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REMEDIATION SUMMARY & RISK-BASED SITE CLOSURE REQUEST

**PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
Lea County, New Mexico
Unit Letter "O" (SW/SE), Section 16, Township 18 South, Range 34 East
Latitude 32° 44' 31.2" North, Longitude 103° 33' 46.6" West
Plains SRS #2008-113
NMOCD Reference #1RP-1853**

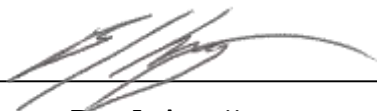
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1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin Environmental), on behalf of Plains All American Pipeline, LP (Plains), has prepared this *Remediation Summary & Risk-Based Site Closure Request* for the release site known as EK Queen Pearce 6-Inch. The legal description of the site is Unit Letter "O" (SW/SE), Section 16, Township 18 South, Range 34 East, in Lea County, New Mexico. The property affected by the release is owned by The State of New Mexico and is administered by the New Mexico State Land Office (NMSLO; Right-of-Entry permit #ROE-1706). The geographic coordinates of the site are 32° 44' 31.2" North latitude and 103° 33' 46.6" West longitude. Please reference Figure 1 for a "Site Location Map".

On May 6, 2008, Plains discovered a crude oil release from a six-inch (6") steel gathering pipeline. The cause of the release was attributed to internal corrosion. During initial response activities, a temporary pipeline clamp was employed to mitigate the release. The release was immediately reported to the New Mexico Oil Conservation Division (NMOCD) Hobbs District Office. The Release Notification and Corrective Action (Form C-141) indicated approximately ten barrels (10 bbls) of crude oil were released, with no recovery. General photographs of the site are provided as Appendix A. The Form C-141 is provided as Appendix H.

2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Water Rights Reporting System (NMWRRS) database maintained by the New Mexico Office of the State Engineer (NMOSE) indicated groundwater in Section 16, Township 18 South, Range 34 East, should be encountered at approximately one hundred and five (105) to one hundred and ten feet (110') below ground surface (bgs). Plains has installed four (4) monitor wells on-site, which indicate that groundwater ranges between approximately one hundred and seven (107) and one hundred and twenty-two feet (122') bgs. Laboratory analytical results from soil samples collected during the advancement of a delineation soil boring (SB-4) indicated total petroleum hydrocarbon (TPH) concentrations exceeded NMOCD regulatory standards within fifty feet (50') of groundwater. The depth of TPH impact results in a score of twenty (20) points being assigned to the site based on the NMOCD depth-to-groundwater criterion.

A search of the NMWRRS database indicated there are no water wells within one thousand feet (1,000') of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

There is an ephemeral lake (playa) located less than two hundred feet (200') south of the release. Based on the NMOCD ranking system, twenty (20) points will be assigned to the site as a result of this criterion.

NMOCD guidelines indicate the EK Queen Pearce 6-Inch site has an initial ranking score of forty (40) points. The soil remediation action levels for a site with a ranking score greater than nineteen (>19) points are as follows:

- Benzene – 10 mg/kg
- Benzene, toluene, ethyl-benzene, and total xylene (BTEX) – 50 mg/kg
- TPH – 100 mg/kg

On February 25, 2009, the NMOCD Hobbs District Office approved a modified remediation action level of five thousand (5,000) mg/kg for TPH.

The New Mexico Administrative Code (NMAC) does not currently specify a remediation action level for chloride concentrations in soil. Chloride remediation levels are set by the NMOCD on a site-specific basis.

3.0 DISTRIBUTION OF CONTAMINANTS IN THE UNSATURATED ZONE

3.1 Summary of Soil Remediation Activities

On May 15, 2008, following initial response activities, excavation of hydrocarbon impacted soil commenced. A photo-ionization detector (PID) was utilized to field-screen impacted soil and to guide the excavation. Excavated soil was stockpiled on-site on a plastic liner to mitigate the leaching of contaminants into the vadose zone. The initial excavation of impacted soil was completed on June 10, 2008.

On June 10, 2008, a soil sample (Floor @ 17') was collected from the floor of the excavation at approximately seventeen feet (17') bgs and submitted to Xenco Laboratories in Odessa, Texas, for analysis of TPH concentrations using Environmental Protection Agency (EPA) Method SW-846 8015M. Laboratory analytical results indicated the TPH concentration was 24,840 mg/kg. Soil sample locations are depicted in Figure #2, "Site & Sample Location Map". Laboratory analytical results are summarized in Table 1, "Concentrations of Benzene, BTEX, TPH & Chloride in Soil". Laboratory analytical reports are provided in Appendix E.

Review of laboratory analytical results indicated additional vertical delineation of the release site was required.

On July 25, 2008, a series of four (4) soil borings (SB-1, SB-2, SB-3, and SB-4) were advanced at the release site to further investigate the vertical extent of impacted soil. Soil samples were collected at five-foot (5') drilling intervals and field-screened using a Photo-Ionization Detector (PID). Selected soil samples were submitted to the laboratory for analysis of TPH concentrations and BTEX concentrations using EPA SW-846 8021b. Soil boring locations are depicted in Figure 2 and Figure 3, "Soil Boring & Well Location Map". Soil boring logs are provided in Appendix B.

