-09 14:00 Nov-10-09 14:05 Extracted: Analyzed: Nov-12-09 08:42 Nov-12-09 08:42 Units/RL: mg/kg RL mg/kg RL Extracted: Analyzed: Nov-12-09 14:52 Nov-12-09 14:52 Nov-12-09 14:52 Units/RL: % RL % RL Analyzed: Nov-11-09 12:45 Nov-11-09 12:45 Nov-12-09 01:03 Units/RL: mg/kg RL mg/kg RL ND 17.1 212 15.6 51.9 17.1 2920 15.6 ND 17.1 199 15.6	Field Id: GP # 13 @ 10 Ft GP # 14 @ 12 Ft GP # 15 @ Depth: Matrix: SOIL SOIL SOIL SOIL SOIL SOIL Nov-10-09 Extracted: Analyzed: Nov-12-09 08:42 Nov-12-09 08:42 <th>Field Id: Depth: GP # 13 @ 10 Ft GP # 14 @ 12 Ft GP # 15 @ 10 Ft Matrix: SOIL SOIL SOIL SOIL Nov-10-09 14:10 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 Mov-12-09 08:42 Mov-12-09 08:42 Mov-12-09 08:42 Nov-12-09 14:52 Nov-12-09 12:45 Nov-12-09 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 Nov-12-09 01:03 Nov-12-09 01:29 Nov-12-09 01:03 Nov-12-09 01:29 Nov-12-09 01:29 Nov-12-09 01:29 Nov-12-09 01:03 Nov-12-09 01:29 Nov-12-09 01:29 Nov-12-09 01:03<th>Lab Id: 351779-013 351779-014 351779-015 351779-016 Field Id: GP # 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14 @ 12 Ft GP # 15 @ 10 Ft Matrix: SOIL SOIL SOIL SOIL Nov-10-09 14:10 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 Mov-12-09 08:42 Mov-12-09 08:42 Mov-12-09 08:42 Nov-12-09 14:52 Nov-12-09 12:45 Nov-12-09 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 Nov-12-09 01:03 Nov-12-09 01:29 Nov-12-09 01:03 Nov-12-09 01:29 Nov-12-09 01:29 Nov-12-09 01:29 Nov-12-09 01:03 Nov-12-09 01:29 Nov-12-09 01:29 Nov-12-09 01:03 <th>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 @ Depth: Matrix: SOIL <th c<="" th=""><th>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</th><th> Field Id:</th><th>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 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 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 Units/RL: % RL % RL % RL Litis/RL: % RL % RL % RL Extracted: Nov-11-09 12:45 Nov-11-09 12:45 Nov-11-09 12:45 Nov-11-09 12:45 Analyzed: Nov-12-09 00:36 Nov-12-09 01:03 Nov-12-09 01:29 Nov-12-09 01:55 Units/RL: mg/kg RL</th></th></th>	Lab Id: 351779-013 351779-014 351779-015 351779-016 Field Id: GP # 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Version 1 014

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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5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
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842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Project Name: 14-Inch Vac to Jal Legacy

'ork Orders: 351779,

Project ID: 2009-092

Lab Batch #: 781303

Sample: 542950-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg	Date Analyzed: 11/11/09 17:26	SU	RROGATE RI	ECOVERY	STUDY	•
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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	₂ SU	SURROGATE RECOVERY STUDY						
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
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 D	ate Analyzed: 11/11/09 18:16	SU	RROGATE RE	COVERY S	STUDY	
TPH by SV		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Allai	ytes -			[2]		
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	SU	RROGATE R	ECOVERY :	STUDY	
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
•	Analytes			[D]		
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	SU	RROGATE R	ECOVERY	STUDY	
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B].	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		76.1	99.9	76	70-135	
o-Terphenyl		45.3	50.0	91	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

\ll results are based on MDL and validated for QC purposes.

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal Legacy

Work Orders: 351779,

Project ID: 2009-092

Lab Batch #: 781303

Sample: 351779-003 / SMP

Matrix: Soil Batch:

Units: mg/kg	Date Analyzed: 11/11/09 19:37	SU	RROGATE RI	ECOVERY 8	STUDY	
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	Analytes					
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 11/11/09 TPH by SW8015 Mod Analytes hlorooctane	ed: 11/11/09 20:03	SURROGATE RECOVERY STUDY						
TPH by SW8015 Mo	od	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes	l			{ D }				
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 11/11/09 20:30	SU	RROGATE RI	ECOVERY S	STUDY	
	y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
A	Analytes			[2]		
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 11/11/09 20:57	SU	RROGATE RI	COVERY	STUDY	-
ТРН	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	SU	JRROGATE RI	ECOVERY	STUDY	
ТРН	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

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal Legacy

'ork Orders: 351779,

Sample: 351779-008 / SMP

Project ID: 2009-092

Lab Batch #: 781303

Matrix: Soil Batch: 1

Units: mg/kg D	ate Analyzed: 11/11/09 21:52	SURROGATE RECOVERY STUDY				
TPH by SV		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Anal Anal	ytes			[D]		
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

SUPPOCATE RECOVERY STUDY

Units: mg/kg Date Analyzed: 11/11/09 22:19 SURROGATE RECOVERY STUDY TPH by SW8015 Mod Amount True Control					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	11		[D]		ļ
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	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	1		[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 11/11/09 23:41	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.8	99.6	71	70-135	<u>.</u>
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	SU	RROGATE R	ECOVERY	STUDY	
	y SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		103	100	103	70-135	
o-Terphenyl		50.3	50.0	101	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

^{&#}x27;Il results are based on MDL and validated for QC purposes.



Project Name: 14-Inch Vac to Jal Legacy

Work Orders: 351779,

Project ID: 2009-092

Lab Batch #: 781303

Sample: 351779-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/12/09 00:36	SU	RROGATE RI	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
. Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 11/12/09 01:03	SU	RROGATE RI	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	·Flags
Analytes 1-Chlorooctane	95.4	100	95	70-135	
		ļ			
o-Terphenyl	59.0	50.0	118	70-135	

Lab Batch #: 781303

Sample: 351779-015 / SMP

Batch:

l Matrix: Soil

Units: mg/kg	Date Analyzed: 11/12/09 01:29	SU	RROGATE R	ECOVERY :	STUDY	
ТРН І	oy SW8015 Mod	Amount Found [A]	True Amount {B}	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		88.4	99.7	89	70-135	
o-Terphenyl		55.4	49.9	1:11	70-135	

Lab Batch #: 781303

Sample: 351779-016 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 11/12/09 01:55	SU	RROGATE R	ECOVERY	STUDY	
	y SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-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	
I-Chlorooctane	121	100	121	70-135		
o-Terphenyl	54.7	50.0	109	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14-Inch Vac to Jal Legacy

'ork Orders: 351779,

Project ID: 2009-092

Lab Batch #: 781303

Sample: 351779-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/12/09 04:33	SU	RROGATE RI	ECOVERY	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 Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits, data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

^{&#}x27;ll 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 /B	BLANK SPI	KE REC	OVERY S	STUDY
Inorganic Anions In Soil by E300	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags
Analytes	[A]	[B]	Result [C]	%R [D]	%R	
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

Departing Units: mg/kg

RI ANK /RI ANK SPIKE DECOVEDY STUDY

Reporting Units: mg/kg	Batch #:	BLANK /	BLANK SPI	KE KEC	OVERY	STUDY
Inorganic Anions In Soil by E300	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags
Analytes	[A]	[B]	Result [C]	%R [D]	%R	
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. BRL - Below Reporting Limit



BS / BSD Recoveries



Project Name: 14-Inch Vac to Jal Legacy

Work Order #: 351779

Analyst: BEV Date Prepared: 11/11/2009

Project ID: 2009-092 **Date Analyzed:** 11/11/2009

-- - 2 111

Lab Batch ID: 781303 Sample: 542950-1-BKS Batch #: 1 Matrix: Solid

Units: mg/kg		BLAN	K/BLANK	SPIKE / I	BLANK S	PIKE DUPI	LICATE	RECOVI	ERY STUD	Y	
TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added	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

Version: 1.014



Form 3 - MS Recoveries

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

OC- Sample ID: 351720-001 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg MATRIX SPIKE RECOVERY STUDY											
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag					
Analytes	[A]	[B]									
Chlonde	2120	1300	3700	122	75-125						

Lab Batch #: 781411

Date Analyzed: 11/12/2009

Date Prepared: 11/12/2009

Analyst: LATCOR

QC- Sample ID: 351779-006 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	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								
Allalytes														
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

BRL - Below Reporting Limit

Version 1.014



Form 3 - M MSD Recoveries

nelad

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

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY														
TPH by SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Sample	•	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag				
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD					
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, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit

Version: 1 014



Chloride

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												
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag								
2120	2110	0	20									

Lab Batch #: 781411

Date Analyzed: 11/12/2009

Inorganic Anions In Soil by E300

Analyte

Date Prepared: 11/12/2009

Analyst:LATCOR

QC- Sample ID: 351779-006 D

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: mg/kg Inorganic Anions In Soil by E300 Sample Control Parent Sample Duplicate RPD Limits Result Flag %RPD [A] Result [B] **Analyte** Chloride ND ND NC 20

Lab Batch #: 781403

Date Analyzed: 11/12/2009 **QC- Sample ID:** 351716-016 D

Date Prepared: 11/12/2009

Analyst: BEV

Batch #: 1

Matrix: Soil

Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	9.47	8.39	12	20	

Lab Batch #: 781406

Date Analyzed: 11/12/2009 **QC- Sample ID:** 351779-010 D

Date Prepared: 11/12/2009

Analyst: BEV

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
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

Version: 1.014

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:														_	Pı	ojec	t Na	me:	14-	inct	Va	c to	Jai	Leç)BC	ــــــ					
	Company Name	Basin Environn	nentaì Se	rvice T	echno	logies, LLC											_		Pı	ojec	t#:	200	9-0	92								
	Company Address:	2800 Plains Hw	у	···			·				,						_		Proje	ect L	.oc: _	Lea	Соц	nty,	NM							
	City/State/Zip:	Lavington, NM	88260														_			P) #: _	PAA	\ - J.	Hen	ry_		-					
	Telephone No: Sampler Signature:	(578) 441,2244		- /	0		Fax No:	•			98-1			ein.			-	Repoi		rmat	: [X ,	Sten	dard			TRE	RP		□ •	NPOE	S
	Sampler Signature.	<u> </u>	$\stackrel{\longleftarrow}{\longrightarrow}$		7	<u> </u>	G-Mail.	-	₩	JIE	AI IIC	y	yva	31(1-	COII	Sui	uiiy	.001						Ana	yze	or.	_				<u> </u>	3
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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 02 OF 02									_	Pro	ject	Ner	ne: _	14-In	<u>ich</u>	Vac	to	<u>Jai</u>	Leg	ac	<u></u>							
	Company Name	Besin Enviro	onmental Ser	rvice T	echnol	ogies, LLC													Pro	jec	#: _2	2009	-09	2								
	Company Address:	2800 Plains	Hwy														_	P	roje	ct L	oc: <u>1</u>	ea C	oun	ty, N	M							
	City/State/Zip:	Lovington, N	VM 88260														_			PC	#: <u>1</u>	AA -	. J. F	lenry								
	Telephone No:	(575) 441-22	44				Fax No:		(57	5) 3	96-1	429					_ Re	port	For	mat:	[K SI	tandı	ard			TRE	RP		<u> </u>	NPD	ES
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14	GP #1	4 @ 12 ft				11/10/2009	1405		1	X				\perp	\perp	\perp	Sc	il	X				\perp		Ц			\Box	\perp	:	<u>x</u>	X
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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin / Plains			
Date/ Time:			
Lab ID#: 351779			
Initials: Child	•		
Sample Receipt	Checklist		
			Cilent initials
#1 Temperature of container/ cooler?	(Xea.	No	4 °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?	₹ Peg	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 Docu	mentation		
Contacted by:		_	Date/ Time:
Regarding:			
Corrective Action Taken:	,		
Check all that Apply: See attached e-mail/ fax Client understands and wou Cooling process had begun			

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 LegacyProject 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 Analys Jummary 355590 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal Legacy

Contact: Jason Henry

Date Received in Lab: Mon Dec-14-09 05:20 pm

Project Location: Lea County, NM

Project Id: 2009-092

Report Date: 17-DEC-09

3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3						•		Project Ma	nager:	Brent Barron,	II		
	Lab Id:	355590-0	001	355590-0	002	355590-0	003	355590-0	004	355590-0	05	355590-0	06
Analysis Requested	Field Id:	SB # 4 @	10'	SB # 4 @	20'	SB # 4 @	30'	SB # 4 @	40'	SB#4@	50'	SB # 5 @	10'
Anatysis Requesieu	Depth:							,					
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-10-09	09:15	Dec-10-09	09:40	Dec-10-09	10:25	Dec-10-09	11:00	Dec-10-09	1:55	Dec-10-09 1	13:10
Inorganic Anions In Soil by E300	Extracted:												
-	Analyzed:	Dec-15-09	14:06	Dec-15-09	14:06	Dec-15-09	14:06	Dec-15-09	14:06	Dec-15-09	4:06	Dec-15-09 1	14:06
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	_ mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		85.3	5.77	26.8	5.55	61.8	5.38	26.5	5.17	ND	5.02	117	5.64
Percent Moisture	Extracted:	,											
	Analyzed:	Dec-15-09	17:00	Dec-15-09	17:00	Dec-15-09 1	17:00	Dec-15-09	17:00	Dec-15-09	7:00	Dec-15-09 1	17:00
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	· %	RL
Percent Moisture		13.4	1.00	9.89	1.00	7.01	1.00	3.27	1.00	12.1	1.00	11.3	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

Final Ver. 1.000

Page 5 of 12



Project Location: Lea County, NM

Certificate of Analysis Summary 355590 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal Legacy

Project Id: 2009-092
Contact: Jason Henry

Date Received in Lab: Mon Dec-14-09 05:20 pm

Report Date: 17-DEC-09

Project Manager: Brent Barron, II

							I Toject Man		Brein Burron, II	
Lab Id:	355590-0	07	355590-0	08	355590-0	09	355590-0	10		
Field 1d:	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 1	5:00	Dec-10-09	5:50		
Extracted:			.,							
Analyzed:	Dec-16-09	08:38	Dec-16-09 (8:38	Dec-16-09 (8:38	Dec-16-09 (8:38		
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
	263	11.2	55.5	5.23	6.71	5.04	183	10.4		
Extracted:										
Analyzed:	Dec-15-09	17:00	Dec-15-09	7:00	Dec-15-09 1	7:00	Dec-15-09	17:00		
Units/RL:	%	RL	%	RL	%	RL	%	RL		
	10.5	1.00	4.41	1.00	ND	1.00	3.44	1.00		
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL: Extracted: Analyzed:	Field Id: SB # 5 @ Depth: Matrix: SOIL Sampled: Dec-10-09 : Extracted: Analyzed: Dec-16-09 : Units/RL: mg/kg 263 Extracted: Analyzed: Dec-15-09 Units/RL: %	Field Id: SB # 5 @ 20' Depth: Matrix: SOIL Sampled: Dec-10-09 13:40 Extracted: Analyzed: Dec-16-09 08:38 Units/RL: mg/kg RL 263 11.2 Extracted: Analyzed: Dec-15-09 17:00 Units/RL: % RL	Field Id: SB # 5 @ 20' SB # 5 @ Depth: Matrix: SOIL SOIL Sampled: Dec-10-09 13:40 Dec-10-09 1 Extracted: Analyzed: Dec-16-09 08:38 Dec-16-09 0 Units/RL: mg/kg RL mg/kg Extracted: Analyzed: Dec-15-09 17:00 Dec-15-09 1 Units/RL: % RL %	Field Id: SB # 5 @ 20' SB # 5 @ 30' Depth: Matrix: SOIL SOIL Sampled: Dec-10-09 13:40 Dec-10-09 14:15 Extracted: Analyzed: Dec-16-09 08:38 Dec-16-09 08:38 Units/RL: mg/kg RL mg/kg RL Extracted: Analyzed: Dec-15-09 17:00 Dec-15-09 17:00 Units/RL: % RL % RL	Field Id: SB # 5 @ 20' SB # 5 @ 30' SB # 5 @ Depth: Matrix: SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL Dec-10-09 II Dec-10-09 II Dec-10-09 II Dec-10-09 II Dec-10-09 II Dec-10-09 II Dec-16-09 II	Field Id: SB # 5 @ 20' SB # 5 @ 30' SB # 5 @ 40' Depth: Matrix: SOIL SOIL SOIL Sampled: Dec-10-09 13:40 Dec-10-09 14:15 Dec-10-09 15:00 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 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	Lab Id: 355590-007 355590-008 355590-009 355590-0 Field Id: SB # 5 @ 20' SB # 5 @ 30' SB # 5 @ 40' SB # 5 @ Depth: Matrix: SOIL SOIL <th>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 Dec-10-09 15:50 Dec-10-09 15:50 Dec-10-09 15:50 Dec-10-09 15:50 Dec-10-09 15:50 Dec-16-09 08:38 Dec-16-09 08:</th> <th>Field Id: SB # 5 @ 20' SB # 5 @ 30' SB # 5 @ 40' SB # 5 @ 45' Depth: Matrix: SOIL 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 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 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</th>	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 Dec-10-09 15:50 Dec-10-09 15:50 Dec-10-09 15:50 Dec-10-09 15:50 Dec-10-09 15:50 Dec-16-09 08:38 Dec-16-09 08:	Field Id: SB # 5 @ 20' SB # 5 @ 30' SB # 5 @ 40' SB # 5 @ 45' Depth: Matrix: SOIL 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 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 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

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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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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-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	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags	
Analytes		(1)	[C]	[D]	/01		
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

RI ANK /RI ANK SPIKE DECOVEDY STUDY

Reporting Units: mg/kg Batch #: 1		BLANK/BLANK SPIKE RECOVERY STUDY						
Inorganic Anions In Soil by E300	Blank Result	Spike Added	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags		
Analytes	[A]	[B]	C	[D]	/0K			
Chloride	ND	10.0	10.6	106	75-125			



Form 3 - MS Recoveries

Project Name: 14-Inch Vac to Jal Legacy



Work Order #: 355590

Lab Batch #: 785868

Date Analyzed: 12/15/2009

Date Prepared: 12/15/2009

Project ID: 2009-092

Analyst: LATCOR

QC-Sample ID: 355585-001 S

Batch #: Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Analytes	[A]	[B]					
Chloride	255	1260	1640	110	75-125		

Lab Batch #: 785951

Date Analyzed: 12/16/2009

Date Prepared: 12/16/2009

Analyst: LATCOR

QC-Sample ID: 355590-008 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY								
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]		Control Limits %R	Flag			
Analytes	[A]	[B]							
Chloride	55.5	112	172	104	75-125	Ī			

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative 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-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 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag			
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 CAMPLE (CAMPLE DUDI ICATE DECOVEDY

Reporting Units: mg/kg SAMPLE / SAMPLE DUPLICATE RECOVE							
Inorganic Anions In Soil by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag		
Analyte	[6]	[B]					

Lab Batch #: 785882

Chloride

Date Analyzed: 12/15/2009

Date Prepared: 12/15/2009

55.5

Analyst: WRU

56.7

QC- Sample ID: 355585-001 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	20.9	22.4	7	20	

Lab Batch #: 785886

Date Analyzed: 12/15/2009 QC- Sample ID: 355590-007 D Date Prepared: 12/15/2009

Analyst: WRU

Batch #: 1

Matrix: Soil

Reporting Units: %	SAMPLE / SAMPLE DUPLICATE RECOVERY								
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag				
Analyte		{ B }			:				
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

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							Pr	Project Name: 14-Inch Vac to Jal Legacy																						
	Company Name	Basin Environ	rmental Sen	vice Te	chnol	ogles, LLC								•			_		Pr	ojec	t#:_ <u>2</u>	2009	-092	<u> </u>							
	Company Address:	P. O. Box 301				<u> </u>				·							_	ı	Proje	ct L	oc: <u>L</u>	ев С	oun	ty, NI	4						
	City/State/Zip:	Lovington, NN	A 88260														_			PC)#: <u>F</u>	AA -	J. H	enry					,		
	Telephone No:	(505) 441-2244	4				Fax No	:	(505)	396	-142	9						Repor	t For	mat	. [K St	anda	ırd		<u></u>	TRRF	,		NPD)E\$
	Sampler Signature:	CAR)\X	سده			e-mail	:	csta	anle	ey@)ba	sin	env	/.co	m		_	_					nalýz	o Fr)r'		محجن		—	_
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ORDER	**: <u>3555</u>	90							ĸ	Pi	reser	vatio	on &	f of €	Conta	iners	N.	latrix	_			TOTAL	١.	$\vdash \vdash$	┽	\dashv			2540c)		4
LAB # (tab use only)	,	LD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Fillered	Total # of Containers 402gh		23			NeOH		(Specify)	ng Water SL-Sludge	GW = Groundwater 5=SolfSolf NP=Non-Potable Specify othe	TPH: 418.1 8015M 8015B		Catoris (Ca, Mg, Na, K)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volaties	Serrivolatifies	BTEX 802/19/5030 or BTEX 8280	RCI NORM	PAH 8270	THOD SM	E 300	RUSH TAT (Pre-Schedule) 24, 4 Standard TAT
01	SB	#4@10'				12/10/2009	0915		1	x							Ľ	Boll						\Box		\perp	\perp			х	x
02	SB	#4 @ 20'				12/10/2009	0940		1	X							!	Boll								\perp	ᆚ	$oldsymbol{\perp}$		X	X
03	SB	#4 @ 30'				12/10/2009	1025	L	1	x						\perp		Soil						Ш	╝	\perp	丄	\perp	Ш	x	х
24	SB	#4 @ 40'	•			12/10/2009	1100		1	X					\perp		<u> </u>	Soil						Ш	\perp		$oldsymbol{\perp}$			х	x
05	SB #	#4 @ 50'				12/10/2009	1155		1	X			·				L	Soli						Ш						X	x
DU	SB 4	#5 @ 10'				12/10/2009	1310		1	х							Ţ	Soll							\Box			\perp		Х	х
07	SB	#5 @ 20'				12/10/2009	1340		1	X								Soll							\Box		L			X	X
სგ	SB	#5 @ 30 '				12/10/2009	1415		1	x								Soll				\prod		\prod		\Box	T			X	X
09	SB #	#5 @ 40'				12/10/2009	1500		1	x								Soil	П					П	П					X	X
10	SB #	#5 @ 45 '				12/10/2009	1550		1	x								Soil				Τ		П	Т	T		T		X	х
Special I	nstructions:		Date 2/4/09	17	me 20	Received by:	· · · · · · · · · · · · · · · · · · ·									D	ate		Time		Seint VOC: Label Custo Custo Custo	Free for dy se	of l	leads	pac pac ntain	e? en(s)	En :))) 21-	A A	1 1 1 1 1 1 1 1 1 1	N I
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The Control of the Co

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

nent:	riains / lasin				
ate/ Time:	12-14-09 @ 1720				
ab ID#:	355590				
nitials:	JME				
	Sample Receipt	^hooklist			
	Sample Receipt	CHECKISE			Client Initials
#1 Tempera	ture of container/ cooler?	(Yes)	No	2.6 °C	
	confainer in good condition?	(Yes)	No		
	Seals intact on shipping container/ cooler?	Yes	No	(Not Present)	
	Seals intact on sample bottles/ container? / laheis	(Yes)	No	Not Present	
	Custody present?	CYESO	No		
	nstructions complete of Chain of Custody?	(Yes)	No	*	
#7 Chain of	Custody signed when relinquished/ received?	(Yes)	No		
	Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont./ Lid	
#9 Containe	er label(s) legible and intact?	Yes	No	Not Applicable	
#10 Sample	matrix/ properties agree with Chain of Custody?	Yes	No		
	ers supplied by ELOT?	(Yes)	No		
#12 Sample:	s in proper container/ bottle?	(Yes	No	See Below	
#13 Sample:	s properly preserved?	(Yes>	No	See Below	
#14 Sample	bottles intact?	(Yes>	No		
#15 Preserv	ations documented on Chain of Custody?	(Yes)	No		
#16 Contain	ers documented on Chain of Custody?	(Yes	No.		
#17 Sufficier	nt sample amount for indicated test(s)?	(res')	No	See Below	
#18 All samp	ples received within sufficient hold time?	(Yes	No	See Below	
#19 Subcont	tract of sample(s)?	Yes	(No>	Not Applicable	
#20 VOC sa	mples have zero headspace?	(Yes >	No	Not Applicable	
Contact:	Variance Docum Contacted by:	nentation		Date/ Time:	
			-	_ 	
Regarding:					
Corrective Ac	tion Taken:				
CONTECUTO ME	yuvii tungii,				
· · · · · · · · · · · · · · · · · · ·					
					·
	·				<u> </u>
Check all tha	it Apply: See attached e-mail/ fax			•	
	Client understands and would	d like to pro	ceed with	analysis	
	Cooling process had begun s	-		-	

Analytical Report 384537

for PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" VAC to Jal Legacy

SRS# 2009-92

16-AUG-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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16-AUG-10

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

Reference: XENCO Report No: 384537

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 384537. 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. 384537 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 384537



PLAINS ALL AMERICAN EH&S, Midland, TX

14" VAC to Jal Legacy

Sample 1d	Matrix	Date Collected	Sample Depth	Lab Sample Id
Screened SP-1	·S	Aug-04-10 11:00		384537-001
Screened SP-2	S	Aug-04-10 11:10		384537-002



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" VAC to Jal Legacy



Project ID:

SRS# 2009-92

Work Order Number: 384537

Report Date: 16-AUG-10 Date Received: 08/05/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-817871 Percent Moisture

None

Batch: LBA-817882 TPH by SW8015 Mod

None

Batch: LBA-818918 BTEX by EPA 8021

SW8021BM

Batch 818918, Benzene, Toluene, m,p-Xylenes RPD was outside QC limits.

Samples affected are: 384537-001, -002

SW8021BM

Batch 818918, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 384537-001,384537-002.

4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data

confirmed by re-analysis

Samples affected are: 384537-002,384537-001.

SW8021BM

Batch 818918, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 384537-001, -002.