Soil boring SB-1 was advanced southeast of the excavation, to a total depth of approximately forty feet (40') bgs. Soil samples collected at drilling depths of ten (10), twenty (20), thirty (30), and forty feet (40') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory method detection limit (MDL) in all submitted soil samples, with the exception of soil sample SB-1 @ 30', which exhibited a TPH concentration of 19.7 mg/kg.

Soil boring SB-2 was advanced northwest of the excavation, to a total depth of approximately thirty feet (30') bgs. Soil samples collected at drilling depths of ten (10), twenty (20), and thirty feet (30') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples.

Soil boring SB-3 was advanced north of the excavation, to a total depth of approximately thirty feet (30') bgs. Soil samples collected at drilling depths of ten (10), twenty (20), and thirty feet (30') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples.

Soil boring SB-4 was advanced south of the release point, in the floor of the excavation, at approximately seventeen feet (17') bgs. The soil boring was advanced to a total depth of approximately one hundred feet (100') bgs. Adjusting the depth of the soil boring in relation to the ground surface results in an actual soil boring depth of approximately one hundred seventeen feet (117') bgs. Soil samples collected at drilling depths of ten (10), twenty (20), thirty (30), forty (40), fifty (50), sixty (60), seventy (70), eighty (80), ninety (90), and one hundred feet (100') were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated benzene concentrations ranged from less than the laboratory MDL in the soil samples collected at 107' bgs (SB-4 @ 90') and 117' bgs (SB-4 @ 100') to 19.6 mg/kg in the soil sample collected at 27' bgs (SB-4 @ 10'). BTEX concentrations ranged from 0.0071 mg/kg in the soil sample collected at 107' bgs (SB-4 @ 90') to 701 mg/kg in the soil sample collected at 27' bgs (SB-4 @ 10'). TPH concentrations ranged from 75.7 mg/kg in the soil sample collected at 67' bgs (SB-4 @ 50') to 86,350 mg/kg in the soil sample collected at 27' bgs (SB-4 @ 10').

During the advancement of soil boring SB-4, groundwater was encountered at a drilling depth of approximately ninety-three feet (93'), or approximately one hundred ten feet (110') bgs. A temporary casing was installed in the soil boring to allow collection of a "preliminary" groundwater sample [Prelim GW (SB-4)] for analysis of BTEX concentrations. A summary of the laboratory analytical results from the preliminary groundwater sample is included in Section 4.1, "Summary of Groundwater Monitoring Activities", below. Following collection of the groundwater sample, soil boring SB-4 was plugged with two (2) bags of cement and twenty (20) bags of bentonite, per NMOSE regulatory requirements.

On October 23, 2008, eight (8) soil samples (N-1 S/W, N-2 S/W, S-1 S/W, S-2 S/W, E-1 S/W, E-2 S/W, W-1 S/W, and W-2 S/W) were collected from the sidewalls of the excavation and submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples. TPH concentrations ranged from less than the laboratory MDL in soil samples N-1 S/W, N-2 S/W, S-1 S/W, and S-2 S/W to 1,456 mg/kg in soil sample W-1 S/W.

On November 7, 2008, heavy equipment was mobilized to the release site to excavate a hard caliche layer beneath and immediately south of the release point. The excavated material was blended with the existing stockpile on-site. A total of approximately eight thousand, five hundred cubic yards (8,500 yd³) of soil was stockpiled on-site, pending final disposition.

From January 6 through January 8, 2009, after having procured the proper permit from the NMSLO (Water Easement #WM-200), three (3) groundwater monitor wells (MW-1 through MW-3) were installed at the EK Queen Pearce 6-Inch release site to evaluate the status of the underlying groundwater. Soil samples were collected at five-foot (5') drilling intervals and field-screened with a PID. Selected soil samples were submitted to the laboratory for analysis of TPH and BTEX concentrations. The locations of the monitor wells are depicted in Figures 2 and 3. Monitor well drilling logs are provided in Appendix B. The NMSLO Water Easement is provided in Appendix D.

Monitor well MW-1 was installed northwest of the release point, to a total depth of approximately one hundred thirty-nine feet (139') bgs. Soil samples collected at drilling depths of ten (10), thirty (30), fifty (50), seventy (70), ninety (90), one hundred ten (110), and one hundred twenty seven feet (127') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples, with the exceptions of soil samples MW-1 @ 110' and MW-1 @ 117', which exhibited TPH concentrations of 36.0 mg/kg and 17.7 mg/kg, respectively.

Monitor well MW-2 was installed east of the release point, to a total depth of approximately one hundred thirty-five feet (135') bgs. Soil samples collected at drilling depths of ten (10), thirty (30), fifty (50), seventy (70), ninety-five (95), one hundred ten (110), and one hundred twenty feet (120') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples.

Monitor well MW-3 was installed east of the release point, to a total depth of approximately one hundred twenty-six feet (126') bgs. Soil samples collected at drilling depths of ten (10), thirty-five (35), fifty (50), seventy (70), ninety (90), one hundred ten (110), and one hundred thirteen feet (113') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples.

On January 9, 2009, one (1) additional soil boring (SB-5) was advanced on the east end of the excavation floor at approximately seventeen feet (17') bgs to further investigate the vertical extent of impacted soil. The soil boring was advanced to a total depth of approximately sixty feet (60') bgs. Adjusting the depth of the soil boring in relation to the ground surface results in an actual soil boring depth of approximately seventy-seven feet (77') bgs. Soil samples were collected at five-foot (5') drilling intervals and field-screened with a PID. Soil samples collected at drilling depths of ten (10), twenty (20), thirty (30), forty (40), fifty (50) and sixty feet (60') were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples. The location of the soil boring is depicted in Figures 2 and 3.

In May 2009, Basin Environmental, on behalf of Plains, prepared and submitted a *Remediation Summary and Proposed Soil Closure Strategy* (Work Plan) to the NMOCD Hobbs District Office summarizing the above-referenced activities and detailing a strategy to advance the EK Queen

Pearce 6-Inch release site to an NMOCD-approved closure. Due to the impracticability of transporting and/or disposing of the large caliche rocks and boulders that had been removed from the excavation, permission was requested to place the rocks and boulders back into the excavation for use as backfill material. A screen machine would be utilized to separate impacted soil from the rocks, and the screened material would then be aerated to facilitate bioremediation. When laboratory analytical results of stockpile soil samples indicated TPH and BTEX constituent concentrations were below the recommended remediation action levels established for the site, the blended soil would be used as backfill material. Prior to backfilling, an impermeable, twenty-millimeter (20mm), polyurethane liner would be installed on the floor of the western portion of the excavation.

Following backfilling, a series of soil vapor extraction (SVE) wells would be installed in the area represented by soil boring SB-4. The SVE wells would be positioned in a concentric ring pattern adjacent to and to the north, south, east, and west of soil boring SB-4. The wells would be spaced approximately ten (10) to twenty-five-foot (25') feet apart and advanced to depths ranging from approximately twenty (20) to forty-five feet (45') bgs. The SVE system would utilize a blower to create a vacuum at predetermined screened intervals below the ground surface, allowing areas of concern to be addressed. The vacuum created by the blower would cause volatile organic compounds (VOCs) in the screened intervals to be removed from the affected soil and vented to the atmosphere. The SVE system would be operated continuously, only ceasing operation for short intervals for required maintenance. The SVE system was to be monitored and adjusted as conditions warranted, and emission air samples were to be collected and submitted to the laboratory as required by the New Mexico Environmental Department - Air Quality Bureau. When remediation goals had been achieved, a series of soil borings would be advanced in the area of the SVE wells to confirm the successful remediation of the targeted area of concern.

The Work Plan, SVE system installation, and plan of operation were approved by a representative of the NMOCD Hobbs District Office.

With NMOCD approval, from June 16 through June 26, 2009, the stockpiled material on-site was screened to separate impacted soil and large rocks. The segregated large rocks were placed back into the excavation as backfill. The screened material was blended with clean soil and/or lesser impacted stockpiled material on-site and aerated to facilitate bioremediation.

On June 17, 2009, three (3) soil samples (SP #1, SP #2, and SP #3) were collected from the blended material on-site and submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations ranged from 511 mg/kg in soil sample SP #2 to 3,538 mg/kg in soil sample SP #3. Benzene concentrations were less than the laboratory MDL in all submitted soil samples. BTEX concentrations ranged from 0.0115 mg/kg in soil sample SP #1 to 33.2 mg/kg in soil sample SP #3. Soil represented by soil samples SP #1, SP #2, and SP #3 was deemed acceptable for use as backfill material.

On June 22, 2009, two (2) soil samples (SP #4 and SP #5) were collected from the blended material on-site and submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations ranged from 3,186 mg/kg in soil sample SP #5 to 3,365 mg/kg in soil sample SP #4. Benzene concentrations ranged from less than the laboratory

MDL in soil sample SP #5 to 0.0213 mg/kg in soil sample SP #4. BTEX concentrations ranged from 9.22 mg/kg in soil sample SP #4 to 11.0 mg/kg in soil sample SP #5. Soil represented by soil samples SP #4 and SP #5 was deemed acceptable for use as backfill material.

On June 25, 2009, two (2) soil samples (SP #6 and SP #7) were collected from the blended material on-site and submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations ranged from 2,932 mg/kg in soil sample SP #6 to 3,157 mg/kg in soil sample SP #7. Benzene concentrations ranged from 0.0068 mg/kg in soil sample SP #6 to 0.0082 mg/kg in soil sample SP #7. BTEX concentrations ranged from 0.4203 mg/kg in soil sample SP #6 to 1.72 mg/kg in soil sample SP #7. Soil represented by soil samples SP #6 and SP #7 was deemed acceptable for use as backfill material.