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



Certificate of Analys Summary 384537 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" VAC to Jal Legacy



Project Id: SRS# 2009-92 Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Thu Aug-05-10 02:10 pm

Report Date: 16-AUG-10

				Project Manager: Brent Barron, II
	Lab Id:	384537-001	384537-002	
Anglysis Paguestad	Field 1d:	Screened SP-1	Screened SP-2	·
Analysis Requested	Depth:			
	Matrix:	SOIL	SOIL	
	Sampled:	Aug-04-10 11:00	Aug-04-10 11:10	
BTEX by EPA 8021	Extracted:	Aug-13-10 14:30	Aug-13-10 14:30	
·	Analyzed:	Aug-16-10 05:32	Aug-16-10 07:06	
	Units/RL:	mg/kg RL	mg/kg RL	
Benzene .		0.0173 0.0103	0.0297 0.0107	
Toluene		0.1184 0.0205	0.1580 0.0215	
Ethylbenzene		0.3405 0.0103	0.3963 0.0107	
m,p-Xylenes		1.206 0.0205	1.354 0.0215	·
o-Xylene		0.7582 0.0103	1.784 0.0107	
Xylenes, Total		1.964 0.0103	3.138 0.0107	·
Total BTEX		2.440 0.0103	3.722 0.0107	
Percent Moisture	Extracted:			
	Analyzed:	Aug-07-10 09:24	Aug-07-10 09.24	
	Units/RL:	% RL	% RL	
Percent Moisture		6.29 1.00	6.91 1.00	
TPH by SW8015 Mod	Extracted:	Aug-06-10 13:15	Aug-06-10 13:15	
	Analyzed:	Aug-06-10 22.58	Aug-06-10 23:19	
· ·	Units/RL:	mg/kg RL	mg/kg RL	·
C6-C12 Gasoline Range Hydrocarbons		1260 80.0	1320 80.4	
C12-C28 Diesel Range Hydrocarbons		3550 80.0	3400 80.4	
C28-C35 Oil Range Hydrocarbons		201 80.0	148 80.4	
Total TPH .		5011 80.0	4868 80.4	

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
- MDL Method Detection Limit
- **PQL** Practical Quantitation Limit
- * Outside XENCO's scope of NELAC Accreditation.

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842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Project Name: 14" VAC to Jal Legacy

'ork Orders: 384537,

Project ID: SRS# 2009-92

Lab Batch #: 818918

Sample: 570654-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 08/15/10 22:33	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	(1-7	(=)	[D]	, , , ,		
1,4-Dıfluorobenzene	0.0292	0.0300	97	80-120		
4-Bromofluorobenzene	0.0323	0.0300	108	80-120		

Lab Batch #: 818918

Sample: 570654-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 08/15/10 22:57	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]	`		
1,4-Dıfluorobenzene	0.0286	0.0300	95	80-120		
4-Bromofluorobenzene	0.0317	0.0300	106	80-120		

Lab Batch #: 818918

Sample: 570654-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 08/16/10 00:06	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0244	0.0300	81	80-120			
4-Bromofluorobenzene	0.0286	0.0300	95	80-120			

Lab Batch #: 818918

Sample: 385503-002 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY						
ВТЕ	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]		•	
1,4-Difluorobenzene		0.0263	0.0300	88	80-120		
4-Bromofluorobenzene	•	0.0327	0.0300	109	80-120		

Lab Batch #: 818918

Sample: 385503-002 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 08/16/10 01:40	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0275	0.0300	92	80-120		
4-Bromofluorobenzene	0.0292	0.0300	97	80-120		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

[\]ll results are based on MDL and validated for QC purposes.



Project Name: 14" VAC to Jal Legacy

Work Orders: 384537,

Project ID: SRS# 2009-92

Lab Batch #: 818918

Sample: 384537-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 08/16/10 05:32	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0190	0.0300	63	80-120	**	
4-Bromofluorobenzene	0.0981	0.0300	327	80-120	**	

Lab Batch #: 818918

Sample: 384537-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 08/16/10 07:06	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0171	0.0300	57	80-120	**	
4-Bromofluorobenzene .	0.0941	0.0300	314	80-120	**	

Lab Batch #: 817882

Sample: 570025-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 08/06/10 21:59	SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes		İ	1-3			
1-Chlorooctane	120	100	120	70-135		
o-Terphenyl	63.9	50.0	128	70-135		

Lab Batch #: 817882

Sample: 570025-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 08/06/10 22:19	SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1-Chlorooctane	123	100	123	70-135		
o-Terphenyl	57.0	50.2	114	70-135		

Lab Batch #: 817882

Sample: 570025-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 08/06/10 22:39	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	57.2	50.1	114	70-135			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" VAC to Jal Legacy

Vork Orders: 384537,

Project ID: SRS# 2009-92

Lab Batch #: 817882

Sample: 384537-001 / SMP

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 08/06/10 22:58	SURROGATE RECOVERY STUDY						
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1-Chlorooctane	116	100	116	70-135			
o-Terphenyl	53.0	50.0	106	70-135			

Lab Batch #: 817882

Sample: 384537-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 08/06/10 23:19	SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes			. ^[D]			
1-Chlorooctane	116	99.8	116	70-135		
o-Terphenyl	50.0	49.9	100	70-135		

Lab Batch #: 817882

Sample: 384564-004 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 08/07/10 05:53	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			رطا		
I-Chlorooctane	125	100	125	70-135	
o-Terphenyl	47.7	50.2	95	70-135	

Lab Batch #: 817882

Sample: 384564-004 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 0	8/07/10 06:12 S	URROGATE R	ECOVERY :	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	124	101	123	70-135	
o-Terphenyl	56.0	50.3	111	70-135	

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

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



BS / BSD Recoveries



Project Name: 14" VAC to Jal Legacy

Work Order #: 384537

Analyst: ASA Date Prepared: 08/13/2010

Project ID: SRS# 2009-92

Date Analyzed: 08/15/2010

Lab Batch ID: 818918

Sample: 570654-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag										
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]														
Benzene	ND	0.1000	0.1119	112	0.1	0.1104	110	1	70-130	35											
Toluene	ND	0.1000	0.1042	104	0.1	0.1016	102	3	70-130	35											
Ethylbenzene	ND	0.1000	0.1094	109	0.1	0.1059	106	3	71-129	35											
m,p-Xylenes	ND	0.2000	0.2195	110	0.2	0.2111	106	4	70-135	35											
o-Xylene	ND	0.1000	0.1102	110	0.1	0.1075	108	2	71-133	35											

Analyst: BEV

: V

יע

Date Prepared: 08/06/2010

Date Analyzed: 08/06/2010

Matrix: Solid

Lab Batch ID: 817882

Sample: 570025-1-BKS

Batch #: 1

Units: mg/kg		BLAN	K/BLANK	SPIKE / F	BLANK S	PIKE DUPI	LICATE 1	RECOVI	ERY STUD	Y	
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
Analytes		נטן	(C)	[[D]	լ բշյ	Kesuk [F]	[6]				
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1070	107	1000	1120	112	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	877	88	1000	1000	100	13	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

'5



Form 3 - M MSD Recoveries



70-135

Project Name: 14" VAC to Jal Legacy

Work Order #: 384537

Project ID: SRS# 2009-92

Lab Batch ID: 818918

QC- Sample ID: 385503-002 S

Batch #:

Matrix: Soil

Date Analyzed: 08/16/2010

ASA

Reporting Units: mg/kg

Date Prepared: 08/13/2010

Analyst:

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

	MATRIA SFIRE / MATRIA SFIRE DUFLICATE RECOVERT STUDY										MATRIA STIRE / MATRIA SFIRE DUFLICATE RECOVERT STUDI										
BTEX by EPA 8021 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 ND	0.1088	0.0010	1	0.1088	0.0688	63	194	70-130	35	XF										
Toluene	ND	0.1088	0.0032	3	0.1088	0.0566	52	179	70-130	35	XF										
Ethylbenzene	ND	0.1088	0.0511	47	0.1088	0.0469	43	9	71-129	35	Х										
m,p-Xylenes	ND	0.2176	0.0024	1	0.2176	0.0551	25	183	70-135	35	XF										
o-Xylene	ND	0.1088	0.0454	42	0.1088	0.0484	44	6	71-133	35	Х										

Lab Batch ID: 817882

QC-Sample ID: 384564-004 S

Batch #:

1 Matrix: Soil

1030

Date Analyzed: 08/07/2010

C12-C28 Diesel Range Hydrocarbons

Date Prepared: 08/06/2010

ND

1050

Analyst: BEV

Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH by SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
C6-C12 Gasoline Range Hydrocarbons	ND	1050	1130	108	1060	1120	106	1	70-135	35	

956



Sample Duplicate Recovery



Project Name: 14" VAC to Jal Legacy

Work Order #: 384537

Lab Batch #: 817871

Project ID: SRS# 2009-92

Date Analyzed: 08/07/2010 QC- Sample ID: 384538-001 D **Date Prepared:** 08/07/2010

Analyst: JLG

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result A	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	9.30	9 69	4	20	

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:	Camille Bryant														_	Pr	ojec	t Nar	ne: <u>1</u>	4"	Vac	to .	Jal L	<u>.eg</u> 2	acy					
	Company Name	Basin Environmental C	onsultin	g, LLC		·										_		Pr	rojeci	#:_5	RS	# 20	09-	92						<u>.</u>	
	Company Address	P.O. Box 381															ı	Proje	ect L	oc: L	ea C	oun:	ty, N	iM_							
	City/State/Zip:	Lovington, NM 88260			· · · · · · · · · · · · · · · · · · ·											-			PO	#: <u>F</u>	<u>AA-</u>	J. H	пгу								
	Telephone No:	(575)605-7210				Fax No:		(50	15) 3	96-1	429					_ F	lepor	t Fo	rmat:	[2	s	tand	ard			TRR	₹P	[] NI	PDE:	s
	Sampler Signature	timeset	84	چىت	\$	e-mail:		cil	bry	ant	@ b	asi	n-c	ons	ultir	ng.c	<u>mox</u>									سينجست					•
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LAB # (lab use ordy)		LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers		HNO				None	secify)	ater StStudg	GW - Croundwater S-Soll/Sod	TPH: 418.1 (8015M) 8015E	TPH. TX 1005 TX 1006	Cations (Ca. Mg, Na, K)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se		Semholetiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M			- 1 ₹	_
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-002	Scree	ened SP-2		<u> </u>	4-Aug-10	1110	Щ	1	x		_	+	4	┿	\perp	_s	oil	×	$\vdash \downarrow$	\downarrow	\downarrow	╀	\vdash	\sqcup	\vdash	\dashv	+	+	\downarrow	╀	×
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

client: Basun / Plains	.					
Date/Time: 8 5 10 14:10						
Lab (D#: 384537						
Initials:					•	
,,,,	Sample Rec	eipt Checkl	ist			
1. Samples on ice?			Blue	Water	No	
2. Shipping container in good condition?			Yes	No	None	
3. Custody seals intact on shipping contains	r (cooler) and bot	ttes?	Yes	No	N/A	
4. Chain of Custody present?			Yes	No		
5. Sample instructions complete on chain of	custody?		(Yes)	No		
6. Any missing / extra samples?			Yes	(No)		
7. Chain of custody signed when relinquished	d / received?		Yes	No		
8. Chain of custody agrees with sample labe	l(s)?		Yes	No		
9. Container labels legible and intact?			Yes	No		
10. Sample matrix / properties agree with ch	ain of custody?		Yes	No		
11. Samples in proper container / bottle?			Yes	No		
12. Samples properly preserved?			Yes	No	N/A	
13. Sample container intact?			Yes	No		
14. Sufficient sample amount for indicated to	et(s)?		(Yes)	No		
15. All samples received within sufficient ho	ld time?		Yes	No		
16. Subcontract of sample(s)?	<u>=</u> <u>=</u> .		Yes	Nó	N/A	
17. VOC sample have zero head space?			Yes	No	N/A	
18. Cooler 1 No. Cooler 2 No.	Cooler 3 No.		Cooler 4 No).	Cooler 5 No.	
lbs / °C łbs	°C	lbs °C	lbs	°C	Ibs	°c
N	onconforman	ce Documei	ntation			
Contact:Contact	ed by:	· · · · · · · · · · · · · · · · · · ·		Date/Time:_		-,~
Regarding:	· 	·				
Corrective Action Taken:						
Check all that apply: □Cooling process ha	s begun shortly a	after sampling	event and o	ut of temper	ature	

☐ Initial and Backup Temperature confirm out of temperature conditions

□ Client understands and would like to proceed with analysis

Analytical Report 386163

for PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy

SRS# 2009-92

30-AUG-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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





30-AUG-10

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

Reference: XENCO Report No: 386163

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 386163. 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. 386163 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 386163



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id		Matrix	Date Collected S	Sample Depth	Lab Sample Id
Screened SP #3		S	Aug-17-10 10:30		386163-001
Screened SP #4		S	Aug-17-10 10:35		386163-002
Screened SP #5		S	Aug-17-10 10:40		386163-003
Screened SP #6	•	S	Aug-17-10 10:45	•	386163-004
Screened SP #7		S	Aug-17-10 10:50		386163-005



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy



Proiect ID:

SRS# 2009-92

Work Order Number: 386163

Report Date: 30-AUG-10

Date Received: 08/18/2010

Sample receipt non conformances and Comments:

Client/Consultated authorized the analysis of BTEX on samples 386163-002 through -005 on

August 23, 2010

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-819442 TPH by SW8015 Mod

SW8015MOD_NM

Batch 819442, o-Terphenyl recovered above QC limits. Matrix interferences is suspected for this surrogate failure, 1-Chloroctane was within QC liimits; data not confirmed by re-analysis Samples affected are: 386163-001.

Batch: LBA-819487 Percent Moisture

AD2216A

Batch 819487, Percent Moisture RPD is outside the QC limit. This is most likely due to sample

non-homogeneity.

Samples affected are: 386163-004, -002, -001, -003, -005.

Batch: LBA-820715 BTEX by EPA 8021B

SW8021BM

Batch 820715, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 386163-003.

4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data

confirmed by re-analysis

Samples affected are: 386163-003,386163-004,386163-002,386163-005.

Final 1.002



Certificate of Analys Summary 386163 PLAINS ALL AMERICAN EH&S, Midland, TX

inelad:

Project Id: SRS# 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14" Vac to Jal Legacy

Date Received in Lab: Wed Aug-18-10 11:55 am

Report Date: 30-AUG-10
Project Manager: Brent Barron, II

								Froject Ma	uager:	Brent Barron,	11	
· .	Lab Id:	386163-0	01	386163-0	002	386163-0	003	386163-0	004	386163-0	05	
Analysis Requested	Field Id:	Screened S	P #3	Screened-S	P #4	Screened S	P #5	Screened S	P #6	Screened S	P #7	
Anutysis Nequesteu	Depth:	•										
2	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Aug-17-10	10:30	Aug-17-10	10:35	Aug-17-10	10:40	Aug-17-10	10:45	Aug-17-10	10:50	
BTEX by EPA 8021	Extracted:			Aug-26-10	15:57	Aug-26-10	15:57	Aug-26-10	15:57	Aug-26-10	15:57	
	Analyzed:			Aug-27-10	21:41	Aug-27-10	20:55	Aug-27-10	22·27	Aug-27-10	21:18	
	Units/RL:			mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Benzene				ND	0.1077	ND	0.0217	ND	0.1080	ND	0.1094	
Toluene				ND	0.2155	0.0814	0.0434	0.2311	0.2160	ND	0.2187	
Ethylbenzene				0.4600	0.1077	0.3981	0.0217	0.9537	0.1080	0.6792	0.1094	
m,p-Xylenes				1.673	0.2155	1.443	0.0434	6.488	0.2160	4.426	0.2187	
o-Xylene				1.405	0.1077	1.513	0.0217	6.944	0.1080	4.880	0.1094	
Xylenes, Total				3.078	0.1077	2.956	0.0217	13.432	0.1080	9.306	0.1094	
Total BTEX				3.538	0.1077	3.436	0.0217	14.617	0.1080	9.985	0.1094	
Percent Moisture	Extracted:											
	Analyzed:	Aug-19-10	08.29	Aug-19-10	08:29	Aug-19-10	08:29	Aug-19-10	08:29	Aug-19-10 (08:29	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	
Percent Moisture		5.64	1.00	7.36	1.00	8.04	1.00	7.78	1.00	9.29	1.00	
TPH by SW8015 Mod	Extracted:	Aug-18-10	11:55	Aug-18-10	11:55	Aug-18-10	11:55	Aug-18-10	11:55	Aug-18-10	11:55	
	Analyzed:	Aug-18-10	15:10	Aug-18-10	15:30	Aug-18-10	15:50	Aug-18-10	16:09	Aug-18-10	16:49	•
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
C6-C12 Gasoline Range Hydrocarbons		643	79.1	1120	80.6	1190	81.2	1490	81.1	1290	82.5	
C12-C28 Diesel Range Hydrocarbons		5810	79.1	2840	80.6	2480 ·	81.2	2510	81.1	2510	82.5	
C28-C35 Oil Range Hydrocarbons		1050	79.1	160	80.6	190	81.2	195	81.1	145	82.5	
Total TPH		7503	79.1	4120	80.6	3860	81.2	4195	81.1	3945	82.5	

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 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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Odessa Laboratory Manager

Final 1.002

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
- MDL Method Detection Limit
- **POL** Practical Quantitation Limit
- * Outside XENCO's scope of NELAC Accreditation.

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842 Cantwell Lane Corpus Christi TX 78408	(361) 884-0371	(361) 884-9116



Project Name: 14" Vac to Jal Legacy

Vork Orders: 386163,

Project ID: SRS# 2009-92

Lab Batch #: 820715

Sample: 571869-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 08/27/10 05:55	SURROGATE RECOVERY STUDY				
BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	. ,		[D]		
1,4-Difluorobenzene		0.0305	0.0300 -	102	80-120	
4-Bromofluorobenzene		0.0356	0.0300	119	80-120	

Lab Batch #: 820715

Sample: 571869-1-BSD / BSD

Batch: 1

Matrix: Water

Units: mg/L Date Analyzed: 08/27/10 06:18	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0346	0.0300	115	80-120		
4-Bromofluorobenzene	0.0360	0.0300	120	80-120		

Lab Batch #: 820715

Sample: 571869-1-BLK / BLK

Batch:

1 Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
втех	Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Dıfluorobenzene	Analytes	0 0288	0.0300	96	80-120	_
4-Bromofluorobenzene		0.0335	0.0300	112	80-120	L

Lab Batch #: 820715

Sample: 386163-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 08/27/10 20:55	SURROGATE RECOVERY STUDY					
вте	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Dıfluorobenzene		0.0238	0 03 00	79	80-120	**	
4-Bromofluorobenzene		0.0961	0.0300	320	80-120	**	

Lab Batch #: 820715

Sample: 386163-005 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 08/27/10 2	1:18 SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Dıfluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0594	0.0300	198	80-120	**

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

Work Orders: 386163,

Project ID: SRS# 2009-92

Lab Batch #: 820715

Sample: 386163-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 08/27/10 21:41	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0536	0.0300	179	80-120	**

Lab Batch #: 820715

Sample: 386163-004 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 08/27/10 22:27	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
	0.0247	0.0200	ļ	80-120		
1,4-Difluorobenzene	0.0247	0.0300	82			
4-Bromofluorobenzene	0.0651	0.0300	217	80-120	**	

Lab Batch #: 819442

Sample: 570931-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg	SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	85.6	100	86	70-135		
o-Terphenyl	38.0	50.0	76	70-135		

Lab Batch #: 819442

Sample: 570931-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg	Date Analyzed: 08/18/10 12:31	SURROGATE RECOVERY STUDY					
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
1-Chlorooctane		88.2	100	88	70-135		
o-Terphenyl		44.8	50.0	90	70-135		

Lab Batch #: 819442

Sample: 570931-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 08/18/10 12:50	SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes						
1-Chlorooctane	74.7	100	75	70-135		
o-Terphenyl	37.8	50.0	76	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

Vork Orders: 386163,

Project ID: SRS# 2009-92

Lab Batch #: 819442

Sample: 386163-001 / SMP

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 08/18/10 15:10	SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	87.8	99.5	88	70-135		
o-Terphenyl	76.9	49.8	154	70-135	*	

Lab Batch #: 819442

Sample: 386163-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 08/18/10 15:30	SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1-Chlorooctane	84.2	99.5	85	70-135		
o-Terphenyl ·	47.0	49.8	94	70-135		

Lab Batch #: 819442

Sample: 386163-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 08/18/10 15:50	SURROGATE RECOVERY STUDY										
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
Analytes	1		[D]								
1-Chlorooctane	84.9	99.5	85	70-135							
o-Terphenyl	49.7	49.8	100	70-135							

Lab Batch #: 819442

Sample: 386163-004 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 08/18/10	16:09 SU	SURROGATE RECOVERY STUDY										
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
I-Chlorooctane	85.8	99.7	86	70-135								
o-Terphenyl	45.6	49.9	91	70-135								

Lab Batch #: 819442

Sample: 386163-005 / SMP

Batch: 1 · Matrix: Soil

Units: mg/kg	Date Analyzed: 08/18/10 16:49	SURROGATE RECOVERY STUDY										
	y SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
I-Chlorooctane		82.7	99.8	83	70-135							
o-Terphenyl		39.2	49.9	79	70-135							

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 386163

Analyst: ASA Date Prepared: 08/26/2010

Project ID: SRS# 2009-92 **Date Analyzed:** 08/27/2010

Lab Batch ID: 820715

Sample: 571869-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0855	86	0.1	0.0890	89	4	70-125	25	
Toluene	ND	0.1000	0.0866	87	0.1	0.0886	89	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0904	90	0.1	0.0928	93	3	71-129	25	
m,p-Xylenes	ND	0.2000	0.1761	88	0.2	0.1806	90	3	70-131	25	
o-Xylene	ND	0.1000	0.0900	90	0.1	0.0921	92	2	71-133	25	

Analyst: JLG Lab Batch ID: 819442

Sample: 570931-1-BKS

Batch #: 1

Date Prepared: 08/18/2010

Date Analyzed: 08/18/2010

Matrix: Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Cinibi C C											
TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1140	114	1000	995	100	14	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	936	94	1000	979	98	4	70-135	35	



Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 386163

Lab Batch #: 819487

/10/2010 D-4- D---- J- 09/10

Project ID: SRS# 2009-92

Date Analyzed: 08/19/2010

Date Prepared: 08/19/2010

Analyst: JLG

QC-Sample ID: 386098-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY										
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag							
Analyte		[B]										
Percent Moisture	2.56	3.42	29	20	F							

1 000

Page 12 of 13

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:	Camille Bryant															_	Pı	ojec	xt Na	me:	14"	Va	<u>c to</u>	<u>Jai</u>	Lega	acy					
	Company Name	Basin Environme	ntal Con	sultin	g, LLC	;											_		P	rojec	rt #:	SRS	S# 2	<u>\$00</u> \$	9-92							
	Company Address:	P.O. Box 381		•••													_		Proj	ect L	.oc:	Lea	Cou	ınty,	NM							
	City/State/Zip:	Lovington, NM 88	260														_			P	D#:	PAA	<u>W. I</u>	Henr	<u>y</u>							
	Telephone No:	(575)605-7210					Fax No:		(50	5) 3	96-1	429					_ 1	Repoi	rt Fa	rmat	t:	X,	Stan	dard	l		TRE	₹₽	Ĺ] NPC	DES	
	Sampler Signature:	(amile	<u>li</u>	K	ېد	unt.	e-mail:		cil	brya	anto	<u>Ot</u>	as	n-c	ons	sulti	ng.	com	-		,										_	i i
(lab use c	only) 39/1/	2	7	·	S														F		-	TCI	LP:	Ana	lyze T	For:			T.	П	72 hrs	ı
ORDER	# 38616	<u>s</u>	<u> </u>							Pr	serv	atlo	n & /	of C	onta	iners	L N	atrix	8			П	7,	<i>s</i>	十	$\overline{}$	ιl			11	ą	
LAB # (lab use only)		LD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sempled	Field Filtered	Total # of Containers	łce	HNO	ÄĞ	H ₂ SO ₄	NaOH	New Joseph	Other (Specify)	DW. Drinking Water SL-Shidg	GW - Groundwater S-SoliSol NP-Non-Potable Specify Other	8	12	Cations (Ca. Mg. Na, K)	Anions (Ct, SO4, Alkalmity)	SAR/ESP/CEC	Metals: As Ag Ba Cd Cr Pb Hg Se Votatiles	Semivolaties	BTEX 8021B/5030 or BTEX 8280	RCI	N.O.R.M.			RUSH TAT (Pre-Schedule) 24,	Standard TAT 4 DAY
بعد -	Scree	ned SP #3				17-Aug-10	1030		1	x						I		Soll	X				$oldsymbol{\mathbb{I}}$	$oxed{oxed}$	I	\square		$oxed{oxed}$	$oxed{oxed}$	\coprod		X
-002	Scree	ned SP #4				17-Aug-10	1035		1	x							٤	Soil	X				┙	\perp	丄	$oxed{oxed}$			\perp			X
- တဘ	Scree	ned SP #5				17-Aug-10	1040		1	x							\$	Boll	X					\perp	\perp			\perp		\coprod		X
-004	Scree	ned SP #6				17-Aug-10	1045		1	x								Soil	X					\perp	\perp					\prod		X
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Scree	ned SP #7				17-Aug-10	1050		1	x								Soli	X					\perp	\perp	Ш		\prod	L	\coprod	\Box	X
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																								$oldsymbol{\mathbb{I}}$				$oxed{oxed}$	\prod		\Box	
																						T	\prod	m I	Τ		\Box	\Box			П	
																				П		Т	Т	Τ.	T	\Box	П	T	T	П	Т	
Special I	nstructions:	Conduct TPH ar	nalysis,	Hold	for B1	TEX														ì	CLIN			н,	ment Mail adsp	15.50			*		N.	
	rele Fo	South SI	Pate (Q)) C			2/20	1			_				Ý	7/1 ₀	8//	00	Tim 73	0	Cus	lody	sea -	8 ON	cont	ace? alner((2) (3) (4)	na Nati			N N	題
Relinquish	ned by:		Date '		me	Received by:										,	ite		Tim	e	Sam	iple f by Se by Co		r Dei en Cij	lvere lent R UP	to tep.?	DHL		ed Ex	;	N N	
Relinquish	ed by	8/	78/10	// Th	\$5	Received by ELC		<u>.</u>			-				3	8/7	8	Ø	Tim 11:3		Tem	pera	ture	Upo	n Re	ceipt:			4	^	°C	



XENCO Laboratories

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

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconf	ormance Report	t - Samp	le L	.og-In
--------------------	----------------	----------	------	--------

RIA	Á	Prelogin / I	Nonc	conformance R	eport	: - Sample	e Log-In		
Client: 9/18/	<u> </u>								
Date/Time: 8 // 8 / Lab ID #: 3 8 (- 1	/ 2							
Initials:	<u>, , , , , , , , , , , , , , , , , , , </u>	63							
midais:						•• 4			
			S	ample Receipt C	ineck	IIST			
1. Samples on ice?						Blue	Water	No	
2. Shipping contains	r in	good condition?				(Yes	No	None	
3. Custody seals inta	ict o	n shipping contai	ner (co	ooler) and bottles?		Tes	No	N/A	
4. Chain of Custody	pres	ent?				HES	No		
5. Sample instruction	ns c	omplete on chain	of cus	tody?		Ves	No		
6. Any missing / extr	2 92	mples?				Yes	ME		
7. Chain of custody	sign	ed when relinquis	hed / r	ecelved?		6	No		
8. Chain of custody	agre	es with sample lat	oel(s)?	•		(Yes)	No		
9. Container labels la	egib	le and intact?				(69)	No		<u> </u>
10. Sample matrix / p	orop	erties agree with o	hain c	of custody?		E S	No		
11. Samples in prope	er co	ontainer / bottle?				6	No		
2. Samples propert	y pr	eserved?			,	∀03	No	N/A	
13. Sample containe	r int	act?				(CEP	No		
14. Sufficient sample	am	ount for Indicated	test(s)?		(Yes	No		
15. All samples rece	lved	within sufficient l	rold tir	me?		(G)	No		
16. Subcontract of s	amp	le(s)?					No	N/A	
17. VOC sample have	e ze	ro head space?				Yes	No	N/A	
18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No).	Cooler 5 No.	
ibs 4	°C	ibs	°C	lbs	°C	lbs	°C	lbs	°C
			None	onformance Do	cume	ntation			
Contact:		Contac			•		Date/Time:		
OUTBACE				J•			Date/111116		
Regarding:				·			<u> </u>		
Corrective Action Ta	ıken	<u>:</u>							
Check all that apply:				egun shortly after sa		event and o	ut of temper	ature	_

Final 1.002

□ Initial and Backup Temperature confirm out of temperature conditions

☐ Client understands and would like to proceed with analysis

Analytical Report 387696

for PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy

SRS# 2009-92

09-SEP-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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





09-SEP-10

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

Reference: XENCO Report No: 387696

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 387696. 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. 387696 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 387696



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Screened SP # 8	S	Aug-30-10 10:30		387696-001
Screened SP # 9	S	Aug-30-10 10:35		387696-002
Screened SP # 10	S	Aug-30-10 10:40		387696-003



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy



Project ID:

SRS# 2009-92

Work Order Number: 387696

Report Date: 09-SEP-10

Date Received: 08/30/2010

Sample receipt non conformances and Comments:

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-820965 Percent Moisture

None

Batch: LBA-820995 TPH by SW8015 Mod

None

Batch: LBA-822248 BTEX by EPA 8021

SW8021BM

Batch 822248, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected: data confirmed by re-analysis

Samples affected are: 387696-001,387696-003,387696-002.