On July 1, 2009, a twenty-millimeter (20mm), impermeable, polyurethane liner was installed in the floor of the western portion of the excavation at approximately fifteen feet (15') bgs. Approximately one foot (1') of non-impacted pad sand was installed both above and below the liner to protect the liner from damage during installation and backfilling activities. Following liner installation, Basin Environmental commenced backfilling of the excavation with the blended material on-site. The footprint of the liner is depicted in Figure 2.

On July 2, 2009, two (2) soil samples (SP #8 and Over Burden-2) were collected from the blended material and overburden on-site and submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations ranged from 117 mg/kg in soil sample Over Burden-2 to 3,062 mg/kg in soil sample SP #8. Benzene concentrations ranged from less than the laboratory MDL in soil sample SP #8 to 0.0031 mg/kg in soil sample SP #8. BTEX concentrations ranged from 0.0912 mg/kg in soil sample SP #8 to 0.1171 mg/kg in soil sample Over Burden-2. Soil represented by soil samples SP #8 and Over Burden-2 was deemed acceptable for use as backfill material.

On July 6, 2009, two (2) soil samples (Over Burden-1 and Over Burden-3) were collected from the overburden material on-site and submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations ranged from 16.7 mg/kg in soil sample Over Burden-1 to 22.6 mg/kg in soil sample Over Burden-3. BTEX constituent concentrations were less than the appropriate laboratory MDL in both soil samples. Soil represented by soil samples Over Burden-1 and Over Burden-3 was deemed acceptable for use as backfill material.

On July 13, 2009, backfilling of the excavation was completed, and the disturbed area was compacted and contoured to fit the surrounding topography. Final dimensions of the excavation were approximately one hundred sixty-two feet (162') in length, varying in width from approximately sixty-seven feet (67') to approximately one hundred and thirteen feet (113'), and varying in depth from approximately fifteen feet (15') to approximately seventeen feet (17') bgs.

From August 8 through August 17, 2009, hay bales and straw wattles were installed on-site to inhibit surface erosion.

On September 18, 2009, and March 10, 2010, the site was seeded with an NMSLO-approved seed mixture.

Per the Work Plan, from September 24 through September 25, 2009, a series of seven (7) SVE wells (SVE Deep Well #1 through Deep Well #5, SVE Shallow Well “A”, and SVE Shallow Well “B”) were installed in the area represented by soil boring SB-4. Soil samples were collected at five-foot (5') drilling intervals and field-screened with a PID. Selected soil samples were submitted to the laboratory for analysis of TPH and BTEX concentrations. The locations of the SVE wells are depicted in Figure 3. Well drilling logs are provided in Appendix B.

SVE Deep Well #1 was advanced to the north of soil boring SB-4, to a total depth of approximately forty-two feet (42') bgs. Soil samples collected at drilling depths of thirty-five (35) and forty feet (40') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations ranged from 8,650 mg/kg in soil sample SVE Deep #1 @ 35' to 10,030 mg/kg in soil sample SVE Deep #1 @ 40'. Benzene concentrations ranged from 3.93 mg/kg in soil sample SVE Deep #1 @ 35' to 5.11 mg/kg in soil sample SVE Deep #1 @ 40'. BTEX concentrations ranged from 290 mg/kg in soil sample SVE Deep #1 @ 35' to 323 mg/kg in soil sample SVE Deep #1 @ 40'.

SVE Deep Well #2 was advanced approximately twenty-five feet (25') to the north-northwest of SVE Deep Well #1, to a total depth of approximately forty-three feet (43') bgs. Soil samples collected at drilling depths of thirty-five (35) and forty-three feet (43') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in both soil samples.

SVE Deep Well #3 was advanced approximately twenty-five feet (25') to the east-northeast of SVE Deep Well #1, to a total depth of approximately forty-two feet (42') bgs. Soil samples collected at drilling depths of thirty-five (35) and forty feet (40') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in both soil samples.

SVE Deep Well #4 was advanced approximately twenty-five feet (25') to the south-southeast of SVE Deep Well #1, to a total depth of approximately forty-two feet (42') bgs. Soil samples collected at drilling depths of thirty-five (35) and forty feet (40') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in both soil samples.

SVE Deep Well #5 was advanced approximately twenty-five feet (25') to the west-southwest of SVE Deep Well #1, to a total depth of approximately forty-two feet (42') bgs. Soil samples collected at drilling depths of thirty-five (35) and forty feet (40') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations were less than the laboratory MDL in both soil samples. Benzene concentrations ranged from 0.0031 mg/kg in soil sample SVE Deep #5 @ 40' to 0.0051 mg/kg in

soil sample SVE Deep #5 @ 35'. BTEX concentrations ranged from 0.0583 mg/kg in soil sample SVE Deep #5 @ 40' to 0.0962 mg/kg in soil sample SVE Deep #5 @ 35'.