4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data

confirmed by re-analysis

Samples affected are: 387696-001,387696-003,387696-002.

SW8021BM

Batch 822248, Benzene, Toluene, o-Xylene recovered below QC limits in the Matrix Spike. Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered above QC limits in the Matrix Spike Duplicate.

Samples affected are: 387696-001, -003, -002.

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

SW8021BM

Batch 822248, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene RPD was outside QC limits.

Samples affected are: 387696-001, -003, -002



Certificate of Analys Summary 387696 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: SRS# 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14" Vac to Jal Legacy

Date Received in Lab: Mon Aug-30-10 01:20 pm

Report Date: 09-SEP-10

Project Manager: Brent Barron, II

								Project Manager:	Brem Barron, 11	
	Lab Id:	387696-001		387696-0	02	387696-0	003			
Analysis Requested	Field Id:	Screened SP # 8	8	Screened SI	9 # 9	Screened SP	# 10		-	
Anuiysis Requesteu	Depth:								•	
•	Matrix:	SOIL		SOIL		SOIL				
,	Sampled:	Aug-30-10 10:3	0	Aug-30-10 1	0:35	Aug-30-10	10:40			
BTEX by EPA 8021	Extracted:	Sep-09-10 08:0	0	Sep-09-10 0	8:00	Sep-09-10 (08:00			
	Analyzed:	Sep-09-10 12:3	2 .	Sep-09-10 1	2:55	Sep-09-10 1	13:18			
	Units/RL:		RL	mg/kg	RL	mg/kg	RL		:	
Benzene		ND 0.11	105	ND	0.1130	ND	0.1104			
Toluene		0.2828 0.22	210	0.4158	0.2260	0.5621	0.2208			
Ethylbenzene		1.507 0.11	105	1.037	0.1130	1.339	0.1104			
m,p-Xylenes	_	6.676 0.22	210	11.78	0.2260	15.25	0.2208			
o-Xylene		7.176 0.11	05	8.956	0.1130	10.40	0.1104			
Xylenes, Total		13.852 0.11	05	20.74	0.1130	25.65	0.1104			
Total BTEX		15.642 0.11	05	22.19	0.1130	27.55	0.1104			
Percent Moișture	Extracted:									
	Analyzed:	Aug-31-10 08:2	2	Aug-31-10 (8:22	Aug-31-10 (08:22			
	Units/RL:	%	RL	%	RL	%	RL			
Percent Moisture		9.31 1	.00	10.6	1.00	9.44	1.00			
TPH by SW8015 Mod	Extracted:	Aug-30-10 15:4	0	Aug-30-10 1	5:40	Aug-30-10	15:40			
	Analyzed:	Aug-31-10 02:4	9	Aug-31-10 0	3:28	Aug-31-10 (03:47			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	•		
C6-C12 Gasoline Range Hydrocarbons		981 1	6.5	1690	16.8	1420	16.6			
C12-C28 Diesel Range Hydrocarbons		1730 1	6.5	2520	16.8	2210	16.6			
C28-C35 Oil Range Hydrocarbons		80.4 1	6.5	129	16.8	73.7	16.6			
Total TPH		2791 1	6.5	4339	16.8	3704	16.6			

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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Odessa Laboratory Manager

Final 1.001

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
- MDL Method Detection Limit
- **PQL** Practical Quantitation Limit
- * Outside XENCO's scope of NELAC Accreditation.

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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



Project Name: 14" Vac to Jal Legacy

7ork Orders: 387696,

Project ID: SRS# 2009-92

Lab Batch #: 822248

Sample: 572851-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 09/09/10 10:35	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Dıfluorobenzene	0.0338	0.0300	113	80-120		
4-Bromofluorobenzene	0.0344	0.0300	115	80-120		

Lab Batch #: 822248

Sample: 572851-1-BLK / BLK

Batch: 1 . Matrix: Solid

Units: mg/kg Date Analyzed: 09/	/09/10 11:45 SU	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes			[2]			
1,4-Dıfluorobenzene	0.0289	0.0300	96	80-120		
4-Bromofluorobenzene	0.0341	0.0300	114	80-120		

Lab Batch #: 822248

Sample: 387696-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 09/09/10 12:32	SURROGATE RECOVERY STUDY						
ВТЕ	X by EPA 8021 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		0.0540	0.0300	180	80-120	**		

Lab Batch #: 822248

Sample: 387696-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 09/09/10 12:55	SURROGATE RECOVERY STUDY					
ВТЕ	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
1,4-Dıfluorobenzene		0.0203	0.0300	68	80-120	**	
4-Bromofluorobenzene	•	0.0480	0.0300	160	80-120	**	

Lab Batch #: 822248

Sample: 387696-003 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 09/09/10 13:18	SURROGATE RECOVERY STUDY					
BTEX by	y EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
An	alytes			{D}	,		
1,4-Difluorobenzene		0.0231	0.0300	77	80-120	**	
4-Bromofluorobenzene		0.0558	0.0300	186	80-120	**	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

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



Project Name: 14" Vac to Jal Legacy

Work Orders: 387696,

Project ID: SRS# 2009-92

Lab Batch #: 822248

Sample: 387639-009 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 09/09/10 14:51	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0328	0.0300	109	80-120			
4-Bromofluorobenzene	0.0352	0.0300	117	80-120			

Lab Batch #: 822248

Sample: 387639-009 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 09/09/10 15:14	SURROGATE RECOVERY STUDY						
втн	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
1,4-Dıfluorobenzene		0.0324	0.0300	108	80-120			
4-Bromofluorobenzene		0.0324	0 0300	108	80-120			

Lab Batch #: 820995

Sample: 572063-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 08/30/10 22:54	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	99.9	85.	70-135		
o-Terphenyl	47.6	50.0	95	70-135		

Lab Batch #: 820995

Sample: 572063-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 08/30/10 23:13	SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]		i.	
1-Chlorooctane	84.9	100	85	70-135		
o-Terphenyl	45 5	50.0	91	70-135		

Lab Batch #: 820995

Sample: 572063-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 08/30/10 23:34	SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	86.3	99.9	86	70-135		
o-Terphenyl	44.5	50.0	89	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

'ork Orders: 387696,

Sample: 387696-001 / SMP

Project ID: SRS# 2009-92

Lab Batch #: 820995

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 08/31/10 02:49	SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	95.2	99.5	96	70-135		
o-Terphenyl	43.4	49.8	87	70-135		

Lab Batch #: 820995

Sample: 387696-002 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 08/31/10 03:28	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	[**]		[D]	/•••	
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	42.6	50.1	85	70-135	

Lab Batch #: 820995

Sample: 387696-003 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 08/31/10 03:47	SU	RROGATE RI	ECOVERY S	STUDY	
ТРН	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		97.4	100	97	70-135	
o-Terphenyl		43.7	50.1	87	70-135	

Lab Batch #: 820995

Sample: 387639-001 S/MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 08/31/10 0)4:07 S	URROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount {B}	Recovery %R	Control Limits %R	Flags
Analytes			[D]	1	
1-Chlorooctane	87.6	100	88	70-135	
o-Terphenyl	42.3	50.1	84	70-135	

Lab Batch #: 820995

Sample: 387639-001 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 08/31/10 04:26	SU	RROGATE RI	ECOVERY S	STUDY	
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount B	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	85.1	100	85	70-135	
o-Terphenyl	41.6	50.2	83	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

^{&#}x27;Il results are based on MDL and validated for QC purposes.



Blank Spike Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 387696

Project ID:

SRS# 2009-92

Lab Batch #: 822248

Sample: 572851-1-BKS

Matrix: Solid

Date Analyzed: 09/09/2010

Date Prepared: 09/09/2010

Analyst: ASA

Reporting Units: mg/kg	Batch #:	BLANK/BLANK SPIKE RECOVERY STUDY												
BTEX by EPA 8021	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits %R	Flags								
Analytes	[A]	[B]	Result [C]	%R [D]	70 K									
Benzene	ND	0.1000	0 0821	82	70-130									
Toluene	ND	0.1000	0.0819	82	70-130									
Ethylbenzene	ND	0.1000	0.0864	86	71-129									
m,p-Xylenes	ND	0.2000	0.1691	85	70-135									
o-Xylene	ND	0.1000	0.0856	86	71-133									







Project Name: 14" Vac to Jal Legacy

Work Order #: 387696

Analyst: BEV

Lab Batch ID: 820995

Date Prepared: 08/30/2010

Project ID: SRS# 2009-92

Date Analyzed: 08/30/2010

Sample: 572063-1-BKS Batch #: 1 Matrix: Solid

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]			į					
C6-C12 Gasoline Range Hydrocarbons	ND	999	1040	104	1000	1060	106	2	70-135	35					
C12-C28 Diesel Range Hydrocarbons	ND	999	1010	101	1000	1010	101	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



Form 3 - MS / MSD Recoveries

Project Name: 14" Vac to Jal Legacy



Work Order #: 387696

Project ID: SRS# 2009-92

Lab Batch ID: 822248

QC- Sample ID: 387639-009 S

Batch #:

Matrix: Soil

Date Analyzed: 09/09/2010

Date Prepared: 09/09/2010

Analyst: ASA

Panarting Unite: ma/k

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY														
BTEX by EPA 8021	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Analytes	[A]	[B]	[C]	[D]	[E]	Result [F]	[G]	/ °	/6K	/OKI D					
Benzene	0.0028	0.1206	0.0826	66	0.1218	0.1654	133	67	70-130	35	XF				
Toluene	ND	0.1206	0.0812	67	0.1218	0.1842	151	78	70-130	35	XF				
Ethylbenzene	ND	0.1206	0.0863	72	0.1218	0.2314	190	91	71-129	35	XF				
m,p-Xylenes	ND	0.2412	0.1705	71	0.2436	0.4920	202	97	70-135	35	XF				
o-Xylene	ND	0.1206	0.0839	70	0.1218	0.2243	184	91	71-133	35	XF				

Lab Batch ID: 820995

QC- Sample ID: 387639-001 S

Batch #:

Matrix: Soil

Date Analyzed: 08/31/2010

Date Prepared: 08/30/2010

Analyst: BEV

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

		147	MIKIN DI III	5 / WHIT		RE DOI EICH	IL REC	OVERT	or ob r		
TPH by SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample %R		Duplicate Spiked Sample Result F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	Added [B]	[C]	/6R [D]	Added [E]	Result [F]	(G)	70	70K	70KPD	
C6-C12 Gasoline Range Hydrocarbons	ND	1130	1200	106	1130	1170	104	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1130	1090	96	1130	1020	90	7	70-135	35	

`5



Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 387696

Lab Batch #: 820965

Project ID: SRS# 2009-92

Date Analyzed: 08/31/2010

Date Prepared: 08/31/2010

Analyst:JLG

QC- Sample ID: 387639-009 D

Percent Moisture

Analyte

Batch #:

Matrix: Soil

Reporting Units: %

Percent Moisture

SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

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

Page 14 of 15

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:	Camille Bryan	it																Pr	ojec	Nar	ne: _	14"	Va	c to	<u>Jal</u>	Le	gac	<u></u>					
	Company Name	Basin Environ	mental Co	onsultin	g, LLC	;	····													Pr	ojec	#: _	<u>SRS</u>	# 2	009	-92	<u></u>							_
	Company Address:	P.O. Box 381															_		ı	Proje	ct L	oc: <u>I</u>	-08	Cou	nty,	NM							_	
	City/State/Zip:	Lovington, NM	1 88260																		PC	#: <u>F</u>	PAA	-J. I	lenr	<u>y</u>								_
	Telephone No:	(575)605-7210					Fax No	:	(50)5) 3	96-1	429						R	epor	t Fo	mat		X s	Stan	dard			TR	≀RP			NPD	ES	
	Sampler Signature:	:					e-mail:	:	<u>ci</u>	bry	ant	@t	as	in-	cor	ısu	ltin	g.c	<u>om</u>						.		For:						_	
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AB # (lab use only)		LD CODE		Seginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Fittered	Fotal #. of Containers		æ				Na ₂ S ₂ O ₃			DW - Drinting Water SL - Sudg	pecify oth	13	TPH TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anons (Cl. SO4, Alkalinity)	SAM / ESP / CEC	Medals: As Ag ba Cd Cr Po Hg Se	Semivolatiles	BTEX 80218/5030 or BTEX 828/	RCI	N.O.R.M.				RUSH TAT (Pre-Schedule) 24,	Standard TAT 4 DAY
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client:	aa	·	_		•	-	-		
Date/Time:	8/30/	10)	3:20						
Lab ID#:		87690		=					
Initials:	15								
<i>y</i>			s	ample Receip	t Check	list			
1. Samples o	n ice?					Blue	Water	No	
2. Shipping c	ontainer in	good condi	tion?			(65)	No	None	
3. Custody so	eals intact o	n shipping	container (c	ooler) and bottles	?	MGS)	No	N/A	
4. Chain of C	ustody pres	ent?				(GE)	No		
5. Sample ins	tructions c	omplete on	chain of cus	tody?		(es	No		
6. Any missir	ig / extra sa	mples?				Yes	(No		
7. Chain of c	stody sign	ed when rel	inquished / r	eceived?		Yes	No		
8. Chain of c	ustody agre	es with san	ple label(s)?			Yes	No		
9. Container	labels legib	le and intac	t?			Œ	No		
10. Sample m	atrix / prop	erties agree	with chain o	of custody?		Yes	No		
11. Samples	in proper co	ntainer / bo	ttle?			63	No		
12. Samples	properly pre	served?	,			(Feg.)	No	N/A	
13. Sample c	ontainer int	act?		·		(Yes	No		
14. Sufficient	sample am	ount for inc	licated test(s)?		169	No		
15. All sample	es received	within suff	icient hold ti	me?		(GB p	. No		
16. Subcontr	act of samp	le(s)?				- Vas	(6)	NA	
17. VOC sam	ple have ze	ro head spa	ce?	<u>, </u>		(89)	No	N/A	
18. Cooler 1 l		Cooler 2 N	0.	Cooler 3 No.		Cooler 4 No) <u>. </u>	Cooler 5 No.	
lbs	5.0 °c	lbs	°C	lbs	ိင	lbs	°C	lbs	°C
Contact:			None Contacted by	conformance	Docume		Date/Time:_		
Regarding:									
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Check all that apply: Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.

□ Initial and Backup Temperature confirm out of temperature conditions

☐ Client understands and would like to proceed with analysis

Analytical Report 388944

for PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy

SRS# 2009-92

16-SEP-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

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

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

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

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240), South Carolina(96031001), Louisiana(04154), Georgia(917) North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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





16-SEP-10

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

Reference: XENCO Report No: 388944

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 388944. 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. 388944 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 388944



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Screened SP-3A	S	Sep-07-10 12:00		388944-001
Screened SP-11	S	Sep-07-10 12:15		388944-002
Screened SP-12	S	Sep-07-10 12:30		388944-003
Screened SP-13	S	Sep-07-10 12:45		388944-004



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy



Project ID:

SRS# 2009-92

Work Order Number: 388944

Report Date: 16-SEP-10

Date Received: 09/08/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

Analytical Non Conformances and Comments:

Batch: LBA-822164 Percent Moisture

None

Batch: LBA-822362 TPH by SW8015 Mod

None

Batch: LBA-823241 BTEX by EPA 8021

SW8021BM

Batch 823241, Ethylbenzene, o-Xylene RPD is outside the QC limit. This is most likely due to

sample non-homogeneity.

Samples affected are: 388944-004, -002, -001, -003.

SW8021BM

Batch 823241, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected: data confirmed by re-analysis Samples affected are: 388944-001 D,388944-003,388944-002,388944-001. 1,4-Difluorobenzene was within QC limits.

Final 1.002



Certificate of Analys Summary 388944 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Project Id: SRS# 2009-92 Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed Sep-08-10 01:30 pm

Report Date: 16-SEP-10
Project Manager: Brent Barron, II

	·,··		,		Project Manager:	Dient Barron, 11	
	Lab Id:	388944-001	388944-002	388944-003	388944-004		
Analysis Requested		Screened SP-3A	Screened SP-11	Screened SP-12	Screened SP-13		
Analysis Requesieu	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL		-
	Sampled:	Sep-07-10 12:00	Sep-07-10 12:15	Sep-07-10 12:30	Sep-07-10 12:45		
BTEX by EPA 8021	Extracted:	Sep-14-10 11:00	Sep-14-10 11:00	Sep-14-10 11:00	Sep-14-10 11:00		
	Analyzed:	Sep-15-10 13:47	Sep-15-10 14:29	Sep-15-10 16:07	Sep-15-10 16:29		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		ND 0.0213	ND 0.0535	ND 0.0528	ND 0.0541		
Toluene		0.0552 0.0426	0.2656 0.1071	ND 0.1056	0.2092 0.1081		
Ethylbenzene		0.1002 0.0213	0.3266 0.0535	0.3476 0.0528	0.1270 0.0541		
m,p-Xylenes		0.2966 0.0426	0.4519 0.1071	1.258 0.1056	3.177 0.1081		
o-Xylene		0.1321 0.0213	0.2816 0.0535	1.855 0.0528	1.938 0.0541		
a,a,a-Trifluorotoluene		0.639	1.61	1.58	1.62		
Xylenes, Total		0.4287 0.0213	0.7335 0.0535	3.113 0.0528	5.115 0.0541		
Total BTEX		0.5841 0.0213	1.3257 0.0535	3.461 0.0528	5.451 0.0541		
Percent Moisture	Extracted:						
	Analyzed:	Sep-09-10 09:17	. Sep-09-10 09:17	Sep-09-10 09:17	Sep-09-10 09:17		
	Units/RL:	% RL	% RL	% RL	% RL		
Percent Moisture		6.15 . 1.00	6.61 1.00	5.34 1.00	7.51 1.00		
TPH by SW8015 Mod	Extracted:	Sep-09-10 09:15	Sep-09-10 09:15	Sep-09-10 09:15	Sep-09-10 09:15		
Analyzed:		Sep-09-10 15:16	Sep-09-10 15:57	Sep-09-10 16:17	Sep-09-10 16.37		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		680 79.5	592 16.0	764 79.4	1270 81.3		
C12-C28 Diesel Range Hydrocarbons		2470 79.5	2060 16.0	2750 79.4	2710 81.3		
C28-C35 Oil Range Hydrocarbons		199 79.5	134 16.0	140 79.4	173 81.3		
Total TPH		3349 79.5	2786 16.0	3654 79.4	4153 81.3		

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.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - 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
- MDL Method Detection Limit
- **PQL** Practical Quantitation Limit
- * Outside XENCO's scope of NELAC Accreditation.

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842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Project Name: 14" Vac to Jal Legacy

'ork Orders: 388944,

Project ID: SRS# 2009-92

Lab Batch #: 823241

Sample: 573410-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg Date A	nalyzed: 09/15/10 12:00	SURROGATE RECOVERY STUDY					
BTEX by EP	A 8021	Amount Found [A]	True Amount B	Recovery %R	Control Limits %R	Flags	
Analyte	5			[D]			
1,4-Difluorobenzene		0.0329	0.0300	110	80-120		
4-Bromofluorobenzene		0.0277	0.0300	92	80-120		

Lab Batch #: 823241

Sample: 573410-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/15/10 12:22	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0334	0.0300	111	80-120		
4-Bromofluorobenzene	0.0297	0.0300	99	80-120		

Lab Batch #: 823241

Sample: 573410-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/15/10 13:25	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0272	0.0300	91	80-120		
4-Bromofluorobenzene	0.0272	0.0300	91	80-120		

Lab Batch #: 823241

Sample: 388944-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/1	15/10 13:47	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0323	0.0300	108	80-120		
4-Bromofluorobenzene	0.0407	0.0300	136	80-120	**	

Lab Batch #: 823241

Sample: 388944-001 D / MD

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 09/15/10 14:08	SU	RROGATE R	ECOVERY S	STUDY	
вте	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes		1	[D]		
1,4-Difluorobenzene		0.0268	0.0300	89	80-120	
4-Bromofluorobenzene		0.0402	0.0300	134	80-120	**

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

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



Project Name: 14" Vac to Jal Legacy

Work Orders: 388944,

Project ID: SRS# 2009-92

Lab Batch #: 823241

Sample: 388944-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0268	0.0300	89	80-120		
4-Bromofluorobenzene	0.0365	0 0300	122	80-120	**	

Lab Batch #: 823241

Sample: 388944-003 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 09/15/10 16:07	SURROGATE RECOVERY STUDY						
ВТЕ	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
1,4-Difluorobenzene		0.0323	0.0300	108	80-120			
4-Bromofluorobenzene		0.0426	0.0300	142	80-120	**		

Lab Batch #: 823241

Sample: 388944-004 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/15/10 16:29	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			{D}			
1,4-Difluorobenzene	0.0269	0.0300	90	80-120		
4-Bromofluorobenzene	0.0352	0.0300	117	80-120		

Lab Batch #: 822362

Sample: 572914-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/09/10 11:09	SU	RROGATE R	RECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			{D}		
1-Chlorooctane	120	101	119	70-135	
o-Terphenyl	61.3	50.3	122	70-135	

Lab Batch #: 822362

Sample: 572914-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 09/09/10 11:28	SU	RROGATE RI	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		'-'	[D]		
1-Chlorooctane	115	99.7	115	70-135	•
o-Terphenyl	53.5	49.9	107	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

'ork Orders: 388944,

Project ID: SRS# 2009-92

Lab Batch #: 822362

Sample: 572914-1-BLK / BLK

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 09/09/10 11:49	SURROGATE RECOVERY STUDY								
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes	',	',	[D]						
1-Chlorooctane	102	100	102	70-135					
o-Terphenyl	53.5	50.2	107	70-135					

Lab Batch #: 822362

Sample: 388944-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 09/09/10 15:16	SU	RROGATE R	ECOVERY :	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	102	99.5	103	70-135	
o-Terphenyl	44.2	49.8	89	70-135	

Lab Batch #: 822362

Sample: 388944-002 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/09/10 15:57	SURROGATE RECOVERY STUDY							
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]		-			
1-Chlorooctane	120	99.7	120	70-135				
o-Terphenyl	35.5	49.9	71	70-135				

Lab Batch #: 822362

Sample: 388944-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/09/10 16:17	SU	RROGATE RI	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes 1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	51.4	50.1	103	70-135	

Lab Batch #: 822362

Sample: 388944-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 09/09/10 16:37	SURROGATE RECOVERY STUDY							
ТРН	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	y	108	100	108	70-135				
o-Terphenyl		38.0	50.1	76	70-135				

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

Work Orders: 388944,

Project ID: SRS# 2009-92

Lab Batch #: 822362

Sample: 388842-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 09/09/10 19:17	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	118	99.8	118	70-135	
o-Terphenyl	63.6	49.9	127	70-135	

Lab Batch #: 822362

Sample: 388842-001 SD / MSD

Batch: 1 N

Matrix: Soil

Units: mg/kg Date Analyzed: 09/09/10 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	115	101	114	70-135				
o-Terphenyl	54.0	50.3	107	70-135				

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution







35

35

35

Project Name: 14" Vac to Jal Legacy

Work Order #: 388944

Analyst: SEE Date Prepared: 09/14/2010

ND

ND

ND

Project ID: SRS# 2009-92 **Date Analyzed:** 09/15/2010

Lab Batch ID: 823241

Ethylbenzene

m,p-Xylenes

o-Xylene

Sample: 573410-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg		BLAN	K/BLANK	SPIKE / E	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUL	γ	~
BTEX by EPA 8021	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Benzene	_ ND	0.0994	0.0955	96	0.0998	0.1003	101	5	70-130	35	
Toluene	ND	0.0994	0.0929	93	0.0998	0.0970	97	4	70-130	35	

102

102

0.0998

0.1996

0.0998

0.1051

0.2110

0.0963

105

106

0.1011

0.2018

0.0911

Analyst: BEV

Date Prepared: 09/09/2010

Date Analyzed: 09/09/2010

4

4

71-129

70-135

71-133

Lab Batch ID: 822362

Sample: 572914-1-BKS

Batch #: 1

0.0994

0.1988

0.0994

Matrix: Solid

Units: mg/kg		BLAN	K/BLANK S	SPIKE / E	BLANK S	SPIKE DUPL	ICATE 1	RECOVE	ERY STUD	Υ	
TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]		_		
C6-C12 Gasoline Range Hydrocarbons	ND	1010	994	98	997	983	99	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1010	834	83	997	834	84	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



Form 3 - MS / MSD Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 388944

Project ID: SRS# 2009-92

Lab Batch ID: 822362

QC- Sample ID: 388842-001 S

Batch #:

Matrix: Soil

Date Analyzed: 09/09/2010

Date Prepared: 09/09/2010

Analyst: BEV

Reporting Units: mg/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY									
TPH by SW8015 Mod Analytes	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sampte %R		Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	[A]		[C]	[D] [E]		Result [F]	[G]	76	70 K	70KI D	
C6-C12 Gasoline Range Hydrocarbons	ND	1270	1230	97	1280	1220	95	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1270	1100	87	1280	1050	82	5	70-135	35	

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

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



Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 388944

Lab Batch #: 823241 Date Analyzed: 09/15/2010

Date Prepared: 09/14/2010

Project ID: SRS# 2009-92

Analyst: SEE

QC-Sample ID: 388944-001 D

Batch #: 1 Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY

reporting ones. mana	SAMI DE ,	SAMILE SAMILE DOI BICATE RECOVERT									
BTEX by EPA 8021 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
Benzene	ND	ND	NC	35							
Toluene	0.0552	0.0654	17	35							
Ethylbenzene	0.1002	0.2067	69	35	F						
m,p-Xylenes	0.2966	0.3303	11	35							
o-Xylene	0.1321	0.2255	52	35 .	F						
a,a,a-Trifluorotoluene	0.639	0.639	0	35							

Lab Batch #: 822164

Date Analyzed: 09/09/2010

Date Prepared: 09/09/2010

Analyst: JLG

QC-Sample ID: 388842-001 D

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result	Sample Duplicate	RPD	Control Limits	Flag

Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	21.2	20.7	2	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

Final 1.002

Page 13 of 15

inal 1 002

Page 14 of 1

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:	Camille Bryant	2	Project Name: 14" Vac to Jai Legacy																												
	Company Name	Basin Environ	mental Cor	nsultin	ig, LLC	;											_		P	roje	ct #:	SF	1 \$# :	<u> 200</u>)9-9	2						
	Company Address:	P.O. Box 381															_		Pro	ect	Loc:	Lea	e Co	unty	/, NI	M		,				
	City/State/Zip:	Lovington, NM	88260														-			P	O# :	PA	<u>A√J.</u>	Hen	ıry							
	Telephone No:	(575)605-7210 (WMC	ΩΛα	73		- 1	Fax No:				96-1						-	Repo		xma	t	X	Star	ndan	ď		[] T	TRRP		□ NI	PDES	;
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	Scree	ned SP-11				7-Sep-10	1215		1	x						Τ		Soil	x				\Box		$oxed{\int}$	\prod	\perp	$oldsymbol{ol}}}}}}}}}}}}}}}}$	\prod	$oxed{\mathbb{I}}$	X	
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	Scree	ned SP-13		<u> </u>		7-Sep-10	1245		1	×	igdash		Ц	4	+	_	1	Soil	↓×	┡	<u> </u>	Н	\dashv	\dashv	\dashv	\dashv	+	\bot	igoplus	\bot	M	
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Ctient: Basin Fr	w,	•							,	
Date/Time: 9/8/10		1:30								
Lab ID#: 388	94	14								
Initials: 72			•				•			
			s	ample Receipt (Check	list				
1. Samples on ice?						Blue	Water	No		
2. Shipping container	in go	od condi	tion?		ļ	₹	No	None	ļ.,,,,,	
3. Custody seals intac	t on	shipping	container (co	poler) and bottles?		(Fig.)	No	N/A	Labols of	23 S
4. Chain of Custody p	reser	nt?				(F)	No			
5. Sample instructions	з сол	nplete on	chain of cus	tody?		1989	No			
6. Any missing / extra	sam	ples?				Yes	(Ng)			
7. Chain of custody si	gned	when ref	inquished / r	eceived?		₫	No			
8. Chain of custody ag	rees	with san	ple label(s)?	· · · · · · · · · · · · · · · · · · ·			No			
9. Container labels leg	ible	and intac	t?			(Tes	No		ļ <u></u>	
10. Sample matrix / pr	oper	ties agree	with chain o	of custody?		des	No		<u> </u>	
11. Samples in proper	con	tainer / bo	ttle?			(Ge	No		ļ	
12. Samples property	pres	erved?				(TE)	No	N/A		
13. Sample container	intac	t?		····	ì	(GE)	No			
14. Sufficient sample :	amou	unt for inc	licated test(s	:)?		(Yes)	No			
15. All samples receiv	ed w	ithin suffi	cient hold ti	me?		Pes	No			
16. Subcontract of sar	mple	(s)?				Yes	⊘	N/A		
17. VOC sample have	zero	head spa	ce?		-	(Pg)	No	NA		
18. Cooler 1 No.	С	ooler 2 N	0.	Cooler 3 No.		Cooler 4 No	ο.	Cooler 5 No).	
Ibs 5	°C	lbs	°င	ibs	°င	ibs	°c	ibs	3	ႚင
			None	onformance Do	cume	ntation				
Contact:			Contacted by	y:			Date/Time:_			_
Regarding:										
Regarding.					· ·					—
Corrective Action Tak	еп:									
										—
					;					
Check all that apply:	ПС	cooling pr	ocess has be	egun shortly after sa	mpling	event and o	out of temper	ature	· · · · · · · · · · · · · · · · · · ·	
		cond	ition accepts	able by NELAC 5.5.8 perature confirm out	.3.1.a.1.	•		•		

Final 1.002

☐ Client understands and would like to proceed with analysis

Analytical Report 389406

for PLAINS ALL AMERICAN EH&S

Project Manager: Camille Bryant

14 " Vac to Jal Legacy

SRS# 2009-92

17-SEP-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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Xenco-Boca Raton (EPA Lab Code: FL01273):

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Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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





17-SEP-10

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

Reference: XENCO Report No: 389406

14 " Vac to Jal Legacy

Project Address: Lea County, NM

Camille Bryant:

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 389406. 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. 389406 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 389406



PLAINS ALL AMERICAN EH&S, Midland, TX

14 " Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Screened SP # 14	S	Sep-10-10 13:30		389406-001
Screened SP # 15	S	Sep-10-10 13:40		389406-002
Screened SP # 16	S	Sep-10-10 13:50		389406-003



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14 " Vac to Jal Legacy



Proiect ID:

SRS# 2009-92

Work Order Number: 389406

Report Date: 17-SEP-10 Date Received: 09/10/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-822471 Percent Moisture

None

Batch: LBA-822482 TPH by SW8015 Mod

None

Batch: LBA-823318 BTEX by EPA 8021

SW8021BM

Batch 823318, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is

suspected; data confirmed by re-analysis

Samples affected are: 389406-002.

4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data

confirmed by re-analysis

Samples affected are: 389406-003.

SW8021BM

Batch 823318, Benzene, Toluene recovered below QC limits in the Matrix Spike.

Samples affected are: 389406-003, -002.

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

Batch: LBA-823461 BTEX by EPA 8021

SW8021BM

Batch 823461, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is

suspected; data confirmed by re-analysis

Samples affected are: 389406-001.

4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data

confirmed by re-analysis

Samples affected are: 389406-001.

Final 1.002



Certificate of Analysi ummary 389406 PLAINS ALL AMERICAN EH&S, Midland, TX

PACCOA TO ACCOA

Project Id: SRS# 2009-92

Contact: Camille Bryant

Project Location: Lea County, NM

Project Name: 14 " Vac to Jal Legacy

Date Received in Lab: Fri Sep-10-10 02:05 pm

Report Date: 17-SEP-10
Project Manager: Brent Barron, II

								Project Manager:	Diem Banon, n	- · · · · · · · · · · · · · · · · · · ·
	Lab Id:	389406-0	01	389406-0	02	389406-0	003			
Analysis Requested	Field Id:	Screened SP	# 14	Screened SP	# 15	Screened SP	# 16			
Analysis Nequesieu	Depth:									
	Matrix:	SOIL		SOIL		. SOIL				
	Sampled:	Sep-10-10 1	3:30	Sep-10-10 1	3:40	Sep-10-10	13:50			
BTEX by EPA 8021	Extracted:	Sep-15-10 0	9:00	Sep-14-10 1	0:30	Sep-14-10	10:30			
	Analyzed:	Sep-16-10 0	14:09	Sep-15-10 1	3:44	Sep-15-10	13:20	,		
· ·	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	, RL			
Benzene		0.0011	0.0011	ND	0.0265	ND	0.0265	•		
Toluene		0.0314	0.0021	0.1400	0.0530	0.0672	0.0529			
Ethylbenzene		0.0149	0.0011	0.7463	0.0265	0.4311	0.0265			
m,p-Xylenes		0.5307	0.0021	2.849	0.0530	1.377	0.0529			
o-Xylene			0.0011	2.675	0.0265	1.203	0.0265			
Xylenes, Total		0.9918	0.0011	5.524	0.0265	2.580	0.0265			
Total BTEX		1.0392	0.0011	6.410	0.0265	3.078	0.0265			
Percent Moisture	Extracted:									
•	Analyzed:	Sep-11-100	9.22	Sep-11-100	9:22	Sep-11-10 (09:22			
	Units/RL:	%	RL	%	RL	%	RL			
Percent Moisture		5.25	1.00	5.74	1.00	5.47	1.00			
TPH by SW8015 Mod	Extracted:	Sep-10-10 1	5:30	Sep-10-10 1	5:30	Sep-10-10 1	15:30			
	Analyzed:	Sep-11-10 0	3:50	Sep-11-100	4:10	Sep-11-10 (04:49			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
C6-C12 Gasoline Range Hydrocarbons		901	15.9	645	15.8	408	15.8	-		
C12-C28 Diesel Range Hydrocarbons		2540	15.9	1930	15.8	1510	15.8			
C28-C35 Oil Range Hydrocarbons		66.4	15.9	81.6	15.8	36.8	15.8			
Total TPH		3507	15.9	2657	15.8	1955	15.8			

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

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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
- MDL Method Detection Limit
- **PQL** Practical Quantitation Limit
- * Outside XENCO's scope of NELAC Accreditation.

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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



Project Name: 14 " Vac to Jal Legacy

Work Orders: 389406,

Project ID:SRS# 2009-92

Lab Batch #: 823318

Sample: 573462-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 09/15/10 03:44	su	RROGATE RI	RROGATE RECOVERY STUDY								
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	_						
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	_						

Lab Batch #: 823318

Sample: 573462-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/15/10 04:08	SU	RROGATE F	RECOVERY	STUDY	
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Dıfluorobenzene	0.0343	0.0300	114	80-120	_
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	_

Lab Batch #: 823318

Sample: 573462-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/15/10 05:17	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021 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	0.0322	0.0300	107	80-120	

Lab Batch #: 823318

Sample: 389624-001 S / MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/15/10 06:04	SURROGATE RECOVERY STUDY									
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1,4-Dıfluorobenzene	0.0343	0.0300	114	80-120						
4-Bromofluorobenzene	0.0355	0.0300	118	80-120						

Lab Batch #: 823318

Sample: 389624-001 SD / MSD

Batch:

Matrix:Soil

Units: mg/kg Date Analyzed: 09/15/10 06:	26 SU	RROGATE R	ECOVERY	STUDY	_
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	·		{D}		
1,4-Difluorobenzene	. 0.0349	0.0300	116	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

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



Project Name: 14 " Vac to Jal Legacy

Work Orders 389406,

Project ID:SRS# 2009-92

Lab Batch #; 823318

Sample: 389406-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 09/15/10 13:20	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Dıfluorobenzene	0.0256	0.0300	85	80-120		
4-Bromofluorobenzene	0.0409	0.0300	136	80-120	**	

Lab Batch #: 823318

Sample: 389406-002 / SMP

Batch:

Matrix:Soil

Units: mg/kg Date Analyzed: 09/15/10 13:44	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			{D}			
1,4-Dıfluorobenzene	0.0236	0.0300	79	80-120	**	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120		

Lab Batch #: 823461

Sample: 573500-1-BKS / BKS

Batch:

1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/15/10 18:15	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes			[2]	1		
1,4-Dıfluorobenzene	0.0327	0.0300	109	80-120		
4-Bromofluorobenzene	0.0307	0.0300	102	80-120		

Lab Batch #; 823461

Sample: 573500-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/15/10 18:36	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	i		[D]			
1,4-Dıfluorobenzene	0.0261	0.0300	87	80-120		
4-Bromofluorobenzene	0.0309	0.0300	103	80-120		

Lab Batch #: 823461

Sample: 573500-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/15/10 19:40	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0263	0.0300	88	80-120		
4-Bromofluorobenzene	0.0279	0.0300	93	80-120		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14 " Vac to Jal Legacy

Vork Orders 389406,

Project ID:SRS# 2009-92

Matrix: Soil

Lab Batch #: 823461

Sample: 389624-002 S / MS

Batch: 1

Units: mg/kg Date Analyzed: 09/15/10 20:23	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Dıfluorobenzene	0.0336	0.0300	112	80-120	_	
4-Bromofluorobenzene	0.0330	0.0300	110	80-120		

Lab Batch #: 823461

Sample: 389624-002 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/15/10 20:44	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount {[B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes 1.4-Difluorobenzene	0.0220	0.0200		90.130		
4-Bromofluorobenzene	0.0320	0.0300	107 .	80-120 80-120		

Lab Batch #: 823461

Sample: 389406-001 / SMP

/ SMP

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 09/16/10 04:09	SU	RROGATE R	ECOVERY	STUDY	
ВТЕ	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes		•	{D}	Ì	
1,4-Difluorobenzene		0.0209	0.0300	. 70	80-120	**
4-Bromofluorobenzene		0 0607	0.0300	202	80-120	**

Lab Batch #: 822482

Sample: 572990-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 09/11/10 00:13 SURROGATE RECOVERY STUDY						
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	Analytes					
1-Chlorooctane		129	100	129	70-135	
o-Terphenyl		61.1	50.2	122	70-135	_

Lab Batch #: 822482

Sample: 572990-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg	Date Analyzed: 09/11/10 00:32	SURROGATE RECOVERY STUDY					
ТРН	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		59.3	50.0	119	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14 " Vac to Jal Legacy

Work Orders 389406,

Project ID:SRS# 2009-92

Lab Batch #: 822482

Sample: 572990-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/11/10 00:52 SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	60.3	50.2	120	70-135	

Lab Batch #: 822482

Sample: 389406-001 / SMP

Batch:

Matrix:Soil

Units: mg/kg Date Analyzed: 09/11/10 03:50	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	45.5	50.2	91	70-135			

Lab Batch #: 822482

Sample: 389406-002 / SMP

Batch: 1

Matrix:Soil

Units: mg/kg Date Analyzed: 09/11/10 04:10	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.5	124	70-135	
o-Terphenyl	56.9	49.8	114	70-135	

Lab Batch #: 822482

Sample: 389406-003 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/11/10 04:49	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.5	124	70-135	
o-Terphenyl	60.4	49.8	121	70-135	

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution





BS / BSD Recoveries



Project Name: 14 " Vac to Jal Legacy

Work Order #: 389406

Analyst: SEE

Date Prepared: 09/14/2010

Project ID: SRS# 2009-92 **Date Analyzed:** 09/15/2010

Matrix: Solid

Lab Batch ID: 823318

Sample: 573462-1-BKS

Batch #: 1

RI ANY (RI ANY SDIVE / RI ANY SDIVE DIDI ICATE DECOVEDY STUDY

Units: mg/kg		BLAN	K/BLANK S	SPIKE / B	LANK S	PIKE DUPL	ICATE I	RECOVE	YERY STUDY											
BTEX by EPA 8021	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag									
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]													
Benzene	ND	0.1004	0.0893	89	0.1006	0.0867	86	3	70-130	35										
Toluene	ND	0.1004	0.0886	88	0.1006	0.0860	85	3	70-130	35										
Ethylbenzene .	ND	0.1004	0.0928	92	0.1006	0.0901	90	3	71-129	35										
m,p-Xylenes	ND	0.2008	0.1797	89	0.2012	0.1746	87	3	70-135	35										
o-Xylene	ND	0.1004	0.0927	92	0.1006	0.0899	89	3	71-133	35										

Analyst: BRB

Date Prepared: 09/15/2010

Date Analyzed: 09/15/2010

Lab Batch ID: 823461

Sample: 573500-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg		BLANI	C/BLANK S	SPIKE / B	LANK S	PIKE DUPI	ICATE F	RECOVE	COVERY STUDY												
BTEX by EPA 8021	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag										
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]														
Benzene	ND	0.1004	0.0787	78	0.0992	0.0760	77	3	70-130	35											
Toluene	ND	0.1004	0.0765	76	0.0992	0.0746	75	3 .	70-130	35	1										
Ethylbenzene	ND	0.1004	0.0818	81	0.0992	0.0792	-80	3	71-129	35											
m,p-Xylenes	ND	0.2008	0.1627	81	0.1984	0.1577	79	3	70-135	35											
o-Xylene	ND	0.1004	0.0760	76	0.0992	0.0724	73	5	71-133	35	1										

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 #: 389406

Analyst: BEV Date Prepared: 09/10/2010

Project ID: SRS# 2009-92

Date Analyzed: 09/11/2010

Lab Batch ID: 822482 Sample: 572990-1-BKS Batch #: 1 Matrix: Solid

Units: mg/kg		BLAN	K/BLANK S	SPIKE / E	BLANK S	PIKE DUPL	ICATE F	ECOVE	RY STUD	Y	
TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1070	107	1000	1020	102	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	937	94	1000	1020	102	8	70-135	35	



Form 3 - M. **MSD Recoveries**

Project Name: 14 " Vac to Jal Legacy



Work Order #: 389406

Project ID: SRS# 2009-92

Lab Batch ID: 823318

QC- Sample ID: 389624-001 S

Batch #:

Matrix: Soil

Date Analyzed: 09/15/2010

Date Prepared: 09/14/2010

SEE Analyst:

Reporting Units: mg/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
BTEX by EPA 8021	Parent Sample Result	Spike Added	Spiked Sample Result C	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Analytes	[A]	[B]	[C]	[D]	[E]	Result [r]	76 K [G]	76	70 K	76KFD					
Benzene	, ND	0.0998	0.0615	62	0.0998	0.0836	84	30	70-130	35	х				
Toluene	ND	0.0998	0.0651	65	0.0998	0.0823	82	23	70-130	35	Х				
Ethylbenzene	ND	0.0998	0.0717	72	0.0998	0.0858	86	18	71-129	35	Ĭ				
m,p-Xylenes	ND	0.1996	0.1410	71	0.1996	0.1663	83	16	70-135	35					
o-Xylene	ND	0.0998	0.0711	71	0.0998	0.0839	84	17	71-133	35					

Lab Batch ID: 823461

QC- Sample ID: 389624-002 S

Batch #:

Matrix: Soil

Date Analyzed: 09/15/2010

Date Prepared: 09/15/2010

Analyst: BRB

Reporting Units: mg/kg		I	MATRIX SPIK	E / MAT	RIX SP	IKE DUPLICA	E DUPLICATE RECOVERY STUDY													
BTEX by EPA 8021	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R		Duplicate Spiked Sample		RPD	Control Limits %R	Control Limits	Flag									
Analytes	[A]	[B]	[C]	76 R [D]	Added [E]	Result [F]	%R [G]	%	%K	%RPD										
Benzene	ND	0.0996	0.0901	90	0.0996	0.0885	89	2	70-130	35 .										
Toluene	ND	0.0996	0.0875	88	0.0996	0.0855	86	2	70-130	35										
Ethylbenzene	ND	0.0996	0.0917	92	0.0996	0.0870	87	5	71-129	35										
m,p-Xylenes	ND	0.1992	0.1808	91	0.1992	0.1736	87	4	70-135	35										
o-Xylene	ND	0.0996	0.0802	81	0.0996	0.0765	77	5	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



Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 389406

Lab Batch #: 822471

Project ID: SRS# 2009-92

Date Analyzed: 09/11/2010

Date Prepared:09/11/2010

Analyst:JLG

QC- Sample ID: 389332-001 D

Batch #: 1

Matrix; Soil

Reporting Units: %	SAMPLE	SAMPLE I	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent	Sample Duplicate	RPD	Control	C1

Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	2.08	1.86	11	20	

inal 1.002

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765

CONTRACTOR OF THE PROPERTY OF THE PROPERTY.

1.1451

Phone: 432-563-1800 Fax: 432-563-1713

	Project Manager:	Camille Bryant														_	Pr	ojec	t Nar	ne: <u>1</u>	14" \	ac	to Ja	al Le	gacy					
	Company Name	Basin Environme	ental Con	sulting	, LLC	·												Pr	ojec	#: <u>\$</u>	SRS	‡ 20	09-9	2						
	Company Address:	P.O. Box 381														_	ı	roje	ect L	oc: <u>L</u>	.ea C	ount	ty, NI	d						_
	City/State/Zip:	Lovington, NM 8	8260																PC	#: <u>F</u>	'AA-	I. He	nry							_
	Telephone No:	(9 75)605-7210	<u> </u>	_			Fax No:		(505)	396	-142	9					Repor	Fo	rmat:		K St	anda	erd	Ε] TR	RP.	[] NP	PDES	
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AB # (lab use only)	FIEL	LD CODE		Seginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	Total #. of Combiners	CNH	HG	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	UW - UTMIKING WATER 'S, - SULOG GW - Groundwater S-Soll/Sol NP-Non-Potable Specify Oth	PH: 418.1 (8015M) 801	위	Cabons (Ca, Mg, Na, K)	SAR / ESP / CEC	Metels: As Ag Ba Cd Cr Pb Hg Se	Voledies	Semivolatiles BTEX 80218/5030 or BTEX 82	RCI	N.O.R.M.			RUSH TAT (Pre-Bahedule) 24,	Standard TAT 4 DAY
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-		ned SP #15				9-Sep-10	1340		1	ĸ						1	Soil	x						$oxed{oxed}$		\square	$oxed{oxed}$		\prod	
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Mlami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

client: Plains								
Date/Time: 9/10/10	14:05							
Lab 10#: 38940				_				
Initials:				_				
•		s	ample Rece	ipt Checkl	ist			
1. Samples on ice?					Blue	Water	No	
2. Shipping container in	good conditio	1?			(A00)	No	None	
3. Custody seals intact o	n shipping co	ntainer (co	oler) and botti	es?	(es)	No	N/A	
4. Chain of Custody pres	ent?				(Yes)	No		
5. Sample instructions c	omplete on ch	ain of cust	tody?		Yes	No		
6. Any missing / extra sa	mples?				Yes	No		
7. Chain of custody sign	ed when reling	uished / r	eceived?		Yes	No		
8. Chain of custody agre	es with sample	abel(s)?	·		Yes	No		
9. Container labels legib	ie and intact?				Yes	No		
10. Sample matrix / prop	erties agree wi	ith chain c	of custody?		Yes	No		
11. Samples in proper co	ontainer / bottle	?			Yes	No		
12. Samples properly pro	served?				Yes	No	N/A	
13. Sample container int	act?	·			Yes	No		
14. Sufficient sample am	ount for indica	ited test(s)?		Yes	No		
15. Ali samples received	within sufficie	nt hold ti	me?		Yes	No		
16. Subcontract of samp	le(s)?				Yes	Nó	NA	
17. VOC sample have ze	ro head space	?			Yes	No	N/A	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.		Cooler 4 N	o	Cooler 5 No.	
lbs 5.1 °c	lbs	°C	<u>lt</u>	os °C	lbs	°C	lbs	°C
		None	onformance	e Docume	ntation			
Contact:	Go	ntacted by	<i>t</i> :			Date/Time:		
			/ ·					Marvas
Regarding:				<u></u> _			·····	
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Corrective Action Taken	ı							
Check all that apply:			egun shortly af able by NELAC			out of temper	ature	

Final 1.002

☐ Client understands and would like to proceed with analysis

□ Initial and Backup Temperature confirm out of temperature conditions

Analytical Report 390387

for PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy

2009-92

27-SEP-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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





27-SEP-10

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

Reference: XENCO Report No: 390387

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 390387. 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. 390387 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 390387



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id		Matrix	Date Collected	Sample Depth	Lab Sample Id
Screened SP #17		S	Sep-16-10 14:30	,	390387-001
Screened SP #18		S	Sep-16-10 14:40		390387-002
Screened SP #19	•	S	Sep-16-10 14:55		390387-003



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy



Project ID:

2009-92

Report Date: 27-SEP-10

Work Order Number: 390387

Date Received: 09/17/2010

Sample receipt non conformances and Comments:

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-823839 Percent Moisture

None

Batch: LBA-823856 TPH by SW8015 Mod

None

Batch: LBA-824704 BTEX by EPA 8021

SW8021BM

Batch 824704, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is

suspected; data confirmed by re-analysis

Samples affected are: 390387-001,390387-003,390387-002.



Certificate of Analys Summary 390387 PLAINS ALL AMERICAN EH&S, Midland, TX

MACCO.

Project Id: 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14" Vac to Jal Legacy

Date Received in Lab: Fri Sep-17-10 02:50 pm

Report Date: 27-SEP-10

Project Manager: Brent Barron, II

					Project Manager:	Diene Barron, II	
	Lab Id:	390387-001	390387-002	390387-003			
Analysis Requested	Field Id:	Screened SP #17	Screened SP #18	Screened SP #19			
	Depth:						
	Matrix:	SOIL	SOIL	SOIL			
·	Sampled:	Sep-16-10 14:30	Sep-16-10 14:40	Sep-16-10 14:55			
BTEX by EPA 8021	Extracted:	Sep-25-10 15:00	Sep-25-10 15:00	Sep-25-10 15:00			
	Analyzed:	Sep-25-10 23:56	Sep-26-10 00:19	Sep-26-10 00:43			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		ND 0.0214	ND 0.0213	ND 0.0211			
Toluene		ND 0.0427	0.0451 0.0425	0.0433 0.0422			
Ethylbenzene		0.1657 0.0214	0.2326 0.0213	0.1387 0.0211			
m,p-Xylenes		0.7331 0.0427	1.208 0.0425	1.033 0.0422			
o-Xylene		0.7071 0.0214	1.099 0.0213	0.8556 0.0211			
Xylenes, Total		1.4402 0.0214	2.307 0.0213	1.889 0.0211			
Total BTEX		1.6059 0.0214	2.585 0.0213	2.071 0.0211			
Percent Moisture	Extracted:					,	
	Analyzed:	Sep-21-10 08:21	Sep-21-10 08:21	Sep-21-10 08:21			
	Units/RL:	% RL	% RL	% RL			
Percent Moisture		6.32 1.00	5.95 1.00	5.24 1.00			
TPH by SW8015 Mod	Extracted:	Sep-20-10 10:00	Sep-20-10 10.00	Sep-20-10 10:00	•		
	Analyzed:	Sep-20-10 16:32	Sep-20-10 16:51	Sep-20-10 17:10			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
C6-C12 Gasoline Range Hydrocarbons		488 16.0	538 15.9	501 15.8			
C12-C28 Diesel Range Hydrocarbons		2780 16.0	3070 15.9	3570 15.8			
C28-C35 Oil Range Hydrocarbons		97.3 16.0	99.2 15.9	139 15.8			
Total TPH		3365 16.0	3707 15.9	4210 15.8			

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 involved for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - 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
- MDL Method Detection Limit
- **PQL** Practical Quantitation Limit
- * Outside XENCO's scope of NELAC Accreditation.