SVE Shallow Well "A" was advanced approximately ten feet (10') to the north-northwest of SVE Deep Well #1, to a total depth of approximately thirty-two feet (32') bgs. Soil samples collected at drilling depths of twenty (20), twenty-five (25), and thirty feet (30') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations ranged from 2,586 mg/kg in soil sample SVE Shallow "A" @ 20' to 7,244 mg/kg in soil sample SVE Shallow "A" @ 25'. Benzene concentrations ranged from less than the laboratory MDL in soil samples SVE Shallow "A" @ 20' and SVE Shallow "A" @ 30' to 3.23 mg/kg in soil sample SVE Shallow "A" @ 25'. BTEX concentrations ranged from 30.6 mg/kg in soil sample SVE Shallow "A" @ 30' to 214 mg/kg in soil sample SVE Shallow "A" @ 25'.

SVE Shallow Well "B" was advanced approximately ten feet (10') to the south-southeast of SVE Deep Well #1, to a total depth of approximately thirty-two feet (32') bgs. Soil samples collected at drilling depths of twenty (20), twenty-five (25), and thirty feet (30') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations ranged from 484 mg/kg in soil sample SVE Shallow "B" @ 20' to 4,710 mg/kg in soil sample SVE Shallow "B" @ 25'. Benzene concentrations ranged from 0.0205 mg/kg in soil sample SVE Shallow "B" @ 20' to 0.3639 mg/kg in soil sample SVE Shallow "B" @ 30'. BTEX concentrations ranged from 0.3702 mg/kg in soil sample SVE Shallow "B" @ 20' to 83.6 mg/kg in soil sample SVE Shallow "B" @ 30'.

From March 2 through March 30, 2010, PVC piping was installed to connect the wells to each other and to the SVE blower, which was housed in a portable building placed approximately seventy-five feet (75') to the northeast of SVE Deep Well #1 and adjacent to monitor well MW-2. To facilitate enhanced subsurface suction and attenuation of hydrocarbons in the areas of concern, the SVE wells were piped together in sections: SVE Deep Well #2 and SVE Deep Well #5 comprised section #1, SVE Shallow Well "A" and SVE Shallow Well "B" comprised section #2, SVE Deep Well #1 comprised section #3, SVE Deep Well #3 and SVE Deep Well #4 comprised section #4.

On March 31, 2010, the SVE system was activated, and air quality monitoring commenced on April 7, 2010. Air quality samples were collected on a monthly basis and submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations decreased from 5,450 parts per million by volume (ppmv) on May 18, 2010, to less than 100 ppmv on May 12, 2011. TPH concentrations remained below 100 ppmv in all air quality samples submitted from May 2011 through February 28, 2013. Benzene concentrations decreased from 504 ppmv on April 7, 2010, to less than the laboratory MDL on January 27, 2011. Benzene concentrations were less than the laboratory MDL in all air quality samples submitted from January 2011 through February 28, 2013. BTEX concentrations decreased from 997 ppmv on April 7, 2010, to less than 50 ppmv on December 9, 2010. BTEX concentrations remained below 50 ppmv in all air quality samples submitted from December 2010 through February 28, 2013. Laboratory analytical results are summarized in Table 2, "SVE Emissions". Laboratory analytical reports are provided in Appendix G.

Based on laboratory analytical results from the monthly air quality samples, and per the May 2009 Work Plan, two (2) soil borings (SB-6 and SB-7) were advanced at the site on January 28, 2011, to assess the extent of hydrocarbon contamination remaining in-situ in and around the targeted area of concern. Soil samples were collected at five-foot (5') drilling intervals and field-screened with a PID. Selected soil samples were submitted to the laboratory for analysis of TPH and BTEX concentrations, as well as chloride concentrations using EPA Method 300.1. The locations of the soil borings are depicted in Figure 3. Soil boring logs are provided in Appendix B.

Soil boring SB-6 was advanced approximately eight feet (8') to the south-southwest of SVE Deep Well #1 and approximately five feet (5') to the northwest of SVE Shallow Well "B", to a total depth of approximately forty-five feet (45') bgs. Soil samples collected at drilling depths of twenty (20), twenty-five (25), thirty (30), thirty-five (35), forty (40), and forty-five feet (45') bgs were submitted to the laboratory for analysis of TPH, BTEX, and chloride concentrations. Laboratory analytical results indicated TPH concentrations ranged from 347 mg/kg in soil sample SB-6 @ 40' to 5,220 mg/kg in soil sample SB-6 @ 25'. Benzene concentrations ranged from less than the laboratory MDL in soil samples SB-6 @ 25', SB-6 @ 35', SB-6 @ 40', and SB-6 @ 45' to 0.0093 mg/kg in soil sample SB-6 @ 30'. BTEX concentrations ranged from 0.0612 mg/kg in soil sample SB-6 @ 45' to 1.67 mg/kg in soil sample SB-6 @ 25'. Chloride concentrations ranged from 9.38 mg/kg in soil sample SB-6 @ 40' to 23.1 mg/kg in soil sample SB-6 @ 20'.