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	(281) 240-4200 (214) 902 0300 (210) 509-3334 (813) 620-2000 (305) 823-8500 (432) 563-1800



Project Name: 14" Vac to Jal Legacy

'ork Orders: 390387,

Project ID: 2009-92

Lab Batch #: 824704

Sample: 574328-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 09/25/10 15:48 SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	0.0331	0.0300	110	80-120	
4-Bromofluorobenzene	0.0340	0.0300	113	80-120	

Lab Batch #: 824704

Sample: 574328-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 09/25/10 16:12 SURROGATE RECOVERY STUDY				STUDY	
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	0.0331	0.0300	110	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 824704

Sample: 574328-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/25/10 17:21	SU	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 824704

Sample: 390697-003 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 09/25/10 21:37	SURROGATE RECOVERY STUDY				
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R D	Control Limits %R	Flags
1,4-Difluorobenzene	·	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene		0.0359	0.0300	120	80-120	

Lab Batch #: 824704

Sample: 390697-003 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/25/10 22:00	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	<u>-</u>
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

Work Orders: 390387,

Project ID: 2009-92

Lab Batch #: 824704

Sample: 390387-001 / SMP

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 09/25/10 23:56 SURROGATE RECOVERY STUDY				STUDY	
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]	ļ	
1,4-Dıfluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0410	0.0300	137	80-120	**

Lab Batch #: 824704

Sample: 390387-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/26/10 00:19	00:19 SURROGATE RECOVERY STUDY				
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		1	[D]		
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0395	0.0300	132	80-120	**

Lab Batch #: 824704

Sample: 390387-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/26/10 00:43	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R {D}	Control Limits %R	Flags	
Analytes			1 '-'			
1,4-Difluorobenzene	0.0272	0.0300	91	80-120		
4-Bromofluorobenzene	0.0378	0.0300	126	80-120	**	

Lab Batch #: 823856

Sample: 573814-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg	Date Analyzed: 09/20/10 15:34	SURROGATE RECOVERY STUDY					
•	SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
A	nalytes			[D]			
1-Chlorooctane		84.4	99.8	85	70-135		
o-Terphenyl		57.4	49.9	115	70-135		

Lab Batch #: 823856

Sample: 573814-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg	Date Analyzed: 09/20/10 15:53	SURROGATE RECOVERY STUDY				
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		82 0	100	82	70-135	
o-Terphenyl		47.3	50.2	94	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

'ork Orders: 390387,

Project ID: 2009-92

Lab Batch #: 823856

Sample: 573814-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 09/20/10 16:13 SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	[**]	[2]	[D]	/•••	
1-Chlorooctane ,	81.7	99.8	82	70-135	
o-Terphenyl	44.8	49.9	90	70-135	

Lab Batch #: 823856

Sample: 390387-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/20/10 16:32	SURROGATE RECOVERY STUDY											
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
- Analytes			[D]									
1-Chlorooctane	85.4	100	85	70-135								
o-Terphenyl	58.0	50.1	116	70-135								

Lab Batch #: 823856

Sample: 390387-002 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date An	alyzed: 09/20/10 16:51	SU	RROGATE RI	ECOVERY S	STUDY	
TPH by SW8015 Analytes	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane		87.3	99.5	88	70-135	·
o-Terphenyl		46.7	49.8	94	70-135	

Lab Batch #: 823856

Sample: 390387-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/20/10 17:10	SURROGATE RECOVERY STUDY										
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
Analytes		'	{D}								
1-Chlorooctane	87.2	99.5	88	70-135							
o-Terphenyl	47.6	49.8	96	70-135							

Surrogate Recovery [D] = 100 * A / B.

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

¹¹ results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 390387

Date Prepared: 09/25/2010 Analyst: BRB

Project ID: 2009-92 Date Analyzed: 09/25/2010

Lab Batch ID: 824704

Sample: 574328-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0896	90	0.1	0.0892	89	0	70-130	35	
Toluene	ND	0.1000	0.0884	88	0.1	0.0879	88	1	70-130	35	
Ethylbenzene	ND	0.1000	0.0908	91	0.1	0.0911	91	0	71-129	35	
m,p-Xylenes	ND	0.2000	0.1793	90	0.2	0.1798	90	0	70-135	35	
o-Xylene	ND	0.1000	0.0905	91	0.1	0.0902	90	0	71-133	35	

Analyst: BEV

Date Prepared: 09/20/2010

Date Analyzed: 09/20/2010

Matrix: Solid

Lab Batch ID: 823856

Sample: 573814-1-BKS

Batch #: 1

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	998	1080	108	1000	1060	106	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1020	102	1000	988	99	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 - M MSD Recoveries

Project Name: 14" Vac to Jal Legacy



Work Order #: 390387

Project ID: 2009-92

Lab Batch ID: 824704

QC-Sample ID: 390697-003 S

Batch #:

Matrix: Soil

Date Analyzed: 09/25/2010

Date Prepared: 09/25/2010

Reporting Units: mg/kg

Analyst: BRB

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY														
BTEX by EPA 8021	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
(Analytes	[A]	[B]	ĮC)	[D]	[E]	Kesan [F]	[G]	/ °	/01	/OKI D					
Benzene	ND	0.1079	0.0976	90	0.1079	0.0950	88	3	70-130	35	<u> </u>				
Toluene	ND	0.1079	0.0960	89	0.1079	0.0934	87	3	70-130	35					
Ethylbenzene	ND	0.1079	0.0993	92	0.1079	0.0964	89	3	71-129	. 35					
m,p-Xylenes	ND	0.2158	0.1964	91	0.2158	0.1899	88	3	70-135	35					
o-Xylene	ND	0.1079	0.0988	92	0.1079	0.0954	88	4	71-133	35					

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

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



Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 390387

Lab Batch #: 823839

Project ID: 2009-92

Date Analyzed: 09/21/2010

Date Prepared: 09/21/2010

Analyst: JLG

QC- Sample ID: 390387-001 D

Percent Moisture

Analyte

Batch #: 1

Matrix: Soil

Reporting Units: %

Percent Moisture

SAMPLE / SAMPLE DUPLICATE RECOVERY												
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag								
6.32	5.73	10	20									

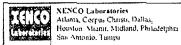
Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12800 West I-20 East Odessa, Texas 79765

Phone: 432-563-1801

	Project Manager;	Camillo Bryant															Pi	rojec	t Nas	ne:_1	4"	Vac	to ,	iai L	-oga	зсу				
	Company Name	Basin Environment	at Cons	ulting	LLC													P	rojec	r #: 5	SRS	2 (009-	92						
	Company Address:	PO Box 381															_	Proj	eçt L	oc: <u>i</u>	ea C	oun	zty, N	ŧM.						
	City/State/Zip	Lovington, NM 8826	60																PC	9. P	AA-	J He	enry							
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Document Title Sample Receipt Checklist Document No NNS - SRC RevisionDate No 90 - 05/18/19 Effective Date - 05/20/10 Page No - 1 et 1

Prelogin / Nonconformance Report - Sample Log-In

Client Plains	IBasia F							
Date/Time: OS -								
	387							
Initials: JmF								
		Sample	Receipt C	hecklist				
1. Sample on ice?					Blue	Water	Nc	
2. Shipping containe	r in good condi	tion?		~	(Yes=	No	None	i
Custody seals inta	ict on shipping	container ((cooler) and	(bottles?	Yes	No	N/A	
Chain of Custody	present?			aginte	(es)	No		İ
. Sample instruction	is complete on	chain of c	ustody?		(Yes >	No	ere bergelmakete e	! · ·
Any missing / extr	a samples?				Yes	(No.5		<u> </u>
7. Chain of custody s	signed when re	Inquished	/ received?	, <u>.</u>	(Yes)	No		
Chain of custody	agrees with sar	nple lable(517		(Yes	No		
Container labels le	egible legible a	no intact?		·	(es)	No		
10 Sample matrix /	properties agre	e with chai	in of custoo	ly?	(es	No	······································	{
11 Samples in prop	er container / b	ottle?	······································	************	es	No		<u> </u>
12. Samples propert	y preserved?		······		(Yes	No	N/A	
13 Sample containe	r intact?				Yes	No		
14. Sufficient sample	amount for in-	dicated tes	t(s)?		(Yes)	No		
15 All samples rece	ived within suff	icien: hold	time?		(Yes)	No		
6 Supcontract of s	ample(s)?				Yes	€	N/A	
17 Voc sample have	zero head sp	sce?			Yes	No	N/A	1
	Cooler 2 No.	1	Cooler 3 N	No	Cooler 4	No	Cooler 5	i No.
lbs 5.6°℃	a lbs	, _C	lbs	°C	lbs	· C	lbs	C
Contact.	N	onconfori ontacted b		urnentation	n _Date/Tin	ne		_
Regarding							······································	
Corrective ActionTa	ken							

- Check all that apply

 Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.58.3.1 a.1.

 Initial and Backup Temperature confirm out of temperature conditions

 Client understands and would like to proceed with analysis.

Analytical Report 391429

for PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy

SRS # 2009-92

01-OCT-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

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

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

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North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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





01-OCT-10

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

Reference: XENCO Report No: 391429

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 391429. 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. 391429 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 391429



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Screened SP # 20	S	Sep-24-10 13:30		391429-001
Screened SP # 21	S	Sep-24-10 13:45		391429-002
Screened SP # 22	S	Sep-24-10 14:00		391429-003
Screened SP # 23	S	Sep-24-10 14:15		391429-004
Screened SP # 24	S	Sep-24-10 14:30		391429-005



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy



Project ID:

SRS # 2009-92

Work Order Number: 391429

Report Date: 01-OCT-10 Date Received: 09/27/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-824908 Percent Moisture

Batch: LBA-824911 TPH by SW8015 Mod

Batch: LBA-825540 BTEX by EPA 8021

SW8021BM

Batch 825540, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is

suspected; data not confirmed by re-analysis Samples affected are: 391429-005,391429-001.

SW8021BM

Batch 825540, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene RPD was outside QC

limits.

Samples affected are: 391429-001, -005, -003, -002, -004

SW8021BM

Batch 825540, Benzene, Toluene recovered below QC limits in the Matrix Spike. Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 391429-001, -005, -003, -002, -004.

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

The Matrix Spike for this batch was improperly spiked causing very low recoveries. The BKS and BSD were within limits therefore validating the batch.



Certificate of Analys Summary 391429 PLAINS ALL AMERICAN EH&S, Midland, TX

inelad:

Project Id: SRS # 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14" Vac to Jal Legacy

Date Received in Lab: Mon Sep-27-10 03:22 pm

Report Date: 01-OCT-10
Project Manager: Brent Barron, II

					· · · · · · · · · · · · · · · · · · ·		1 Tojece Mai	***5c1 .	Dichi Danon,	11	
<u>.</u>	Lab Id:	391429-001	391429-002		391429-00	03	391429-0	04	391429-0	005	
Analysis Requested	Field Id:	Screened SP # 20	Screened SP # 2	1	Screened SP	# 22	Screened SP	# 23	Screened SF	P # 24	
Anuiysis Requesteu	Depth:										
	Matrix:	SOIL	SOIL		SOIL		SOIL		SOIL		
	Sampled:	Sep-24-10 13:30	Sep-24-10 13:4	15	Sep-24-10 1	4:00	Sep-24-10 1	4:15	Sep-24-10	14:30	
BTEX by EPA 8021	Extracted:	Sep-30-10 15:30	Sep-30-10 15:3	80	Sep-30-10 1	5:30	Sep-30-10 1	5:30	Sep-30-10	15:30	
·	Analyzed:	Oct-01-10 01:32	Oct-01-10 01:5	55	Oct-01-10 02	2:18	Oct-01-10 0	2.41	Oct-01-10	03:05	
	Units/RL:	mg/kg RI	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Benzene		ND 0.0217	ND 0.0	221	ND (0.0213	ND	0.0217	ND	0.0213	
Toluene		0.0572 0.0433	· ND 0.0	441	ND (0.0425	ND	0.0433	ND	0.0427	
Ethylbenzene		0.1376 0.0217	ND 0.0	221	0.0423 (0.0213	ND	0.0217	0.1157	0.0213	
m,p-Xylenes		0.5285 0.0433	0.0755 0.0	441	0.2000	0.0425	0.0925	0.0433	0.8306	0.0427	
o-Xylene		0.2740 0.0217	0.0322 0.0	221	0.1756	0.0213	0.0518	0.0217	0.7454	0.0213	
Xylenes, Total		0.8025 0.0217	0.1077 0.0	221	0.3756	0.0213	0.1443	0.0217	1.5760	0.0213	
Total BTEX		0.9973 0.0217	0.1077 0.03	221	0.4179 (0.0213	0.1443	0.0217	1.6917	0.0213	
Percent Moisture	Extracted:										
	Analyzed:	Sep-28-10 08:30	Sep-28-10 08:3	80	Sep-28-10 0	8:30	Sep-28-10 0	8:30	Sep-28-10 (08:30	
	Units/RL:	% RI	. %	RL	%	RL	%	RL	%	RL	
Percent Moisture		7.67 1.00	9.37 1	1.00	5.91	1.00	7.67	1.00	6.28	1.00	
TPH by SW8015 Mod	Extracted:	Sep-27-10 16:30	Sep-27-10 16:3	30	Sep-27-10 16	6:30	Sep-27-10 1	6:30	Sep-27-10	16:30	
	Analyzed:	Sep-27-10 20·49	Sep-27-10 21:0	8	Sep-27-10 2	1:28	Sep-27-10 2	1:48	Sep-27-10 2	22:07	
	Units/RL:	mg/kg Rl	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
C6-C12 Gasoline Range Hydrocarbons		350 16.3	132 1	16.5	436	15.9	161	16.2	850	15.9	
C12-C28 Diesel Range Hydrocarbons		1130 16.3	390 1	16.5	1930	15.9	640	16.2	2480	15.9	
C28-C35 Oil Range Hydrocarbons		56.1 16.3	19.7 1	16.5	85.1	15.9	39.2	16.2	158	15.9	
Total TPH		1536 16.3	542 1	16.5	2451	15.9	840	16.2	3488	15.9	

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.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - 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
- MDL Method Detection Limit
- **PQL** Practical Quantitation Limit
- * Outside XENCO's scope of NELAC Accreditation.

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842 Cantwell Lane, Corpus Christi, TX 78408		(361) 884-0371	(361) 884-9116



Project Name: 14" Vac to Jal Legacy

'ork Orders: 391429,

Project ID: SRS # 2009-92

Lab Batch #: 825540

Sample: 574821-1-BKS/BKS

Matrix: Solid Batch:

Units: mg/kg	Date Analyzed: 09/30/10 17:48	SURROGATE RECOVERY STUDY						
вте	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes		'	[D]				
1,4-Difluorobenzene		0.0339	0.0300	113	80-120			
4-Bromofluorobenzene		0.0343	0.0300	114	80-120			

Lab Batch #: 825540

Sample: 574821-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg	Date Analyzed: 09/30/10 18:11	SURROGATE RECOVERY STUDY						
ВТЕ	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
1,4-Difluorobenzene		0.0339	0.0300	113	80-120			
4-Bromofluorobenzene		0.0345	0.0300	115	80-120	.,		

Lab Batch #: 825540

Sample: 574821-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 09/30/10 19:21	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Dıfluorobenzene	0.0295	0.0300	98	80-120			
4-Bromofluorobenzene	0.0325	0.0300	108	80-120			

Lab Batch #: 825540

Sample: 391751-006 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/30/10 23:36	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0304	0.0300	101	80-120		
4-Bromofluorobenzene	0.0343	0.0300	114	80-120		

Lab Batch #: 825540

Sample: 391751-006 SD / MSD

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/30/10 23:59	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Dıfluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

[`]Il results are based on MDL and validated for QC purposes.



Project Name: 14" Vac to Jal Legacy

Work Orders: 391429,

Project ID: SRS # 2009-92

Lab Batch #: 825540

Sample: 391429-001 / SMP

Batch: Matrix: Soil

Units: mg/kg Date Analyzed: 10/01/10 01:32	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes .	[[(-1	[D]		
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0363	0.0300	121	80-120	**

Lab Batch #: 825540

Sample: 391429-002 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 10/01/10 01:55	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Dıfluorobenzene	0.0297	0.0300	99	80-120			
4-Bromofluorobenzene	0.0350	0.0300	117	80-120			

Lab Batch #: 825540

Sample: 391429-003 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 10/01/10 02:	SU SU	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
1,4-Difluorobenzene	0.0284	0.0300	95	80-120				
4-Bromofluorobenzene	0.0359	0.0300	120	80-120				

Lab Batch #: 825540

Sample: 391429-004 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 10/01/10 02:41	SU	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0291	0.0300	97	80-120		
4-Bromofluorobenzene	0.0341	0.0300	114	80-120		

Lab Batch #: 825540

Sample: 391429-005 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 10/01/10 03:05	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			{D}		•
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0382	0.0300	127	80-120	*

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

'ork Orders: 391429,

Batch:

Project ID: SRS # 2009-92 Matrix: Solid

Lab Batch #: 824911

Sample: 574443-1-BKS / BKS

Units: mg/kg Date Analyzed: 09/27/10 16:17 SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	1 1 - 1	[2]	[D]		
1-Chlorooctane	79.0	100	79	70-135	-
o-Terphenyl	45.5	50.1	91	70-135	

Lab Batch #: 824911

Sample: 574443-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/27/10 16:36	SURROGATE RECOVERY STUDY						
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
I-Chlorooctane	84.5	100	85	70-135			
o-Ternhenyl	46.8	50.2	93	70-135			

Lab Batch #: 824911

Sample: 574443-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 09/27/10 16:56 TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY									
·	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
!-Chlorooctane .	80.3	100	80	70-135						
o-Terphenyl	42.5	50.1	85	70-135						

Lab Batch #: 824911

Sample: 391429-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/27/10 20:49	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes 1-Chlorooctane		100	<u> </u>		
o-Terphenyl	85.3 44.4	50,1	85	70-135 70-135	

Lab Batch #: 824911

Sample: 391429-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/27/10 21:08		SURROGATE RECOVERY STUDY											
ТРН	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane		84.2	99.5	85	70-135								
o-Terphenyl		48.1	49.8	97	70-135								

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

^{&#}x27;Il results are based on MDL and validated for QC purposes.



Project Name: 14" Vac to Jal Legacy

Work Orders: 391429,

Project ID: SRS # 2009-92

Lab Batch #: 824911

Sample: 391429-003 / SMP

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 09/27/10 21:28	SURROGATE RECOVERY STUDY									
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes			[D]							
1-Chlorooctane	85.4	99.5	86	70-135						
o-Terphenyl	42.4	49 8	85	70-135						

Lab Batch #: 824911

Sample: 391429-004 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/27/10 21:48	SURROGATE RECOVERY STUDY								
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
1-Chlorooctane	84.5	99.8	85	70-135					
o-Terphenyl	44.9	49.9	90	70-135					

Lab Batch #: 824911

Sample: 391429-005 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/27/10 22:07	SU	RROGATE RI	ECOVERY S	STUDY	
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.0	99.5	92	70-135	
o-Terphenyl	37.5	49.8	75	70-135	

Lab Batch #: 824911

Sample: 391387-002 S / MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/27/10 22:2	7 SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes .			[D]		
1-Chlorooctane	84.5	99 8	85	70-135	
o-Terphenyl	42.8	49.9	86	70-135	

Lab Batch #: 824911

Sample: 391387-002 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/27/10 22:47		SU	RROGATE R	ECOVERY	STUDY	
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		83.0	99.8	83	70-135	·
o-Terphenyl		41 7	49.9 .	84	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 391429

Analyst: BRB Date Prepared: 09/30/2010

Project ID: SRS # 2009-92

Date Analyzed: 09/30/2010

Matrix: Solid

Lab Batch ID: 825540 **Sample:** 574821-1-BKS

Batch #: 1

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added	Biank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Benzene	ND	0.1000	0.1053	105	0.1	0.1060	106	1	70-130	35	
Toluene	ND	0.1000	0.1034	103	0.1	0.1043	104	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1070	107	0.1	0.1078	108	i	71-129	35	
m,p-Xylenes	ND	0.2000	0.2084	104	0.2	0.2098	105	1	70-135	35	
o-Xylene	ND	0.1000	0.1053	105	0.1	0.1054	105	0	71-133	35	

Analyst: BEV

Date Prepared: 09/27/2010

Date Analyzed: 09/27/2010

Lab Batch ID: 824911

Sample: 574443-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result (F)	Bik. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	·	נען	[C]	رما	[E]	Kesun [r]	[0]				ĺ
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1030	103	1000	1070	107	4	70-135	35	`
C12-C28 Diesel Range Hydrocarbons	ND	1000	942	94	1000	1030	103	9	70-135	35	

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



Form 3 - MS / MSD Recoveries

Project Name: 14" Vac to Jal Legacy



Work Order #: 391429

Project ID: SRS # 2009-92

Lab Batch ID: 825540

QC- Sample ID: 391751-006 S

Batch #:

Matrix: Soil

Date Analyzed: 09/30/2010

Date Prepared: 09/30/2010

Analyst: BRB

Reporting Units: mg/kg

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Benzene	ND	0.1148	0.0014	1	0.1148	0.0967	84	194	70-130	35	XF
Toluene	ND	0.1148	0.0014	1	0.1148	0.0833	73	193	70-130	35	XF
Ethylbenzene	ND	0.1148	0.0011	1	0.1148	0.0681	59	194	71-129	35	XF
m,p-Xylenes	ND	0.2296	0.0020	1	0.2296	0.1308	57	194	70-135	35	XF
o-Xylene	ND	0.1148	0.0011	1	0.1148	0.0683	59	194	71-133	35	XF

Lab Batch ID: 824911

QC- Sample ID: 391387-002 S

Batch #:

Matrix: Soil

Date Analyzed: 09/27/2010

Date Prepared: 09/27/2010

Analyst: BEV

Departing United malka

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH by SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [Aj	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
C6-C12 Gasoline Range Hydrocarbons	ND	1090	1160	106	1090	1160	106	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1090	905	83	1090	925	85	2	70-135	35	



Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 391429

Lab Batch #: 824908

Project ID: SRS # 2009-92

Date Analyzed: 09/28/2010 Date Prepared: 09/28/2010 Analyst: JLG

QC- Sample ID: 391388-002 D

Batch #: 1

Matrix: Soil

Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]	ļ		
Percent Moisture	21.4	22.2	4	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

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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:	Camille Bry	ent													_	f	тојс	ect N	ame	: 14	• Va	c to	o Jai	<u>ما ا</u>	gacy	_				
	Company Name	Basin Envir	onmental Cor	nsulting	<u>, LLC</u>											_		1	Proje	ect S	: SR	S#	200	9-92	2						
	Company Address	P.O. Box 38	1															Pro	oject	Loc	Lea	Co	unty	, NM							
	City/State/Zip:	Lovington, I	NM 88260													_				PO #:	<u> PA</u>	MJ.	Han	ıry							
	Telephone No:	(575)605-72	10				Fax No.		(50:	5) 38	6-14	29					Rep	ort F	orm	at:	X	Ste	ndan	d	[TR	(RP		D NE	PDES	3
	Sampler Signature	Cm	، نوه،	7		الجيد	e-mail;		cib	orya	ınt@	Dba	asir	1-00	nsu	— Iting	.con	n													
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Atlanta, Boca Raton, Corpus Christi, Dallas

Phoenix, San Antonio, Tampa

Document No.: SYS-SRC evision/Date: No 01, 5/27/2010 Effective Date 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-in

client: Basin Env. / Plains				
Data/Time: 9.27.10 15:22				
Lab ID#: 391479				
Initials: AE				
Sample Receipt Check	ilst	1		
1. Samples on Ice?	Blue	Water	No	
2. Shipping container in good condition?	Yes	No	None	
3. Custody seels intact on shipping container (cooler) and bottles?	(B)	No	N/A	
4. Chain of Custody present?	(Face)	No		
5. Sample instructions complete on chain of custody?	(Geo)	No		
6. Any missing / extra samples?	Yes	(Rich		
7. Chain of custody signed when relinquished / received?	(Y68)	No		
8. Chain of custody agrees with sample label(s)?	(Fee)	No		
9. Container labels legible and intact?	Ton	No		
10. Sample matrix / properties agree with chain of custody?	(Yea)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Ves)	No.	NA	
13. Sample container intact?	(Y89)	No		
14. Sufficient sample amount for indicated test(s)?	(Fes)	No		
15. All samples received within sufficient hold time?	(Fgs)	No		
16. Subcontract of sample(s)?	Yes	. No	(NA)	
17. VOC sample have zero head space?	(a)	No	N/A	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No		Cooler 5 No.	
ibs 4,1 °C ibs °C ibs °C	lbs	°c	ibs	•
Nonconformance Docume	ntation	,		
Contact: Contacted by:		Date/Time:		
Contacted by.		Demailue:		
Regarding:				
Corrective Action Teken:		1		
TOTAL TOTAL TOTAL				
				
				

Check all that apply:

Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1a.1.

Chital and Backup Temperature confirm out of temperature conditions

Client understands and would like to proceed with analysis

Analytical Report 392369

for PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy

SRS # 2009-92

13-OCT-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

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Xenco-Atlanta (EPA Lab Code: GA00046):

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13-OCT-10

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

Reference: XENCO Report No: 392369

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 392369. 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. 392369 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 392369



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Screened SP # 25	S	Sep-30-10 13:00		392369-001
Screened SP # 26	S	Sep-30-10 13:20		392369-002
Screened SP # 27	S .	Oct-01-10 13:30		392369-003
Screened SP # 28	S	Oct-01-10 13:50		392369-004

CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy



Project ID:

SRS # 2009-92

Work Order Number: 392369

Report Date: 13-OCT-10 Date Received: 10/04/2010

Sample receipt non conformances and Comments:

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-826738 BTEX by EPA 8021

SW8021BM

Batch 826738, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by reanalysis. Samples affected are: 575584-1-BLK.

Final 1.001



Certificate of Analys Summary 392369 PLAINS ALL AMERICAN EH&S, Midland, TX

melad

Project Id: SRS # 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14" Vac to Jal Legacy

Date Received in Lab: Mon Oct-04-10 03:09 pm

Report Date: 13-OCT-10
Project Manager: Brent Barron, II

Lab Id:											
Lab Ia:	392369-0	01	392369-0	02	392369-0	003	392369-0	004			
Field Id:	Screened SP	# 25	Screened SP	# 26	Screened SP	# 27	Screened SI	P # 28			
Depth:											
Matrix:	SOIL		SOIL		SOIL		SOIL	.			
Sampled:	Sep-30-10 1	3:00	Sep-30-10 1	13:20	Oct-01-10 1	3:30	Oct-01-10	13:50			
Extracted:	Oct-08-10 1	8:00	Oct-08-10 1	8:00	Oct-08-10 1	18:00	Oct-08-10	18:00			
Analyzed:	Oct-09-10 (01:44	Oct-09-10 (02:07	Oct-09-10 0	02:30	Oct-09-10	02:54			
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL			
	ND	0.0539	ND	0.0542	ND	0.0533	ND	0.0534			
	ND	0.1078	ND	0.1083	ND	0.1066	ND	0.1068			
	0.0652	0.0539	ND	0.0542	ND	0.0533	ND	0.0534			
	0.1956	0.1078	0.1365	0.1083	0.1493	0.1066	0.1111	0.1068			
	0.0749	0.0539	ND	0.0542	0.0576	0.0533	ND	0.0534			
	0.2705	0.0539	0.1365	0.0542	0.2069	0.0533	0.1111	0.0534			
	0.3357	0.0539	0.1365	0.0542	0.2069	0.0533	0.1111	0.0534			
Extracted:											
Analyzed:	Oct-07-10 0	08:30	Oct-07-10 0	8:30	Oct-07-10 0	08:30	Oct-07-10	08:30			
Units/RL:	%	RL	%	RL	%	RL	%	RL			
	7.22	1.00	7.68	1.00	6.20	1.00	6.38	1.00			
Extracted:	Oct-05-10 0	9:30	Oct-05-10 0	9:30	Oct-05-10 0	9:30	Oct-05-10	09:30	-		-
Analyzed:	Oct-05-10 1	2:07	Oct-05-10 1	2:26	Oct-05-10 1	2:45	Oct-05-10	13:05			
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	-		
	132	16.1	104	16.3	156	15.9	96.4	16.0			
	1280	16.1	1200	16.3	1820	15.9	1080	16.0			
	35.0	16.1	26.3	16.3	31.4	15.9	27.4	16.0			
	1447	16.1	1330	16.3	2007	15.9	1204	16.0			
	Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Analyzed:	Depth: Matrix: SOIL	Depth: SOIL Sep-30-10 13:00	Depth: Matrix: SOIL SOIL SOIL	Depth: SOIL SOIL SOIL	Depth: Matrix: SOIL SOIL SOIL SOIL Sampled: Sep-30-10 13:00 Sep-30-10 13:20 Oct-01-10 10	Depth: SOIL SOIL SOIL SOIL SOIL Sampled: Sep-30-10 13:00 Sep-30-10 13:20 Oct-01-10 13:30	Depth: Matrix: SOIL SOIL SOIL SOIL SOIL SOIL Sampled: Sep-30-10 13:00 Sep-30-10 13:20 Oct-01-10 13:30 Oct-01-10	Matrix: SOIL Extracted: Oct-08-10 18:00 Oct-08-10 18:00 Oct-08-10 18:00 Oct-09-10 02:30 Oct-09-10 02:54 Analyzed: Oct-09-10 01:44 Oct-09-10 02:07 Oct-09-10 02:30 Oct-09-10 02:54 Units/RL: mg/kg RL mg/kg ND	Matrix: SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL Sompled: Sep-30-10 13:00 Sep-30-10 13:20 Oct-01-10 13:30 Oct-01-10 13:50 Oct-08-10 18:00 Oct-08-10 18:00 Oct-08-10 18:00 Oct-08-10 18:00 Oct-09-10 01:44 Oct-09-10 02:07 Oct-09-10 02:30 Oct-09-10 02:54 Oct-09-10 01:44 Oct-09-10 02:07 Oct-09-10 02:30 Oct-09-10 02:54 Oct	Depth: Matrix: SOIL SO

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
- MDL Method Detection Limit
- **PQL** Practical Quantitation Limit
- * Outside XENCO's scope of NELAC Accreditation.

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Project Name: 14" Vac to Jal Legacy

7ork Orders: 392369,

Project ID: SRS # 2009-92

Lab Batch #: 826738

Sample: 575584-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 10/08/10 18:48	l su	RROGATE RI	ECOVERY	STUDY	
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
I,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 826738

Sample: 575584-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 10/	08/10 19:11	SU	JRROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021		mount 'ound [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes				[D]		
1,4-Dıfluorobenzene	0.	0304	0.0300	. 101	80-120	
4-Bromofluorobenzene	. 0.	0303	0.0300	101	80-120	

Lab Batch #: 826738

Sample: 575584-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 10/08/10 19:34	SU	RROGATE RI	ECOVERY	STUDY	
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0165	0.0300	55	80-120	*

Lab Batch #: 826738

Sample: 392818-001 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 10/08/10 23:49	SU	RROGATE R	ECOVERY	STUDY	
ВТЕ	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	Analytes			[10]		
1,4-Dıfluorobenzene		0.0305	0.0300	102	80-120	
4-Bromofluorobenzene		0.0325	0.0300	108	80-120	

Lab Batch #: 826738

Sample: 392818-001 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 10/09/10 00:12	SU	RROGATE R	ECOVERY	STUDY	
ВТЕ	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	Analytes			ן עון		
1,4-Dıfluorobenzene		0.0302	0.0300	101	80-120	
4-Bromofluorobenzene		0.0316	0.0300	105	80-120	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

Work Orders: 392369,

Project ID: SRS # 2009-92

Lab Batch #: 826738

Sample: 392369-001 / SMP

Matrix: Soil Batch: 1

Units: mg/kg	Date Analyzed: 10/09/10 01:44	SURROGATE RECOVERY STUDY						
ВТЕ	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
1,4-Difluorobenzene		0.0270	0.0300	90	80-120			
4-Bromofluorobenzene		0.0282	0.0300	94	80-120			

Lab Batch #: 826738

Sample: 392369-002 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 10/09/10 02:07	Date Analyzed: 10/09/10 02:07 SURROGATE				
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			D	İ	
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene .	0.0281	0.0300	94	80-120	

Lab Batch #: 826738

Sample: 392369-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 10/09/10 02:30	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes	:	İ	[D]				
1,4-Difluorobenzene	0.0273	0.0300	91	80-120			
4-Bromofluorobenzene	0.0287	0.0300	96	80-120			

Lab Batch #: 826738

Sample: 392369-004 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 10	/09/10 02:54	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes	ļ		[D]					
1,4-Difluorobenzene	0.0268	0.0300	89	80-120				
4-Bromofluorobenzene	. 0.0281	0.0300	94	80-120				

Lab Batch #: 826063

Sample: 575177-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg	Date Analyzed: 10/05/10 11:09	SU	RROGATE RI	ECOVERY S	STUDY	•			
ТРН	TPH by SW8015 Mod Analytes Chlorooctane	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes				[D]					
1-Chlorooctane	Chlorooctane		101	93	70-135				
o-Terphenyl		53.5	50.3	106	70-135				

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

'ork Orders: 392369,

Project ID: SRS # 2009-92

Lab Batch #: 826063

Sample: 575177-1-BSD / BSD

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 10/05/10 11:29	St	SURROGATE RECOVERY STUDY						
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes	[[]	12,	[D]					
1-Chlorooctane	. 94.0	99.9	94	70-135				
o-Terphenyl	58.5	50.0	117	70-135				

Lab Batch #: 826063

Sample: 575177-1-BLK / BLK

Batch: Matrix: Solid

SURROGATE RECOVERY STUDY Date Analyzed: 10/05/10 11:48

Units: mg/kg Date Analyzed: 10/05/10 11:48	SURROGATE RECOVERY STUDY						
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1-Chlorooctane	94.2	99.5	95	70-135			
o-Terphenyl	51.5	49.8	103	70-135			

Lab Batch #: 826063

Sample: 392369-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 10/05/10 12:07	12:07 SURROGATE RECOVERY STU				
	SW8015 Mod nalytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		102	99.7	102	70-135	
o-Terphenyl		60.4	49.9	121	70-135	

Lab Batch #: 826063

Sample: 392369-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 10/05/10 12:26	SURROGATE RECOVERY STUDY						
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes				[D]				
1-Chlorooctane		98.1	100	98	70-135			
o-Terphenyl		57.1	50.2	114	70-135			

Lab Batch #: 826063

Sample: 392369-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 10/05/10 12:45	SU	SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
I-Chlorooctane	96.9	99.5	97 ·	70-135			
o-Terphenyl	59.3	49.8	119	70-135			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: 14" Vac to Jal Legacy

Work Orders: 392369,

Project ID: SRS # 2009-92

Lab Batch #: 826063

Sample: 392369-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/05/10 13:05	SURROGATE RECOVERY STUDY						
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1-Chlorooctane	100	100	100	70-135			
o-Terphenyl	57.9	50.0	116	70-135			

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution







35

35

35

Project Name: 14" Vac to Jal Legacy

Work Order #: 392369

Analyst: BRB

Lab Batch ID: 826738

Analytes
Benzene
Toluene

Ethylbenzene

m,p-Xylenes

o-Xylene

Date Prepared: 10/08/2010

Project ID: SRS # 2009-92

Date Analyzed: 10/08/2010

Sample: 575584-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BTEX by EPA 8021

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
ND	0.1000	0.1159	116	0.1	0.1122	112	3	70-130	35	
ND	0.1000	0.1178	118	0.1	0.1139	114	3	70-130	35	

0.1137

0.2328

0.1127

114

116

0.1

0.2

Analyst: BEV

Date Prepared: 10/05/2010

0.1176

0.2406

0.1151

118

120

115

Date Analyzed: 10/05/2010

71-129

70-135

71-133

3

3

Lab Batch ID: 826063

Sample: 575177-1-BKS

ND

ND

ND

Batch #: 1

0.1000

0.2000

0.1000

Matrix: Solid

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
TPH by SW8015 Mod	Blank Sample Result [A]		Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]						
C6-C12 Gasoline Range Hydrocarbons	ND	1010	1010	100	999	1010	101	0	70-135	35			
C12-C28 Diesel Range Hydrocarbons	· ND	1010	936	93	999	980	98	5	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 / MSD Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 392369

Project ID: SRS # 2009-92

Lab Batch ID: 826738

QC- Sample ID: 392818-001 S

Batch #:

Matrix: Soil

Date Analyzed: 10/08/2010

Date Prepared: 10/08/2010

BRB

Analyst:

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021 Analytes	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	[A]	Added [B]	[C]	[D]	(E)	Result [F]	[G]	70	70K	/0KFD	
Benzene	ND	0.1063	0.1027	97	0.1063	0.1013	95	1	70-130	35	
Toluene	ND	0.1063	0.1027	97	0.1063	0.1008	95	2	70-130	35	
Ethylbenzene	ND	0.1063	0.1011	95	0.1063	0.0996	94	1	71-129	35	
m,p-Xylenes	ND	0.2125	0.2088	98	0.2125	0.2048	96	2	70-135	35	
o-Xylene	ND	0.1063	0.1037	98	0.1063	0.1018	96	2	71-133	35	

15



Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 392369

Lab Batch #: 826348

Date Analyzed: 10/07/2010

Project ID: SRS # 2009-92

Date Prepared: 10/07/2010 Analyst: JLG

Batch #: QC-Sample ID: 392371-001 D

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: %

Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	6.99	6.48	8	20	

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: Camille Bryant														Pr		t Na						Leg	есу				_
	Company Name Basin Environmental	Consulti	ng, LLC	:								_				P	rojec	t #:	SRS	# 2	009	92						
	Company Address: P.O. Box 381							_								Proj	ect L	oc:	Lea I	Cour	nty,	NM						_
	City/State/Zip. Lowington, NM 88260																PC	# : <u> </u>	PAA	J. F	lenr							
	Telephone No (575)605-7210				Fax No:		(50	5) 3	96-14	29					Repor	t Fa	mut		X s	tana	tard		П	TRE	æ		NPD	ES
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XENCO Laboratories

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

Document Title Sample Receipt Checklist Document No., SYS-SRC Revision/Date: No 01, 5/27/2010

Effective Date 5/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Freiogiii / Noncomormance Repo	ar - Senithi
Client Plains	
Date/Time: 10/4/10 15:09	
Lab ID#: 397369	
Initials: 48	
Sample Receipt Chec	klist
1. Samples on ice?	Blue
2. Shipping container in good condition?	Yes
3. Custody seals intact on shipping container (cooler) and pottles?	Yes

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

100	1. 1	 ING		IUS	<u> </u>	IDS		100	
			Nonconfor	mance Do	cumentat	tion			
Contact:		 Conta	cted by:			Dat	te/Time:		
legarding: _		 			·····				

Check all that apply:

Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.6.8.3.1.a.1.

Initial and Backup Temperature confirm out of temperature conditions

Client understands and would like to proceed with analysis

Analytical Report 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) 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)

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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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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.

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. 337179 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 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

Proiect ID: 2009-092 Report Date: 14-JUL-09 Date Received: 07/06/2009 Work Order Number: 337179

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 reanalysis. 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 Analys **Summary 337179** PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2009-092

Contact: Jason Henry

Project Name: 14" Vac to Jal Legacy

Project Location: Lea County, NM

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

Report Date: 14-JUL-09

Project Manager: Brent Barron, II

				1 toject Wanager. Brent Barron, n
	Lab Id:	337179-001	337179-002	
Analysia Banyastad	Field Id:	SB-2 Prelim GW	SB-3 Prelim GW	
Analysis Requested	Depth:			
	Matrix:	WATER	WATER	
	Sampled:	Jul-02-09 07:30	Jul-02-09 13:00	
Anions by EPA 300	Extracted:			
2, 211200	Analyzed:	Jul-06-09 14 02	Jul-06-09 14:02	
	Units/RL:	mg/L RL	mg/L RL	
Chloride		10200 500	10500 500	
BTEX by EPA 8021B	Extracted:	Jul-11-09 11:00	Jul-11-09 11:00	
DIEA by EIA 0021B	Analyzed:	Jul-13-09 14:25	Jul-13-09 14:43	
	Units/RL:	· mg/L RL	mg/L RL	,
Benzene		0.0063 0.0010	ND 0.0010	
Toluene		0.0158 0.0020	ND 0.0020	
Ethylbenzene		0 0054 0.0010	ND 0.0010	
m,p-Xylenes		0.0070 0 0020	ND 0 0020	
o-Xylene		0.0037 0 0010	ND 0.0010	
Total Xylenes		0.0107 0 0010	ND 0.0010	
Total BTEX		0.0382 0.0010	ND 0.0010	
TDS by SM2540C	Extracted:			
122 2, 5,120 100	Analyzed:	Jul-07-09 15:22	Jul-07-09 15 22	.
	Units/RL:	mg/L RL	mg/L RL	
Total dissolved solids		19700 5.00	20500 5.00	

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 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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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

'ork Orders: 337179,

Sample: 533575-1-BKS / BKS

Project ID: 2009-092

Lab Batch #: 765343

Matrix: Water Batch:

Units: mg/L Date Analyzed: 07/13/09 12:34	SU	RROGATE R	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Dıfluorobenzene	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:

Matrix: Water

SURROGATE RECOVERY STUDY Units: mg/L Date Analyzed: 07/13/09 12:53 Amount True Control BTEX by EPA 8021B Found Amount Recovery Limits Flags [B] %R %R [A] [D]Analytes 1,4-Dıfluorobenzene 0.0315 105 0.0300 80-120

0.0356

4-Bromofluorobenzene Lab Batch #: 765343

Sample: 533575-1-BLK / BLK

0.0300

1

Matrix: Water

119

80-120

SURROGATE RECOVERY STUDY Date Analyzed: 07/13/09 13:30 Units: mg/L BTEX by EPA 8021B Amount True Control Flags Found Amount Recovery Limits [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0275 0.0300 92 80-120 4-Bromofluorobenzene 0.0192 0.0300 80-120

Lab Batch #: 765343

Sample: 337179-001 / SMP

Batch:

Matrix: Water

Units: mg/L Date Analyzed: 07/13/09 14:25	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE RI	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene					*
4-Bromotiuorobenzene	0.0229	0.0300	76	80-120	*

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

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,

- 00 (000 00 (0 1) (0 -

Project 1D: 2009-092

Lab Batch #: 765343

Sample: 336977-006 S / MS

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	Control Limits %R	Flags					
Analytes		'-'	[D]							
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	SU	SURROGATE RECOVERY STUDY										
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
	Analytes			[D]									
1,4-Dıfluorobenzene		0.0485	0.0300	162	80-120	*							
4-Bromofluorobenzene		0.0331	0.0300	110	80-120								

Surrogate Recovery [D] = 100 * A / B

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

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



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 #:	BLANK/BLANK SPIKE RECOVERY STUDY										
Anions by EPA 300	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags						
Analytes	[144]	101	[C]	[D]	'**							
Chloride	ND	10.0	9.22	92	90-110							



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 337179

Analyst: ASA

Date Prepared: 07/11/2009

Project ID: 2009-092

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														
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag					
Analytes		[Bj	[C]	[D]	[E]	Result [F]	[G]									
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

Lab Batch ID: 764871

Sample: 764871-1-BKS

Date Prepared: 07/07/2009

Date Analyzed: 07/07/2009

Batch #: 1

Matrix: Water

Units: mg/L	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										!
TDS by SM2540C	Blank Sample Result [A]	Spike Added	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result IF!	BIK. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[19]	[C]	[D]	ĮE)	resur [1]	[0]				
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

Project ID: 2009-092

Date Prepared: 07/06/2009

Analyst: LATCOR

Batch #:

Water Matrix:

Reporting Units: mg/L	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 - MS / MSD Recoveries

Project Name: 14" Vac to Jal Legacy



Work Order #: 337179

Project ID: 2009-092

Lab Batch ID: 765343

QC- Sample ID: 336977-006 S

Batch #:

Matrix: Water

Date Analyzed: 07/13/2009

Analyst: ASA

Date Prepared: 07/11/2009

Reporting Units: mg/L	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY														
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Analytes	[A]	[B]		[D]	[E]		[G]				1				
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-Xvlene	ND	0.1000	0.0704	70	0.1000	0.0728	73	3	71-133	25	Х				



Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 337179

Lab Batch #: 764628 Date Analyzed: 07/06/2009

QC- Sample ID: 337000-001 D

Date Prepared: 07/06/2009

Project ID: 2009-092 Analyst: LATCOR

Batch #:

Matrix: Water

Reporting Units: mg/L SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by EPA 300 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 #:

Matrix: Water

Reporting Units: mg/L	SAMPLE	SAMPLE SAMPLE DUPLICATE RECOVERY											
TDS by SM2540C	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag								
Analyte		[B]											
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

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Environmental Lab of Texas

. CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12609 West I-20 East Odessa, Texas 79765 Phone: 432-563-1800 Fax: 432-563-1713

	Project Manager:	Camille Bryant											-			P	rojec	t Nai	ne:_1	4: \	ac 1	to J	al L	ega	су				
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	City/State/Zip:	ovington, NM 88250																PC	#: <u>P</u>	AA -	Jaso	on He	enry						
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Environmental Lab of Texas

fance/ Corrective Action Report- Sample Log-In

valiance corrective Action (Ne)		•		
tiens Basin Env. Plains				
ate/ Time. 7.0.09 12:35			•	
ab 10 #. 337179				
			•	
utials: aL				
Sample Receipt	Chacklist			
50p.	on contract		,	Client Initial
1 Temperature of container/ cooler?	Yes	No	1 4.1 °C	
2 Shipping container in good condition?	Yes	No		
3 Custody Seals intact on shipping container/ cooler?	'Yes.'	No	Not Present	
Custody Seals intact on sample bottles/ container?	Yes	No	Not Present :	
5 Chain of Custody present?	γes .	No		
6 Sample Instructions complete of Chain of Custody?	(Yes	No -	,	
7 Chain of Custody signed when relinquished/ received?	Yes	·No .	1 .	
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	1, , , ,	
11: Containers supplied by ELOT?	(Yes	·-No	<u> </u>	<u> </u>
12 Samples in proper container/ bottle?	(7€S) ∴	, No	See Below.	1.00
13 Samples properly preserved?	(Yes	No	See Below-	1 ' .'
114 Sample bottles intact?	(Yes	No		1 .
15 Preservations documented on Chain of Custody?	Yes	No	<u> </u>	1
16. Containers documented on Chain of Custody?	(Yes)	,No	h	
17. Sufficient sample amount for indicated test(s)?	Yes	No.	See Below.	تحضيا
18 All samples received within sufficient hold time?	Yes	No	See Below	1 7
19. Subcontract of sample(s)?	Yes	No	Not Applicable	,2
20 VOC samples have zero headspace?	Yes	No .	Not Applicable.	نا
Variance Docu		1. J.	F +4	
vanance bocur	nentation			
Contacted by:	*		Date/ Time:	1
Jonassa, Johnson J.		-	Date Tittie.	
Regarding:				
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Corrective Action Taken.				
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Check all that Apply: See attached e-mail/ fax			5	
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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)

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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: 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 Analys Summary 337272 PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Project Location: Lea Co., NM

Contact: Jason Henry

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, Il

			 	Project Manager:	Dient Darion, II	
	Lab Id:	337272-001				
Analysis Requested	Field Id:	MW-I				
Anulysis Nequesieu	Depth:					
	Matrix:	WATER				
	Sampled:	Jul-06-09 10:45				
Anions by EPA 300	Extracted:					
	Analyzed:	Jul-08-09 17·29				,
	Units/RL:	mg/L RL				
Chloride		5300 250				
BTEX by EPA 8021B Extracted:		Jul-08-09 18:00				
	Analyzed:	Jul-11-09 17 06				
	Units/RL:	mg/L RL	•			4
Benzene		ND 0 0010				
Toluene		ND 0 0020				
Ethylbenzene		ND 0.0010				
m,p-Xylenes		ND 0.0020				
o-Xylene		ND 0.0010				
Total Xylenes		ND 0.0010				
Total BTEX		ND 0.0010				
TDS by SM2540C	Extracted:					
	Analyzed:	Jul-07-09 15:22	-			
	Units/RL:	mg/L RL				
Total dissolved solids		14300 5 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 involved 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.
- **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	(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

'ork Orders: 337272,

Project ID: 2009-092

Lab Batch #: 765196

Sample: 533485-1-BKS / BKS

Matrix: Water

Units: mg/L Date Analyzed: 07/11/09 10:38	St	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		',	[D]		
1,4-Dıfluorobenzene	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:

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	Control Limits %R	Flags			
Analytes			[D]					
1,4-Dıfluorobenzene	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:

Matrix: Water

Units: mg/L Date Analyzed: 07/11/09 11:43	SU	RROGATE RI	ECOVERY :	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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							
вте	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Dıfluorobenzene		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	SU	SURROGATE RECOVERY STUDY						
	oy EPA 8021B	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

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal - Legacy

Work Orders: 337272,

Project ID: 2009-092

Lab Batch #: 765196

Sample: 337033-002 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 07/12/09 08:02	SU	RROGATE RI	E RECOVERY STUDY						
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes			[D]						
1,4-Difluorobenzene		<0.0000	0.0300	0	80-120	*				
4-Bromofluorobenzene		<0.0000	0.0300	0	80-120	*				

Surrogate Recovery [D] = 100 * A / B

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

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Blank Spike Recovery



Project Name: 14" Vac to Jal - Legacy

√ork 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 #:

RLANK /RLANK SPIKE RECOVERY STI

Reporting Onts. 111g/L	Batch #: 1 BLANK/BLANK SPIKE RECOVERY STUDY						
Anions by EPA 300	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags	
Analytes	[A]	[B]	Result [C]	%R [D]	%R		
Chloride	ND	10.0	9.03	90	90-110		



BS / BSD Recoveries



Project Name: 14" Vac to Jal - Legacy

Work Order #: 337272

Analyst: BRB **Date Prepared:** 07/08/2009 **Project ID: 2009-092**

Date Analyzed: 07/11/2009

Lab Batch ID: 765196

Sample: 533485-1-BKS

Batch #: 1

Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY								Y		
Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Biank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	[R]	[C]	ן עון	l (R)	Kesun [F]	[G]				
ND	0.1000	0.0924	92	0.1	0.0933	93	1	70-125	25	
ND	0.1000	0.0872	87	0.1	0.0883	88	1	70-125	25	
ND	0.1000	0.0961	96	0.1	0.0984	98	2	71-129	25	
ND	0.2000	0.1950	98	0.2	0.1992	100	2	70-131	25	
ND	0.1000	0.0929	93	0.1	0.0947	95	2	71-133	25	
	Sample Result [A] ND ND ND ND ND	Blank Spike Added B B B B B B	Blank Spike Blank Spike Result [B] [C] ND 0.1000 0.0924 ND 0.1000 0.0872 ND 0.1000 0.0961 ND 0.2000 0.1950	Blank Spike Spike Spike Spike Spike Result [A] [B] [C] [D]	Blank Spike Added Spike Result [D] [E] ND 0.1000 0.0924 92 0.1 ND 0.1000 0.0872 87 0.1 ND 0.1000 0.0961 96 0.1 ND 0.2000 0.1950 98 0.2	Blank Spike Added Spike Result [D] E]	Blank Spike Added Spike Result [D] E] MD 0.1000 0.0924 92 0.1 0.0933 93 MD 0.1000 0.0961 96 0.1 0.0984 98 MD 0.2000 0.1950 98 0.2 0.1992 100	Blank Spike Added Spike Result [A] [B] [C] [D] [E] Spike Result F] Spike Spike Spike Spike Spike Spike Spike Spike Spike Spike Spike Spike Spike Spike Spike Spike Duplicate %R [G] %Result [F] Spike Sp	Blank Spike Added Spike Result [A] [B] [C]	Spike Spike Spike Spike Spike Spike Added Spike Spike Added Spike Spike Spike Maded Spike Spik

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										
TDS by SM2540C	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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

Lab Batch #: 764860

Date Analyzed: 07/08/2009

Project ID: 2009-092

Date Prepared:

07/08/2009

Analyst: LATCOR

QC- Sample ID: 337428-001 S

Batch #:

Matrix: Water

Reporting Units: mg/L	MATE	MATRIX / MATRIX SPIKE RECOVERY STUDY								
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
Analytes	[A]	[B]		[~]						
Chloride	. 127	100	241	114	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 - MS / 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 #:

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										
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C] %R [D]		Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Benzene	0.0316	0.1000	ND	0	0.1000	ND	0	NC	70-125	25	х
Toluene	0.0071	0.1000	ND	0	0.1000	ND	0	NC	70-125	25	Х
Ethylbenzene	0.0021	0.1000	ND	0	0.1000	ND	0	NC	71-129	25	Х
m,p-Xylenes	0.0080	0.2000	ND	0	0.2000	ND	0	NC	70-131	25	Х
o-Xylene	0.0041	0.1000	ND	0	0.1000	ND	0	NC	71-133	25	Х



Chloride

Sample Duplicate Recovery

Project Name: 14" Vac to Jal - Legacy



Work Order #: 337272

Lab Batch #: 764860

Project ID: 2009-092.