Soil boring SB-7 was advanced approximately eight feet (8') to the northwest of SVE Deep Well #1 and approximately four feet (4') to the southwest of SVE Shallow Well "A", to a total depth of approximately fifty-two feet (52') bgs. In an attempt to make a direct comparison to the contaminant concentrations observed in soil boring SB-4, which was advanced in the floor of the excavation, soil samples were collected at drilling depths of twenty-two (22), twenty-seven (27), thirty-two (32), thirty-seven (37), forty-two (42), forty-seven (47), and fifty-two feet (52) bgs. The soil samples were submitted to the laboratory for analysis of TPH, BTEX, and chloride concentrations. Laboratory analytical results indicated TPH concentrations ranged from 4,700 mg/kg in soil sample SB-7 @ 22' to 13,400 mg/kg in soil sample SB-7 @ 47'. Benzene concentrations ranged from less than the laboratory MDL in soil samples SB-7 @ 32', SB-7 @ 37', SB-7 @ 42', and SB-7 @ 52' to 0.0096 mg/kg in soil sample SB-7 @ 22'. BTEX concentrations ranged from 0.2964 mg/kg in soil sample SB-7 @ 52' to 6.51 mg/kg in soil sample SB-7 @ 47'. Chloride concentrations ranged from 8.93 mg/kg in soil sample SB-7 @ 42' to 11.3 mg/kg in soil sample SB-7 @ 52'.

From January 20 through January 23, 2012, three (3) additional soil borings (SB-8 through SB-10) were advanced at the site to assess the extent of hydrocarbon contamination remaining in-situ in and around the targeted area of concern. Soil samples were collected at five-foot (5') drilling intervals and field-screened with a PID. Selected soil samples were submitted to the laboratory for analysis of TPH and BTEX concentrations, as well as chloride concentrations using EPA Method 300.1. The locations of the soil borings are depicted in Figure 3. Soil boring logs are provided in Appendix B.

Soil boring SB-8 was advanced approximately five feet (5') to the northwest of SVE Deep Well #1 and approximately three feet (3') to the southeast of soil boring SB-7, to a total depth of approximately seventy feet (70') bgs. Soil samples collected at drilling depths of twenty (20),

twenty-five (25), thirty (30), thirty-five (35), forty (40), forty-five (45), fifty (50), fifty-five (55), sixty (60), and sixty-five feet (65') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations ranged from 534 mg/kg in soil sample SB-8 @ 20' to 13,200 mg/kg in soil sample SB-8 @ 55'. Benzene concentrations ranged from less than the laboratory MDL in soil samples SB-8 @ 20', SB-8 @ 35', SB-8 @ 50', SB-8 @ 55', SB-8 @ 60', and SB-8 @ 65' to 0.0069 mg/kg in soil sample SB-8 @ 45'. BTEX concentrations ranged from 0.0485 mg/kg in soil sample SB-8 @ 20' to 72.9 mg/kg in soil sample SB-8 @ 60'.

Soil boring SB-9 was advanced approximately eight and one-half feet (8.5') to the northwest of SVE Shallow Well "A" and approximately ten feet (10') to the south-southwest of SVE Deep Well #2, to a total depth of approximately thirty-five feet (35') bgs. Soil samples collected at drilling depths of twenty (20) and thirty-five feet (35') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations ranged from 29.9 mg/kg in soil sample SB-9 @ 35' to 1,350 mg/kg in soil sample SB-9 @ 20'. Benzene concentrations were less than the laboratory MDL in both submitted soil samples. BTEX concentrations ranged from less than the laboratory MDL in soil sample SB-9 @ 35' to 0.0030 mg/kg in soil sample SB-9 @ 20'.

Soil boring SB-10 was advanced approximately three feet (3') to the southwest of SVE Shallow Well "B" and approximately five feet (5') to the southeast of soil boring SB-6, to a total depth of approximately sixty feet (60') bgs. Soil samples collected at drilling depths of twenty (20), twenty-five (25), thirty (30), thirty-five (35), forty (40), forty-five (45), fifty (50), fifty-five (55), and sixty feet (60') bgs were submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH concentrations ranged from 1,030 mg/kg in soil sample SB-10 @ 60' to 10,300 mg/kg in soil sample SB-10 @ 35'. Benzene concentrations were less than the laboratory MDL in all submitted soil samples, with the exception of soil sample SB-10 @ 25', which exhibited a benzene concentration of 0.0070 mg/kg. BTEX concentrations ranged from less 0.0038 mg/kg in soil sample SB-10 @ 55' to 0.0629 mg/kg in soil sample SB-10 @ 25'.

On March 3, 2012, representatives of Plains and Basin Environmental met with a representative of the NMOCD Hobbs District Office to discuss the findings from the January 2011 and January 2012 drilling events, as well as the results from the monthly air quality monitoring samples collected from the SVE system. Since laboratory analytical data indicated that contaminated soil in the targeted area of concern had been remediated to the extent practicable and the SVE system was no longer effective, permission was requested to deactivate and remove the system from the site. The NMOCD representative requested additional time to review the supplied documentation, and no response was provided.