Date Prepared: 07/08/2009

Analyst: LATCOR

Date Analyzed: 07/08/2009 QC- Sample ID: 337428-001 D

Anions by EPA 300

Analyte

Batch #:

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY							
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag			
127	141	10	20				

Lab Batch #: 764871

Date Analyzed: 07/07/2009

Date Prepared: 07/07/2009

Analyst: WRU

QC- Sample ID: 337179-001 D

Batch #:

Matrix: Water

Reporting Unit

Reporting Units: mg/L	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY						
TDS by SM2540C	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag			
Analyte		[B]	1					
Total dissolved solids	19700	19800	1	30				

Xenco Laboratories The Environmental Lab of Toxas	12600 West I-20 East	STODY RECORD AND ANALYSIS REQUEST Phone: 432-563-1800
Project Manager: CAMILE Ru Company Name BASIN SAUKO	Odossa, Texas 79765 YAATT WMENTAL	Project #: 2007 - 097
Company Address 200 PLAINS		Project Loc: CFA CO, NM POS: DAH - J. HENRY
Tetephone No: 575-441-224 Sampler Signature Hours only [itab use only)	Li Fax No:	Report Format:
ORDER #: (Mano Berry Market Book Bulling Bulling Book Bulling Bulling Book Bulling	Time Sampled Ti	OND-ENRY WHEN TO BACKS ON - Commoners personalised ON - Commoners personalised FIRST TX 1005 FIRST TX 1005 COMMON (C. E.O. Albahar) Anders (C. E.O. Albahar) SER ISST CEC RESIST A Ag Ba Ca Cr Pe trg Sa VOSAGES SERVICES ON FIRST TX 1005 FIRST TX 1005 Anders (C. E.O. Albahar) ON FIRST TX 1005 FIRST TX 1005 FIRST TX 1005 FIRST TX 1005 FIRST TX 1005 FIRST TX 1005 Albahar TX 1005 FIRST TX 1005
mw-1	7/14 1045 4X X	GW X X X
1.45 1.46 1.46 1.46 1.46 1.46 1.46 1.46		<i>f</i> ₁ <i>a</i>
Special instructions:		Laboratory Comments: 5- 1011/1-101/1550 ws. SampleContinens planed
Regrauster Diff Tone Rec	cerved by:	Laboratory Comments: 7
Relinquished by Oale Yuma Rec	Chidvalor on	

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In Basim / Plauns Client^{*} mm109 10.15 Date/ Time: 337272 Lab ID # : ANNA Initials Sample Receipt Checklist Client Initials #1 Temperature of container/ cooler? < Yes No #2 - Shipping container in good condition? No Custody Seals intact on shipping container/cooler? 'Yés No Not Present Custody Seals intact on sample bottles/containers Yes No Not Present -No Chain of Custody present? . (Yes) #6 Sample instructions complete of Chain of Custody? Yes No Chain of Custody signed when relinquished/ received? ,No Yes. #8 -Chain of Custody agrees with sample label(s)? No. ID written on Cont./ Lld #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 (Yes) (Yes #13 Samples properly preserved? ·No See Below #14 'Sample bottles intact? · No #15 Preservations documented on Chain of Custody? (Yes 'No #16-'Containers documented on Chain of Custody? 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 (Not Applicable) #19 Subcontract of sample(s)? ·Yes No #20 VOC samples have zero headspace? No Not Applicable Variance Documentation Contacted by: Contact: 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 Section America

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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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: Work Order Number: 349366

2009-092

Report Date: 23-OCT-09 Date Received: 10/22/2009

Sample receipt non conformances and Comments:

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-778519 BTEX-MTBE EPA 8021B

None



Certificate of Analys Summary 349366

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Project Location: Lea County, NM

Contact: Jason Henry

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	
	Lab Id:	349366-001			_		
Analysis Requested	Field Id:	MW-1					
Analysis Requesteu	Depth:						
	Matrix:	WATER	-				,
·	Sampled:	Oct-21-09 10:30			•		
BTEX by EPA 8021	Extracted:	Oct-22-09 14:00					
·	Analyzed:	Oct-22-09 14:46					
	Units/RL:	mg/L RL					
Benzene		0.0125 0.0010					
Toluene		0.0049 0.0020					
Ethylbenzene		ND 0.0010		, , , , , , , , , , , , , , , , , , , ,			
m,p-Xylenes		ND 0.0020					
o-Xylene		ND 0.0010					
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

'ork Orders: 349366,

Project ID: 2009-092

Lab Batch #: 778519

Sample: 541341-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 10/22/09 13:21	st	RROGATE R	ECOVERY :	STUDY	
ВТІ	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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	SU	RROGATE R	ECOVERY	STUDY	
ВТІ	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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:

Matrix: Water

Units: mg/L	Date Analyzed: 10/22/09 14:25	SU	RROGATE R	ECOVERY	STUDY	
ВТЕ	X 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	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]	,	
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	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes				[D]		
1,4-Dıfluorobenzene		0.0296	0.0300	99	80-120	
4-Bromofluorobenzene		0.0316	0.0300	105	80-120	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders: 349366,

Project ID: 2009-092

Lab Batch #: 778519

Sample: 349366-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 10/22/09 23:56	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021	Amount Found [A]	True Amount (B)	Recovery %R	Control Limits %R	Flags
Analytes	, ,		[D]		
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	-

Surrogate Recovery [D] = 100 * A / B

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

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 349366

Analyst: ASA Date Prepared: 10/22/2009

Project ID: 2009-092

Date Analyzed: 10/22/2009

Lab Batch ID: 778519 **Sample:** 541341-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L		BLAN	K/BLANK	SPIKE / I	BLANK S	PIKE DUPI	LICATE I	RECOVI	ERY STUD	Y	
BTEX by EPA 8021	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		. [B]	[C]	[D]	[E]	Result [F]	[G]				
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 - MS / 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 #:

Matrix: Water

Date Analyzed: 10/22/2009

Date Prepared: 10/22/2009

Analyst: ASA

Reporting Units: mg/L		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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	

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12

ame Basin Environmental S ddross: P. O. Box 301 Developer Lovington, NM 68260 vo: (575)605-7210 mature	iervice T	echnol	logles, LLC			<u>.</u>							Proje F	ct Na 'rojec					to.	Jai	- Le	gac	ý_		
ddress: P.O. Box 301 Ip: Lovington, NM 88260 Vo: (575)505-7210	iervice T	echnol	logles, LLC			:					٠.		F	rojec	:t #:	200	9-092	2							
ddress: P.O. Box 301 Ip: Lovington, NM 88260 Vo: (575)505-7210				, 4,																					
ip: Lovington, NM 88260	-		,					5		. `			Dr.	: lant l	•		Coun		734						
Vo: (575)505-7210	, ```							·					-10		•	•									
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FIELD CODE	Beginn	Ending	Date S	Time S	Feed Filter	ΞÌ	S E	\$ p	HQ.	Na,S,O,	Other (5	#G- #6	٤	1. Hd1	Cetions (C	Antons (C	Merials. As	Votestages	Seminotal	BIE	SC.	S CA	1		RUSH TAT (P.
MW-1			³ 10/21/09	1030		1	X :	X	I		[.]	Wate	r.				1	3		X			1	T	Ŀ
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	FIELD CODE MW-1	FIELD CODE MAN-1	FIELD CODE SET THE STATE OF THE	FIELD CODE Upday Solution William Solution Solut	FIELD CODE Beginning Depth Hamilton Day 10321/09 1030	FIETO CODE Beginning Depth 1030 1030 1030 1030 1030 1030 1030 103	Fierro Company (1994) WW-1 Line Stampled (1994) Find Filterod Total 9, of Container	FIELD CODE WM-1 FIELD CODE WM-1 FIELD CODE WM-1 FIELD CODE WM-1 FIELD CODE FIELD	FIELD CODE Baginning Depth Fielding	FIETO CODE WM: 1 Total of Contines 1 With 10 10 10 10 10 10 10 10 10 10 10 10 10	FIETD COOF Purity Pu	FIELD CODE WW.1 10,054,17 10,0	## Part Part	Pier (Sample Sa	Einding Dopth Boginning Dopth Ending Dopth Figure Sampled The Samp	FIELD COOR WANT 18 1 STORY 19 19 19 19 19 19 19 19 19 19 19 19 19	FIELD CODE FIELD	FIELD CODE FIELD CODE FIELD CODE FIELD CODE MWW-1 MW-1 MW-1 MWW-1 MW-1 MWW-1	Preservation \$ / of Contamers Main (1970) Preservation \$ / of Conta	Preservation 8 of Continuers Matrix In the O durining of Continuers In the Committee Standard In the Standard	Preservation \$ 7 of contamers Math. St	Preservation 8 / of contamers Matrix Compared No. 1	FIELD CODE FIELD CODE MWW-1 MW-1	Freservation 5 of Contamers Mathy Preservation 5 o	FIELD CODE High and the search of the searc

-12-53

Environmental Lab of Texas

	V	ariance/ Corrective Action Rep	on- Sampl	e Log-Ir	1	
Client	Plains /	Basin				
Date/ Time:	10-22-0	9 60830				
Lab ID#:	3493	366				
Initials:	JMF					
		Sample Receipt	Checklist		,	Client Initials
#1 Tempera	iture of container/	noolor?	Yes	No	4.6 °C	Silent initials
	container in good		Yes:	No	CA	
		pping container/ cooler?	Yes	No	Not Presen("A)	
		nple bottles/ container? / label	(Yes)	No	Not Present	
	Custody present?	Tiple bothesi container 17 12 (2)	₹@\$	No	HOLFICSON	
		ete of Chain of Custody?	(Yes)	No	 	
		hen relinquished/ received?	Yes	No		
		ith sample label(s)?	(Yes)	- No	ID written on Cont / Lid	
	er label(s) legible a		Yes	No	Not Applicable	
		agree with Chain of Custody?	Yes5	No	140t Applicable	
	ers supplied by EL		(Viso)	No		
	s in proper contain		Eves 5	- No	See Below	
	s properly preserve		CYEST	No	See Below	
	bottles intact?	sur .	RYes >	No	See Below	
		d on Chain of Custody?	TYEST.	No-		
		n Chain of Custody?	(Yes	No	 	
		for indicated test(s)?	(Yes)	No	See Below	
		n sufficient hold time?	(Yes)	, No	See Below	
	tract of sample(s)		Yes	No	(Not Applicable	
	amples have zero h		(Yes)	· No	Not Applicable	
1#20 VOC 30	inpica nave zero i	seadopaco;	المرتبي الم		1 Not reppired to	
		Variance Docui	nentation			
Contact:		Contacted by.			Date/ Time:	•
6	-					
Regarding:						
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Check all tha	at Apply:	See attached e-mail/ fax Client understands and wou	ld like to pro-	need with	analysis	
	ä	Cooling process had begun				

Page 12 of 12

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 (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-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

Page 4 of 12 Final Ver. 1.000



Certificate of Analys Summary 356646 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy

Contact: Jason Henry

Project Id: 2009-092

Project Location: Lea County, NM

Date Received in Lab: Wed Dec-23-09 08:17 am

Report Date: 30-DEC-09

							Project Manager:	Brent Barron, II	
	Lab Id:	356646-0	01	356646-0	02 .				
Analysis Pagyastad	Field Id:	SB-4 GV	N	SB-5 GV	v				
Analysis Requested	Depth:								
	Matrix:	WATE	₹.	WATER	t				
	Sampled:	Dec-22-09	11:15	Dec-22-09 1	2:30				
Inorganic Anions In Water by E300	Extracted:								
•	Analyzed:	Dec-23-09	10:08	Dec-23-09 1	0:08				
	Units/RL:	mg/L	RL	mg/L	RL				
Chloride		8580	250	9920	250	-			
TDS by SM2540C	Extracted:								
	Analyzed:	Dec-28-09	14:40	Dec-28-09 1	4.40				
	Units/RL:	mg/L	RL	mg/L	RL				
Total dissolved solids		15700	5.00	18200	5.00	•			

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, II Odessa Laboratory Manager

Final Ver. 1.000



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to 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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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/I

Reporting Units: mg/L	Batch #:	BLANK/B	BLANK SPI	KE REC	OVERY	STUDY
Inorganic Anions In Water by E300	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags
Analytes	[A]	[B]	Result [C]	%R [D]	%R	
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

Date Prepared: 12/28/2009

Project ID: 2009-092

Date Analyzed: 12/28/2009

Lab Batch ID: 787536

Sample: 787536-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
TDS by SM2540C	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]					
Total dissolved solids	ND	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 **QC- Sample ID:** 356608-001 S

Project ID: 2009-092

Date Prepared: 12/23/2009 Analyst: LATCOR

Batch #:

Matrix: Water

Reporting Units: mg/L	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	133	100	244	111	90-110	х					

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	DUPLIC	ATE REC	OVERY
Inorganic Anions In Water by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte	(,	[B]			
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 SAMPLE DUPLICATE RECOVERY										
TDS by SM2540C	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag							
Analyte		[B]										
Total dissolved solids	15700	16300	4	30								

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: <u>Ct</u>	IR Staniey			PAGE UT O	F UT										_		Proj	ect !	Name	: 14	4" V	ac 1	to J	<u>al L</u>	.eg	<u>acy</u>		—			
	Company Name Ba	sin Environmental Ser	vice Te	chnol	ogles, LLC														Pro	ject f	t: <u>20</u>	009-	092	<u> </u>								
	Company Address: P.	O. Box 301				· .												Pr	ojec	t Loc	:: <u>Le</u>	a Co	ount	y, Ni	M							
	City/State/Zip: Lo	vington, NM 88260														_				PO é	: <u>P/</u>	4A -	J. H	enry	,							
	Telephone No: 15	05) 441-2244		,		Fax No	:	(505)	396-	-142	9						Rep	ort F	om	nat:	X	Ste	ında	rd .			TRF	RP	-	_ \	IPDES	s
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AB # (lab use only)			Jeginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	otal #. of Containers		ć		70*	¥	Na ₂ S ₂ O ₃	Other (Specific)	DW - Drinking Water St - Study	GW - Groundwater S-solvsoil	on-Potable specify	415.1 BOIDM	Cators (Ca. Mg. Na. K)	Anions (Cl. SO4, Athalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg	bles	Semivolatiles	BTEX 80218/5030 or BTEX 8280		N.O.R.M.	PAH 8270		RUSH TAT (Pre-Schedule)	Standard TAT
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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

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t Checklist			
		Cilen	rt initials
(Yes)	No		
		(Not Present)	
	No		
	No		
		ID written on Cont./ Lid	
CYES			
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Final Ver 1.000

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, Il

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





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:

Sample receipt Non Conformances and Comments per Sample:

Analytical Non Conformances and Comments:

Batch: LBA-799583 BTEX by EPA 8021

None

Final Ver. 1.000



Certificate of Analys Summary 366350 PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Project Location: Lea County, NM

Contact: Jason Henry

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	
	Lab Id:	366350-001				
Analysis Requested	Field 1d:	MW-1				
Analysis Requesieu	Depth:			•		
	Matrix:	WATER				
	Sampled:	Mar-11-10 09:45				
BTEX by EPA 8021	Extracted:	Mar-23-10 08:00				
	Analyzed:	Mar-23-10 11:56				
	Units/RL:	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.

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

Brent Barron, II Odessa Laboratory Manager

Final Ver. 1.000



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to 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	(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

'ork Orders: 366350,

Project ID: 2009-092

Lab Batch #: 799583

Sample: 558913-1-BKS / BKS

Matrix: Water Batch:

Units: mg/L Date Analyzed: 03/23/10 10:04	SU	RROGATE RI	ECOVERY :	STUDY	
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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											
ВТІ	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
	Analytes			{D}									
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:

Matrix: Water

Units: mg/L	Date Analyzed: 03/23/10 11:34	SU	RROGATE RI	ECOVERY S	STUDY	
ВТЕ	EX by EPA 8021	Amount Found {A}	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	,		[D]	ĺ	
1,4-Difluorobenzene		0.0240	0.0300	80	80-120	
4-Bromofluorobenzene		0.0308	. 0.03,00	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											
вті	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
	Analytes			[D]									
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	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021 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	0.0277	0.0300	92	80-120	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits, data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution

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,

Project ID: 2009-092

Lab Batch #: 799583

Sample: 366350-001 SD / MSD

Matrix: Water

Batch: 1

Units: mg/L	Date Analyzed: 03/23/10 20:33	SU	RROGATE RI	ECOVERY S	STUDY	
ВТЕ	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
•	Analytes			[D]		
1,4-Difluorobenzene		0.0270	0 0300	90	80-120	
4-Bromofluorobenzene		0.0282	0.0300	94	80-120	

Surrogate Recovery [D] = 100 * A / B

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

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution







Project Name: 14 Inch Vac to Jal Legacy

Work Order #: 366350

Analyst: ASA

Lab Batch ID: 799583

Date Prepared: 03/23/2010

Project ID: 2009-092

Date Analyzed: 03/23/2010

Sample: 558913-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L		BLAN	K/BLANK S	SPIKE / H	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUD	Y	
BTEX by EPA 8021	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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 - MS / 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 #:

Matrix: Water

Date Analyzed: 03/23/2010

Date Prepared: 03/23/2010

Analyst: ASA

· A

O Analyst: AS

Reporting Units: mg/L		M	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike Added	Duplicate Spiked Sample	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%K [G]	70	70K	%KPD	
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	

2age 11 of 12

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:	Camille Brya	int			PAGE 01 C	F 01											Pr	ojec	t Na	me:	14	nch	Va	c to	<u>Ja</u>	I Le	gac	У				_
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-	Company Address:	P.O. Box 381	<u> </u>				·										•		Proj	ect L	.oc:	Lea	Cou	nty,	NM								,-
•	City/State/Zip:	Lovington, N	M 88260											•			•			P) #: ₋	PAA	- J.	Hen	ry_								_
	Telephone No:	(575)605-721	0				Fax No:		<u>(50</u>	5) 3	96-1	129					. F	Repo	t Fo	rmat	:	Χ,	Stan	dard		[] TR	₹RP		ı	NPDE	ES	
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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Paris Cal Plains	port oump.	g	•
Client: Bosin Env. / Plgins			
Date/ Time: 3.19.10 16'.47			
ab ID#: 366350			
Initials: \hbar L			
Sample Receipt	Checklist		
			Client Initials
Temperature of container/ cooler?	Yes	No	3.6 °c
\$2 Shipping container in good condition?	Yes	No	
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	
Sample instructions complete of Chain of Custody?	Yes	<u>No</u>	
The 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	<u>No</u>	
#11 Containers supplied by ELOT?	(Yes)	No	
#12 Samples in proper container/ bottle?	Ŷès	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)?	(Pes	No	See Below
#18 All samples received within sufficient hold time?	(Fee)	No	See Below
#19 Subcontract of sample(s)?	Yes	No	Not Applicable
#20 VOC samples have zero headspace?	(Yés)	No	Not Applicable
Contact: Contacted by: Regarding:	mentation		Date/ Time:
Corrective Action Taken:			
Check all that Apply: See attached e-mail/ fax Client understands and wor Cooling process had begun	•		•

Analytical Report 375611

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy SRS # 2009-92

09-JUN-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)



09-JUN-10

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

Reference: XENCO Report No: 375611

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 375611. 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. 375611 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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Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America



Sample Cross Reference 375611



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample IdMatrixDate CollectedSample DepthLab Sample IdMW-1WJun-04-10 09:45375611-001





Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy

Project ID:

SRS # 2009-92

Report Date: 09-JUN-10

Work Order Number: 375611

Date Received: 06/04/2010

Sample receipt non conformances and Comments:

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-809848 BTEX by EPA 8021

SW8021BM

Batch 809848, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is

suspected; data not confirmed by re-analysis

Samples affected are: 375611-001.

Final Ver. 1.000



Certificate of Analys Summary 375611 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy

Project Id: SRS # 2009-92 Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Fri Jun-04-10 02:20 pm

Report Date: 09-JUN-10

oject Education: Dea County, NW				Project Manager:	Brent Barron, II	
	Lab Id:	375611-001				
Analysis Requested	Field Id:	MW-1				
Analysis Requested	Depth:					
	Matrix:	WATER			:	
	Sampled:	Jun-04-10 09:45				
BTEX by EPA 8021	Extracted:	Jun-08-10 16:00				
	Analyzed:	Jun-08-10 22:23				
	Units/RL:	mg/L RL	11:			
Benzene		0.1407 0.0010				
Toluene		0.0637 0.0020			,	
Ethylbenzene		0.0047 0.0010				
m,p-Xylenes .		0.0041 0.0020		 		
o-Xylene		0.0026 0.0010				
Xylenes, Total		0.0067 0.0010				
Total BTEX		0.2158 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 KENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented Our liability is limited to the amount involved for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Brent Barron, II Odessa Laboratory Manager

Final Ver. 1.000



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to 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	(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

/ork Orders: 375611,

Project ID: SRS # 2009-92

Lab Batch #: 809848

Sample: 565236-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 06/08/10 18:17	SURROGATE RECOVERY STUDY											
ВТІ	BTEX by EPA 8021		True Amount [B]	Recovery %R	Control Limits %R	Flags							
	Analytes	[A]	,-,	[D]									
1,4-Difluorobenzene		0.0302	0.0300	101	80-120								
4-Bromofluorobenzene		0.0294 ·	0.0300	98	80-120								

Lab Batch #: 809848

Sample: 565236-1-BSD / BSD

Batch: 1

Matrix: Water

Units: mg/L	Date Analyzed: 06/08/10 18:39	SURROGATE RECOVERY STUDY												
ВТІ	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
	Analytes			[D]										
1,4-Difluorobenzene		0.0304	0.0300	101	80-120									
4-Bromofluorobenzene		0.0300	0.0300	100	80-120									

Lab Batch #: 809848

Sample: 565236-1-BLK / BLK

Batch: 1

Matrix: Water

Units: mg/L	Date Analyzed: 06/08/10 19:47	SURROGATE RECOVERY STUDY												
BTEX by EPA 8021 Analytes		Amount Found [A]	True Amount [B]	Recovery %R D	Control Limits %R	Flags								
	Analytes			(2)										
1,4-Difluorobenzene		0.0241	0.0300	80	80-120									
4-Bromofluorobenzene		0.0295	0.0300	98	80-120									

Lab Batch #: 809848

Sample: 375611-001 / SMP

Batch: 1

Matrix: Water

Units: mg/L	Date Analyzed: 06/08/10 22:23	SURROGATE RECOVERY STUDY												
ВТІ	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
	Analytes			[D] ·										
1,4-Dıfluorobenzene		0.0277	0.0300	92	80-120	t								
4-Bromofluorobenzene		0.0238	0.0300	79	80-120	*								

Lab Batch #: 809848

Sample: 375188-002 S / MS

Batch: 1

Matrix: Water

Units: mg/L Date Analyzed: 06/09/10 04:23	SURROGATE RECOVERY STUDY												
BTEX by EPA 8021 Analytes	Amount Found . [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
1,4-Difluorobenzene	0.0268	0.0300	89	80-120									
4-Bromofluorobenzene	0.0286	0.0300	95	80-120									

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders: 375611,

Project ID: SRS # 2009-92

Lab Batch #: 809848

Sample: 375188-002 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 06/09/10 04:45	SURROGATE RECOVERY STUDY											
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
- Analytes			[D]									
1,4-Dıfluorobenzene	0.0280	0.0300	93	80-120								
4-Bromofluorobenzene	0.0281	0.0300	94	80-120								

Surrogate Recovery [D] = 100 * A / B

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

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 375611

Analyst: ASA

Sample: 565236-1-BKS

Lab Batch ID: 809848

Date Prepared: 06/08/2010

Project ID: SRS # 2009-92

Date Analyzed: 06/08/2010 Matrix: Water

Batch #: 1

Units: mg/L		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY														
BTEX by EPA 8021	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag					
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]									
Benzene	ND	0.1000	0.0959	96	0.1	0.1012	101	5	70-125	25						
Toluene	ND	0.1000	0.0961	96	0.1	0.1019	102	6	70-125	25						
Ethylbenzene	ND	0.1000	0.1011	101	0.1	0.1066	107	5	71-129	25						
m,p-Xylenes	ND	0.2000	0.2021	101	0.2	0.2135	107	5	70-131	25						
o-Xylene	ND	0.1000	0.0998	100	0.1	0.1061	106	6	71-133	25						

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



Form 3 - MS / MSD Recoveries

Project Name: 14" Vac to Jal Legacy



Work Order #: 375611

Project ID: SRS # 2009-92

Lab Batch ID: 809848

QC- Sample ID: 375188-002 S

Batch #:

Matrix: Water

Date Analyzed: 06/09/2010

Date Prepared: 06/08/2010

Analyst: ASA

Reporting Units: mg/L		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY														
BTEX by EPA 8021	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag					
Analytes	[A]	[B]	[6]	[D]	(E)	Result (1)	[G]	/*	/01	701012						
Benzene	0.0013	0.1000	0.0848	84	0.1000	0.0873	86	3	70-125	25						
Toluene	ND	0.1000	0.0845	85	0.1000	0.0882	88	4	70-125	25	i					
Ethylbenzene	ND	0.1000	0.0869	87	0.1000	0.0908	91	4	71-129	25						
m,p-Xylenes	ND	0.2000	0.1727	86	0.2000	0.1773	89	3	70-131	25						
o-Xylene	ND	0.1000	0.0845	85	0.1000	0.0886	89	5	71-133	25						

Page 1/

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:	Camille Bryan	nt														_	Pro	ojec	Nar	ne:_	4" \	/ac	to J	<u>al L</u>	<u>_eg</u> ɛ	acy					
	Company Name	Basin Enviro	nmental Co	nsultin	g, LLC												_		Pr	ojec	t#:_5	SRS	# 2 0	09-9	32_							
	Company Address:	P.O. Box 381																F	Proje	ect L	oc: L	ea C	oun	ty, N	M							
	City/State/Zip:	Lovington, Ni	M 88260																	PC	#: <u>F</u>	'AA-	J. He	enry								
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AB # (lab use only)		LD CODE		Beginning Depth	Ending Depth	Date	Time Sampled	ield Filtered	fotal # of Containers	<u>8</u>	HNO	잗	1,50 1,50 1,50 1,50 1,50 1,50 1,50 1,50	Na ₂ S ₂ O ₃	None	Other (Specify)	DW-Drinking Water	ow - Groundwater NP-Non-Potable S	TPH:	표	Cations (Ca, Mg, Na, K)	SAR / ESP / CEC	etaks	Votatiles	Semivolatiles	Ē	Ş	N.O.R.M.			RUSH TAT (Pre-Schedule)	Standard TAT 4 DAY
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XENCO Laboratories

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

Document Title: Sample Receipt Checklist

Document No : SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

	Preiogin / N	oncontormance Rep	port - Sampi	a Log-III		
client: Basin (Env. / Pla	ins				
Date/Time: U-U-10					•	
Lab ID#:	75611					
Initials:	<u>1L</u>	***************************************				
		Sample Receipt Ch	ecklist			
1. Samples on ice?			Blue	Water	No	
2. Shipping container in	good condition?		Yes	No	None	
3. Custody seals intact of	on shipping containe	r (cooler) and bottles	Yes	No	N/A	
4. Chain of Custody pres	sent?		Yes	No		
5. Sample instructions c	omplete on chain of	custody?	Yes	No		
6. Any missing / extra sa	mples?		Yes	No		
7. Chain of custody sign	ed when relinquishe	d / received?	Yes	No		
8. Chain of custody agre	es with sample labe	l(s)?	(TêS)	No		
9. Container labels legib	le and intact?		Yes	No		
10. Sample matrix / prop	erties agree with ch	ain of custody?	Yes	No		
11. Samples in proper co	ontainer / bottle?		Yes	No		
12. Samples property pro	eserved?		(Yes)	No	N/A	
13. Sample container int	act?		Yes	No		
14. Sufficient sample am	ount for indicated to	est(s)?	(Y65)	No		
15. All samples received	within sufficient ho	ld time?	Yes	No		
16. Subcontract of samp	ole(s)?	****	Yes	No	NA	
17. VOC sample have ze	ro head space?		Yes	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No	· .	Cooler 5 No.	
lbs 5.1 °C	lbs	°C lbs	°C lbs	°C	lbs	°C
	N	onconformance Docu	umentation			
Contact:	Contacte	ed by:		Date/Time:		
Regarding:						
· <u> </u>						
Corrective Action Taker	1:					

Final Ver. 1.000

☐Initial and Backup Temperature confirm out of temperature conditions

Check all that apply:
© Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.

☐ Client understands and would like to proceed with analysis

Analytical Report 391428

for PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy

2009-092

01-OCT-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

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

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240), South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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





01-OCT-10

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

Reference: XENCO Report No: 391428

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 391428. 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. 391428 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 391428



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample IdMatrixDate CollectedSample DepthLab Sample IdMW-1WSep-23-10 09:30391428-001

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy



Project ID:

2009-092

Work Order Number: 391428

Report Date: 01-OCT-10

Date Received: 09/27/2010

Sample receipt non conformances and Comments:

Sample receipt Non Conformances and Comments per Sample:

None



Certificate of Analys Summary 391428 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 Sep-27-10 03:22 pm

Report Date: 01-OCT-10

				Project Manager:	Brent Barron, II
	Lab Id:	391428-001			
Anglusis Paguastad	Field Id:	MW-1			
Analysis Requested	Depth:				
	Matrix:	WATER			
·	Sampled:	Sep-23-10 09:30			
BTEX by EPA 8021	Extracted:	Sep-29-10 15:40			
	Analyzed:	Sep-30-10 05:01			
]	Units/RL:	mg/L RL	•]
Benzene		0.0514 0.0010			
Toluene '		0.0278 0.0020			
Ethylbenzene		0.0022 0.0010			
m,p-Xylenes		0.0028 0.0020			
o-Xylene		0.0019 0.0010			
Xylenes, Total		0.0047 0.0010			
Total BTEX		0.0861 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

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Final 1.000

Brent Barron, II Odessa Laboratory Manager



Flagging Criteria

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

 The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL Below Reporting Limit.
- **RL** Reporting Limit
- MDL Method Detection Limit
- **PQL** Practical Quantitation Limit
- * Outside XENCO's scope of NELAC Accreditation.

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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

ork Orders: 391428.

Project ID: 2009-092

Lab Batch #: 825380

Sample: 574732-1-BKS / BKS

Matrix: Water Batch: 1

Units: mg/L Date Analyzed: 09/30/10 03:06	SU	RROGATE RI	ECOVERY :	STUDY	
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0334	0.0300	111	80-120	
4-Bromofluorobenzene	0 0345	0.0300	115	80-120	

Lab Batch #: 825380

Sample: 574732-1-BSD / BSD

Batch: 1

Matrix: Water

Units: mg/L	Date Analyzed: 09/30/10 03:29	SU	9 SURROGATE RECOVERY STU									
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
	Analytes			[D]								
1,4-Difluorobenzene		0.0332	0.0300	111	80-120							
4-Bromofluorobenzene		0.0354	0.0300	118	80-120							

Lab Batch #: 825380

Sample: 574732-1-BLK / BLK

Units: mg/L Date Analyzed: 09/30/10 04:38	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	. 99	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 825380

Sample: 391428-001 / SMP

Batch:

Matrix: Water

Units: mg/L Date Analyzed: 09/30/10 05:01	SU	SURROGATE RECOVERY STUDY										
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
Analytes			[D]									
I,4-Difluorobenzene	0.0314	0.0300	105	80-120								
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	,							

Lab Batch #: 825380

Sample: 391428-001 S/MS

Batch: 1

Matrix: Water

Units: mg/L	Date Analyzed: 09/30/10 05:24	SUI	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1,4-Difluorobenzene		0.0323	0.0300	108	80-120-	
4-Bromofluorobenzene		0.0317	0.0300	106	80-120	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders: 391428,

Project ID: 2009-092

Lab Batch #: 825380

Sample: 391428-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 09/30/10 05:47	SURROGATE RECOVERY STUDY											
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
Analytes	,	'.'	[D]									
1,4-Difluorobenzene	0.0322	0.0300	107	80-120								
4-Bromofluorobenzene	0.0321	0.0300	107	80-120								

Surrogate Recovery [D] = 100 * A / B

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

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 391428

Lab Batch ID: 825380

Analyst: ASA Date Prepared: 09/29/2010

Project ID: 2009-092 **Date Analyzed:** 09/30/2010

Sample: 574732-1-BKS Batch #: 1 Matrix: Water

Units: mg/L BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Benzene	ND .	0.1000	0.0924	92	0.1	0.0907	91	2	70-125	25	
Toluene	ND	0.1000	0.0915	92	0.1	0.0895	90	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0927	93	0.1	0.0914	91	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.1817	91	0.2	0.1796	90	1	70-131	25	
o-Xylene	ND	0.1000	0.0938	94	0.1	0.0927	93	1	71-133	25	

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



Form 3 - MS / MSD Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 391428

Project ID: 2009-092

Lab Batch ID: 825380

QC- Sample ID: 391428-001 S

Batch #:

Matrix: Water

Date Analyzed: 09/30/2010

Date Prepared: 09/29/2010

Analyst: ASA

Demanting II-ites mod

Reporting Units: mg/L	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
BTEX by EPA 8021	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	%R	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Analytes	[A]	[B]		[D]	[E]		[G]							
Benzene	0.0514	0.1000	0.1409	90	0.1000	0.1407	89	0	70-125	25				
Toluene	0.0278	0.1000	0.1173	90	0.1000	0.1167	89	1	70-125	25				
Ethylbenzene	0.0022	0.1000	0.0906	88	0.1000	0.0896	87	1	71-129	25				
m,p-Xylenes	0.0028	0.2000	0.1724	85	0.2000	0.1697	83	2	70-131	25				
o-Xylene	0.0019	0.1000	0.0905	89	0.1000	0.0882	86	3	71-133	25				

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East

Phone: 432-563-1800 Fax: 432-563-1713

	Project Manager	Camille Bryant														P	roje	ct Na	me:	14"	Vac	to.	lal I	Leg	всу	,				
	Company Name	Basin Environmental Cor	neultin	g, LLC											_		F	rojec	t #:]	2009	-09	2								
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	City/State/Zip:	Lovington, NM 88260				·									_			P) #: <u>[</u>	**	Ja:	on F	lenr	<u> </u>						
	Telephone No:	(5(5) 605-72;10			Λ	Fax No:		(575)	396	1421					_	Repo	nt Fo	onmai	. [x s	tand	ard		0	TR	RP		□ N	₽DE:	S
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LAB & (lets use ordy)	FIE	LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total & of Containers	3	HNO,	HG V04	NaOH	Na-S,O.	None	Other (Specify)	DW-Drinking Water SL-Studge OM = Groundwater S-SOUSOM	TPH. 418.1 6016M 8015	D1 XT 8001 XT	Cations (Ca. Mg, Na, K)	Anione (Cl. SO4, Aladenty)	Mests As An Ra Col Co Ph Hn Sa	Voletiles	Serrivoletiles	BTEX 8021B/5030 G BTEX 8280	RCI	NORM	PAH 8270		RUSH TAT (Pre-Batechel) 24.	
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas louston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa

Document Titte Sample Receipt Checklist Document No SYS-SRC Revision/Date: No 01.5/27/2010

Page 1 of 1

Effective Date: 6/1/2010

Prelogin / Nonconformance Report - Sample Log-In

Client [.]	Basin Env. / Plains
Date/Time:	9.27.10 15:22
Lab ID#:	391428
Initials:	AE

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles.	(Yest)	No	N/A	
4. Chain of Custody present?	Tes	No		
5. Sample instructions complete on chain of custody?	Yas	No		
6. Any miseing / extra samples?	Yes	(No		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples property preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for Indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	NIA	
17. VOC sample have zero head space?	(Yes)	No	N/A	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 N	O	Cooler 5 No.	
ibs 4.1 °C ibs °C ibs	°C lbs	°c	lba	

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:	,
Regarding:			_
			_

Check all that apply:
Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3 1.s.1.

Cinitial and Backup Temperature confirm out of temperature conditions
Client understands and would like to proceed with analysis

Analytical Report 397215

for PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

14" Vac to Jal Legacy

2009-092

17-NOV-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

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

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North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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





17-NOV-10

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

Reference: XENCO Report No: 397215

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 397215. 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. 397215 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 397215



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id

MW-1

Matrix W **Date Collected** Nov-05-10 15:00 Sample Depth

Lab Sample Id

397215-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy



Project ID:

2009-092

Work Order Number: 397215

Report Date: 17-NOV-10

Date Received: 11/12/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None



Certificate of Analys Summary 397215

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: Fri Nov-12-10 04:20 pm

Report Date: 17-NOV-10

Project Manager: Brent Barron II

			 	rroject Manager:	Dient Darion, II	
	Lab Id:	397215-001				
Analysis Requested	Field Id:	MW-1				
<u> </u>	Depth:					
·	Matrix:	WATER				
	Sampled:	Nov-05-10 15:00				
BTEX by EPA 8021B	Extracted:	Nov-15-10 16:45				
	Analyzed:	Nov-16-10 11:10		•		
	Units/RL:	mg/L RL				
Benzene		0.2795 0.0010				
Toluene		0.1807 0.0020				
Ethylbenzene		0.0126 0.0010				
m_p-Xylenes		0.0114 0.0020				
o-Xylene		0.0049 0.0010				
Total Xylenes		0.0163 0.0010				
Total BTEX		0.4891 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 hability 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
- MDL Method Detection Limit
- **POL** Practical Quantitation Limit
- * Outside XENCO's scope of NELAC Accreditation.

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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

Vork Orders: 397215,

Project ID: 2009-092

Lab Batch #: 832334

Sample: 578959-1-BKS / BKS

Matrix: Water Batch: 1

Units: mg/L Date Analyzed: 11/16/10 09:43	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes	1 1		[D]	,,,,				
1,4-Dıfluorobenzene	0.0344	0.0300	115	80-120				
4-Bromofluorobenzene	0.0313	0.0300	104	80-120				

Lab Batch #: 832334

Sample: 578959-1-BSD / BSD

Batch: Matrix: Water

Units: mg/L	Date Analyzed: 11/16/10 10:05	SURROGATE RECOVERY STUDY							
вте	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes				{D}					
1,4-Difluorobenzene		0.0323	0.0300	108	80-120				
4-Bromofluorobenzene		0.0353	0.0300	118	80-120				

Lab Batch #: 832334

Sample: 578959-1-BLK / BLK

Batch: 1

Matrix: Water

Units: mg/L Date Analyzed: 11/16/10 10:48	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
1,4-Difluorobenzene	0.0252	0.0300	84	80-120					
4-Bromofluorobenzene	0.0311	0.0300	104	80-120					

Lab Batch #: 832334

Sample: 397215-001 / SMP

Batch:

Matrix: Water

Units: mg/L Date Analyzed: 11/16/10 11:10		SURROGATE RECOVERY STUDY								
BTEX by EPA 8021E	Amou Foun [A]	1	Recovery %R	Control Limits %R	Flags					
Analytes			[D]							
I,4-Dıfluorobenzene	0.0265	0.0300	. 88	80-120						
4-Bromofluorobenzene	0.0250	0.0300	83	80-120						

Lab Batch #: 832334

Sample: 397215-001 S/MS

Batch: 1

Matrix: Water

Units: mg/L Date Analyzed: 11/16/10 14:46		SURROGATE RECOVERY STUDY							
ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene		0.0311	0.0300	104	80-120				
4-Bromofluorobenzene		0.0269	0.0300	90	80-120				

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders: 397215,

Project 1D: 2009-092

Lab Batch #: 832334

Sample: 397215-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY								
вте	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes			[D]					
1,4-Dıfluorobenzene		0.0296	0.0300	99	80-120				
4-Bromofluorobenzene		0.0279	0.0300	93	80-120				

Surrogate Recovery [D] = 100 * A / B

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

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 397215

Analyst: ASA

Project ID: 2009-092

Date Prepared: 11/15/2010

Date Analyzed: 11/16/2010

Matrix: Water

Lab Batch ID: 832334

Sample: 578959-1-BKS Batch #: 1

Units:	mg/L
--------	------

Units: mg/L		BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	· RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Benzene	NĐ	0.1000	0.0961	96	0.1	0.1026	103	7	70-125	25	
Toluene	ND	0.1000	0.0930	93	0.1	0.0996	100	7	70-125	25	
Ethylbenzene	ND	0.1000	0.0935	94	0.1	0.1008	101	8	71-129	25	
m_p-Xylenes	ND	0.2000	0.1896	95	0.2	0.2038	102	7	70-131	25	
o-Xylene	ND	0.1000	0.0924	92	0.1	0.0972	97	5	71-133	25 ·	

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



Form 3 - MS / MSD Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 397215

Project ID: 2009-092

Lab Batch ID: 832334

QC- Sample ID: 397215-001 S

Batch #:

Matrix: Water

Date Analyzed: 11/16/2010

Date Prepared: 11/15/2010

Reporting Units: mg/I

Analyst: ASA

Reporting Units: mg/L		N	IATRIX SPIK	E/MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY			
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result C	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes	[A]	[B]	[C]	[D]	[E]	Kesuit [F]	[G]	/0	/ U K	/UKI D		
Benzene	0.2795	0.1000	0.3749	95	0.1000	0.3882	109	3	70-125	25		
Toluene	0.1807	0.1000	0.2835	103	0.1000	0.2916	111	3	70-125	25		
Ethylbenzene	0.0126	0.1000	0.1002	88	0.1000	0.1015	89	1	71-129	25		
m_p-Xylenes	0.0114	0.2000	0.1834	86	0.2000	0.1834	86	0	70-131	25		
o-Xylene	0.0049	0.1000	0.0928	88	0.1000	0.0934	89	1	71-133	25		

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

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:	Ben Arguljo																Pro	ject l	lame	e: <u>14</u>	!" V	ac to	o Jai	l Le	gacy					
	Company Name	Basin Environme	ental Cor	nsulting	g, LLC														Pro	ect #	#: <u>20</u>	09-	092					·			
	Company Address:	P. O. Box 301																Р	rojec	t Loc	:: <u>Le</u>	a Co	unty	, NM						-	
•	City/State/Zip ⁻	Lovington, NM 8	8260																	PO#	t: <u>P</u> A	A - J	asor	n Her	ıry_						
	Telephone No:	575.396.2378					Fax No:		(575)	<u> 396-</u>	1429						Re	port	Form	at:	X	Sta	ndaro	ď] TR	(RP		□ v	NPDE	s
	Sampler Signature:	SACCI	an	معد		····	e-mail:		pm(<u> </u>	asir	<u>ien</u>	v.c	<u>om</u>				- ,					_ _		<u>بي</u>						_
(lab use	only)		7							•												TCLP:	Ana	alyze	T	7	Т			٦,	
ORDER	# 397215		<u>. </u>						_	Pr	eserv	atio	n & /	af Ca	ntain	ers	Mat	_	g	T	7	TAL:	- -	+	7	7			.	48, 72 hrs	
LAB # (lab use only)		LD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	lce	HNO ₃	HCI	H,SO ₄	Na,S,O,	None		DW = Drinking Water St = Studge GW = Groundwater S = Soil/Soli	NP Non-Potable Specify Othe	5	Cations (Ca. Mg. Na. K)	Anions (Cl. SO4. Alkalmty)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	STEX 80216/5030 or 8TEX 8260	RCI	NOR.M.	PAH 8270		RUSH TAT (Pre-Schedule) 24,	
		MW-1				11/5/2010	1500		3	X		X		$oldsymbol{\mathbb{L}}$		\Box	GV	v	$oxed{\Box}$	I			\Box	\Box	Х				\Box	I	Х
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Special	nstructions:																			Sa	mplé	Con	tainé	nmen ers Int	tact?		:	>		N	
Relinquis Relinquis	2 longy	1/2	Date 30 Date	11//	me 2/10 me /	Received by:									14/	Dat Dat	10	13	ime ime		istod istod imple by s	y sea y sea Han	ils on ils on id De iler/C	ner(s) n conta n cook elivere client f	iainer er(s) ed	?			x1(x)00000000000000000000000000000000000	2222	
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Page 11 of 12

Final 1.000



XENCO Laboratories

Attanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

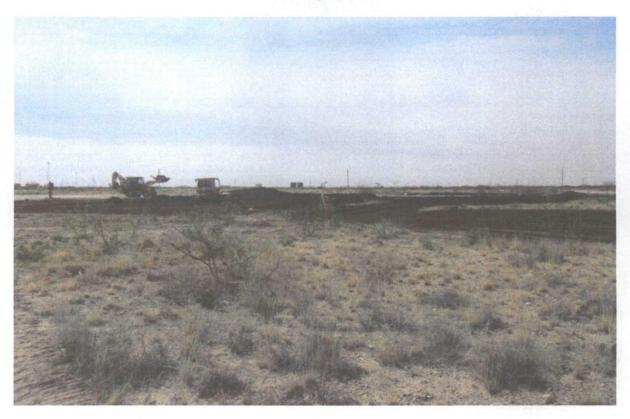
Plains.	Prelogin / N	lonco	nformance i	Report	- Sample	Log-In		
Client Prisite	evironmen	 	(M					
Date/Time: 11-12-1	0 16:20							
Lab ID#: 3973\								
Initials:								,
		Sa	mple Receipt	Checki	ist			
1. Samples on ice?					Blue	Water	No	
2. Shipping container i	n good condition?				(Yes)	No	None	
3. Custody seals intact	on shipping contain	er (coo	ler) and bottles?		Yes	No	(N/A)	27
4. Chain of Custody pr	esent?				Yes	No		
5. Sample instructions	complete on chain of	f custo	dy?		Yes	No		,
6. Any missing / extra	samples?				Yes	No		
7. Chain of custody sig	ned when relinquish	ed / red	ceived?		TES	No		
8. Chain of custody ag	rees with sample lab	el(s)?		Yes	No			
9. Container labels leg	ible and intact?			Yes	No			
10. Sample matrix / pro	perties agree with ch	hain of		Yes	No ·			
11. Samples in proper	container / bottle?			Yes	No			
12. Samples property	oreserved?				Yes	No	N/A	
13. Sample container i	ntact?				Yes	No		
14. Sufficient sample a	unount for indicated f	test(s)?	?		Yes	No	<u> </u>	
15. All samples receive	ed within sufficient h	old tim	e?		Yes	No		
16. Subcontract of san	nple(s)?				Yes	No	N/A	
17. VOC sample have :	zero head space?				Yes	No	N/A	<u> </u>
18. Cooler 1 No.	Cooler 2 No.		cooler 3 No.		Cooler 4 No).	Cooler 5 No	·
lbs 3.1	°C (bs	°င	lbs	ာင	lbs	°c	lbs	°c
Contact	NContact		onformance D	ocume	ntation	Date/Time:_		···
Regarding:								
Corrective Action Take	en:							
Check all that apply:	□ Cooling process h condition ac □ Initial and Backup	cceptal	de by NELAC 5.5	.8.3.1.a.1.	•	-	ature	

☐ Client understands and would like to proceed with analysis

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



Completion of Remediation Activities at the 14 Inch Vac to Jal Legacy Release Site



Completion of Remediation Activities at the 14 Inch Vac to Jal Legacy Release Site

Appendix D
Release Notification &
Corrective Action
(Form C-141, Initial)

District I 1625 N. French Dr., Hobbs, NM 88240 District II
1301 W. Grand Avenue, Artesia, NM 88210 District III

On Rio Brazos Road, Aztec, NM 87410 itrict IV 20 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 Form C-141
Revised October 10, 2003

APR 20 2008 Submit 2 Copies to appropriate
HOBBSOCD District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

						OPERA	ГOR	,		Initial Report Final Repo						
Name of Company Plains Pipeline, LP							Contact Jason Henry									
Address				over City, Tx 79	Telephone No. (575) 441-1099											
Facility Na	ne	14 - inch Va	c to Jal l	Legacy	Facility Type Pipeline											
Surface Ow	ner Legac	y Petroleum		Mineral C)wner				Lease N	lo.						
				LOCA	TIO	N OF RE	LEASE WELL		1#30·c	25.117	59.0	000				
Unit Letter	Section	Township	Feet from the		South Line	Feet from the		Vest Line	County							
F	Unit Letter Section Township Range Feet from the North/								U	Lea						
	I	·	. L	atitude N 32°	6' 10.7	" Longitud	e W 103° 7' 10	.3"								
				NAT	URE	OF REL										
Type of Rele		de Oil					Release 250 bb			Recovered (
Source of Re	lease 14	" Steel Pipelir	ie			04/09/2009	lour of Occurrence)	æ		Hour of Disc 19 10:00 a.n			i			
Was Immedi	ate Notice (If YES, To			······································							
<u> </u>			Yes L	No Not R	equired											
By Whom? Was a Water						Date and I	lour 04/09/200 olume Impacting to									
Wasa Water	course rea		Yes 🛭] No		11 123, **	Junic Impacting	uic wan	ACOUISC.							
If a Watercourse was Impacted, Describe Fully.* WATER 9 55																
•							WHIE	KAI	33							
Describe Car	ise of Probl	em and Reme	dial Actio	n Taken.*												
bbls/day bec	ause the line	is inactive ar	id was bei	Jal Line, a release ing purged at the 10 ppm and the gr	ime of	he release. T	he depth of the pi									
Describe Are	a Affected	and Cleanup	Action Tal	ken.* .												
The released	crude resul	ted in a surfac	e stain tha	at measured appro	ximatel	y 300' x 300'	. The impacted a	rea will	be remedia	ted per appli	cable ;	guidelin	es.			
regulations a public health should their or or the enviro	Il operators or the envi operations h nment. In a	are required to ronment. The nave failed to	o report as acceptane adequately OCD accep	e is true and comp nd/or file certain r ce of a C-141 report investigate and r otance of a C-141	release root by the remedian	otifications a le NMOCD m le contaminati	nd perform correct earked as "Final Ricon that pose a thr	ctive act teport" of reat to gr	ions for rel loes not rel round wate	eases which ieve the oper r, surface wa	may en ator of ter, hu	ndanger f liability man hea	y Y			
	\bigcap	41					OIL CON	SERV	ATION	DIVISIO	N					
Signature:	Lham	n Hon	nu				- W - T - W - D			•		•	ŀ			
Printed Name: Jason Henry ENV ENGR Approved by District Supervisor: Startley Schame									†							
Title: Remediation Coordinator							Approval Date: 04 21 09 Expiration Date: 06 22						े 9			
E-mail Addre	ess: jhenry	@paalp.com	Dhone	: (575) 441-1099		Conditions of Approval: DELINEATE TO CLEANTH. SUBMIT FINAL 6-14 BY 06122109.										
Date: C				. (3/3) 441-1099		<u> </u>	· · ·									

FGRL0912457808

1RP. 2162 (09.4)

Appendix E
Release Notification &
Corrective Action
(Form C-141, Final)

District !
1625 N. French Dr., Hobbs, NM 88240
District I!
1301 W. Grand Avenue, Artesia, NM 88210
District III
20 Rio Brazos Road, Aztec, NM 87410
strict 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 Form C-141 Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

₩¹ Reference # 1R-2162

						OPERAT	OR	Initia	al Report 🗵 Final Report					
Name of Com	ipany	Plains Pipe	line, LP		(Contact	Jason Henr	у						
Address				er City, TX 7932			No. (575) 441-1	099						
Facility Name	;	14 – inch V	ac to Jal	Legacy]	Facility Typ	e Pipeline							
Surface Owne	er COG	Operating l	LLC	Mineral C)wner			Lease	No.					
					TION	OF RE	LEASE							
Unit Letter F	Section 25	Township 258	Range 37E	Feet from the	North/	South Line	Feet from the	East/West Line	sst/West Line County Lea					
			L	atitude N 32°	5' 10. 7 ''	' Longitude	W 103° 7' 10.	3"						
	•			NAT	URE	OF REL			· ·					
Type of Release	· 	de Oil				Volume of	Release 250 bb	is Volume	Recovered 0 bbis					
Source of Relea	asc 14"	'Steel Pipelir	ie			Date and F 04/09/2009	our of Occurrenc		Hour of Discovery 09 10:00 a.m.					
Was Immediate	Notice G		Yes	No Not Ro	equired	If YES, To Larry Joh								
By Whom? Jas		y				Date and H	our 04/09/200	9 @ 14:20						
Was a Waterco	urse Reac		Yes ⊠	No	-	If YES, Vo	lume Impacting t	he Watercourse.						
of a Watercours	e was Imp	nacted, Descri	be Fully.*	,		<u></u>								
•														
•	•													
Describe Cause	of Proble	m and Remed	lial Action	Taken.*										
line is 0 bbls/da	ay becaus	e the line is i	nactive a	nd was being pu	rged at t	he time of tl		epth of the pipel	Throughput for the subject ine at the release point is					
Describe Area	Affected a	und Cleanup A	ction Tak	en.* .										
Please see the a		Basin Enviro	nmental (Service Technolo	gies <i>Rei</i>	mediation Su	mmary and Site	Closure Request	or details of remedial activities					
regulations all o public health or should their ope	operators a the envir- erations ha nent. In ac	are required to onment. The ave failed to a ddition, NMO	report an acceptance dequately CD accept	d/or file certain re e of a C-141 repo investigate and re	elease no ort by the emediate	otifications as NMOCD m contaminati	nd perform correct arked as "Final Roon that pose a three	tive actions for re eport" does not re cat to ground water	suant to NMOCD rules and leases which may endanger lieve the operator of liability or, surface water, human health compliance with any other					
s: ()).	46					OIL CONS	SERVATION	DIVISION					
Signature: Printed Name	Jason He	nry	······································		 	Approved by	District Supervise	or:						
Title: Remedia						Approval Dat	e:	Expiration	Date:					
mail Address	: jhenry@	paalp.com				Conditions of	Approval:		Attached					
Date: 01 05		to If Nisanson		(575) 441-1099										