On June 21, 2012, representatives of Plains and Basin Environmental met with a representative of the NMOCD Hobbs District Office to again request permission to deactivate and remove the SVE system from the site. The request was denied. However, the NMOCD representative requested that the SVE system be deactivated for a period of one calendar quarter to allow the natural off-gassing of subsurface hydrocarbons, with the understanding that, if after one quarter of dormancy, the SVE system failed to increase in efficiency upon reactivation, it could be permanently deactivated and

removed from the site. The NMOCD representative also mandated the installation of an additional monitor well (MW-4) to evaluate the status of groundwater down-gradient of the SVE wells.

On July 7, 2012, per NMOCD request, the SVE system was temporarily deactivated. The SVE system piping was disconnected, and the caps of the SVE wells were left open to facilitate the natural off-gassing and attenuation of subsurface hydrocarbons.

On October 3, 2012, following approximately one calendar quarter of dormancy, the SVE system was reactivated, and monthly air quality monitoring recommenced. Review of laboratory analytical results from air quality samples collected on October 15 and November 5, 2012, and January 29 and February 28, 2013, confirmed that contaminated soil in the targeted area of concern had been remediated to the extent practicable.

On December 12, 2012, after having procured the proper permits from the NMSLO (Water Easement #WM-200) and the NMOSE (File #L-13211), installation of monitor well MW-4 commenced. Monitor well MW-4 was installed approximately seventy-five feet (75') down-gradient (northwest) of SVE Deep Well #1 and was advanced to a total depth of approximately one hundred and forty feet (140') bgs. Soil samples were collected at five-foot (5') drilling intervals and field-screened with a PID. Soil samples collected at drilling depths of ten (10), twenty (20), thirty (30), forty (40), and sixty feet (60') bgs were submitted to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples. The location of the monitor well is depicted in Figures 2 and 3. A monitor well log is provided in Appendix B. NMSLO and NMOSE permits are provided in Appendix D.

On March 20, 2013, based on laboratory analytical documentation, representatives of Plains and Basin Environmental met with a representative of the NMOCD Hobbs District Office to request permission to permanently deactivate and remove the SVE system from the site. The request was approved by the NMOCD representative, and the system was deactivated by Basin Environmental personnel during a pre-scheduled service visit later that day.

On April 4, 2013, the SVE well piping was dismantled, and the building housing the blower system was removed on April 17, 2013.

3.2 Soil Closure Request

Soil remediation activities at the EK Queen Pearce 6-Inch release site met the objectives set forth in the *Remediation Summary and Proposed Soil Closure Strategy* dated May 2009. Impacted soil was excavated to the extent practicable. Soil samples collected from the sidewalls of the EK Queen Pearce 6-Inch excavation were analyzed by an NMOCD-approved laboratory, and concentrations of BTEX and TPH were below the recommended remediation action levels established for the site by the NMOCD.

An impermeable, twenty (20) mil polyurethane liner was installed on the floor of the western portion of the excavation prior to backfilling. This engineered control will inhibit vertical migration of contaminants from below the liner to the surface, protecting the vegetative zone. In

addition, the polyurethane liner will shed moisture to the edge of the liner and beyond the maximum horizontal extent of underlying impacted soil, effectively inhibiting vertical migration of contaminants to groundwater.

Basin Environmental recommends Plains provide the NMOCD Hobbs District Office and the NMSLO a copy of this *Remediation Summary & Risk-Based Site Closure Request* and request the NMOCD grant soil closure status to the EK Queen Pearce 6-Inch release site.

4.0 DISTRIBUTION OF CONTAMINANTS IN THE SATURATED ZONE

4.1 Summary of Groundwater Monitoring Activities

On July 25, 2008, a groundwater sample [Prelim GW (SB-4)] was collected from the temporary casing installed in soil boring SB-4. Laboratory analytical results indicated a benzene concentration of 0.0016 mg/L, a toluene concentration of 0.008 mg/L, an ethyl-benzene concentration of 0.0074 mg/L, and a total xylene concentration of 0.014 mg/L. Table 3 summarizes the “Concentrations of Benzene, BTEX, TPH, Chloride, and Total Dissolved Solids in Groundwater”.

Based on these analytical results, the NMOCD Hobbs District Office requested the installation of three (3) groundwater monitoring wells (MW-1 through MW-3) at the release site. A summary of the installation of the monitor wells and analytical results from the submitted soil samples is included in Section 3.1, “Summary of Soil Remediation Activities”, above.

Groundwater monitoring events were conducted from the first quarter of 2009 (January 20, 2009) through the third quarter of 2014 (August 6, 2014), to assess the levels and extent of dissolved-phase constituents in the on-site monitor wells. The groundwater monitoring events consisted of measuring static water levels in the on-site monitor wells (MW-1 through MW-4), checking for the presence of PSH, and purging and sampling of each well exhibiting sufficient recharge. The monitor wells were purged using disposable Teflon bailers of a minimum of three (3) well volumes of water, or until the wells were dry. Groundwater was allowed to recharge, and samples were obtained using clean, disposable Teflon bailers. Water samples were stored in clean, plastic or 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 NMOCD-approved disposal facility near Monument, New Mexico.

Monitor wells MW-1 through MW-3 were sampled on a quarterly basis from January to December 2009. With NMOCD approval, following four (4) consecutive quarters with no detections of BTEX constituents, the wells were placed on a semi-annual monitoring schedule and are currently sampled during the second and fourth quarters of each calendar year (April – June and October – December, respectively).

On December 18, 2012, groundwater samples were collected from monitor well MW-4 to assess the baseline concentrations of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), inorganic chemicals (anions & cations), Resource Conservation and Recovery Act (RCRA) metals, and New Mexico Water Quality Control Commission (NMWQCC)

metals. Contaminant concentrations are summarized in Table 5 through Table 8. Monitor well MW-4 is currently sampled for BTEX constituent concentrations on a quarterly basis.

Laboratory analytical results from groundwater samples were compared to NMOCD regulatory limits based on New Mexico groundwater standards found in Section 20.6.2.3103 of the NMAC. Laboratory analytical reports are provided in Appendix F. Groundwater contaminant concentrations for the most recent sampling events (February 10, May 7, and August 6, 2014) are depicted in Figures 5A through 5C.

Locations of groundwater monitoring wells and the inferred groundwater gradient constructed from groundwater elevation measurements collected during the most recent sampling events (February 10, May 7, and August 6, 2014) are depicted in Figures 4A through 4C. Groundwater was observed at depths ranging from 108.45 to 122.19 feet bgs in the on-site monitor wells, and the groundwater gradient maps indicate a general gradient of approximately 0.003 feet/foot to the northwest, as measured between monitor wells MW-1 and MW-3. Groundwater gauging data is provided in Table 4, "Groundwater Elevation Data".

No PSH was detected in the on-site monitor wells during any of the quarterly or semi-annual monitoring events.

4.2 Quarterly Monitoring Data

Data collected during the quarterly groundwater monitoring events is summarized below. Monitor wells MW-1 through MW-3 were sampled for BTEX constituent concentrations on January 20, June 15, September 15, and November 19, 2009. The monitor wells were also sampled for concentrations of chloride and total dissolved solids (TDS) during the January 20, 2009, sampling event.

Monitor well MW-4 was sampled for BTEX constituent concentrations on February 1, May 3, August 13, and November 15, 2013; and February 2, May 7, and August 6, 2014.

Monitor Well MW-1

Benzene, toluene, ethylbenzene, and total xylene concentrations were both less than the appropriate laboratory MDL and less than NMWQCC regulatory standards in all submitted groundwater samples.

The chloride concentration in the groundwater sample collected on January 20, 2009, was 200 mg/L, and the TDS concentration was 528 mg/L. Chloride and TDS concentrations were less than the NMWQCC regulatory standards of 250 mg/L and 1,000 mg/L, respectively.

Monitor Well MW-2

Benzene concentrations were less than the laboratory MDL in all submitted groundwater samples, with the exception of the sample collected on September 15, 2009, which exhibited a benzene concentration of 0.0020 mg/L. Benzene concentrations were less than NMWQCC regulatory

standards in all submitted samples. Toluene, ethylbenzene, and total xylene concentrations were both less than the appropriate laboratory MDL and less than NMWQCC regulatory standards in all submitted groundwater samples.

The chloride concentration in the groundwater sample collected on January 20, 2009, was 206 mg/L, and the TDS concentration was 572 mg/L. Chloride and TDS concentrations were less than the NMWQCC regulatory standards of 250 mg/L and 1,000 mg/L, respectively.

Monitor Well MW-3

Benzene, toluene, ethylbenzene, and total xylene concentrations were both less than the appropriate laboratory MDL and less than NMWQCC regulatory standards in all submitted groundwater samples.

The chloride concentration in the groundwater sample collected on January 20, 2009, was 126 mg/L, and the TDS concentration was 378 mg/L. Chloride and TDS concentrations were less than the NMWQCC regulatory standards of 250 mg/L and 1,000 mg/L, respectively.

Monitor Well MW-4

Benzene, toluene, ethylbenzene, and total xylene concentrations were both less than the appropriate laboratory MDL and less than NMWQCC regulatory standards in all submitted groundwater samples.

The chloride concentration in the groundwater sample collected on December 18, 2012, was 420 mg/L, which exceeded the NMWQCC regulatory standard of 250 mg/L.

4.3 Semi-Annual Monitoring Data

Data collected during the semi-annual groundwater monitoring events is summarized below. Monitor wells MW-1 through MW-3 were sampled on May 21 and November 2, 2010; May 5 and October 26, 2011; May 2 and October 12, 2012; May 3 and November 15, 2013; and May 7, 2014.

Monitor Well MW-1

Benzene, toluene, ethylbenzene, and total xylene concentrations were both less than the appropriate laboratory MDL and less than NMWQCC regulatory standards in all submitted groundwater samples.

Monitor Well MW-2

Benzene, toluene, ethylbenzene, and total xylene concentrations were both less than the appropriate laboratory MDL and less than NMWQCC regulatory standards in all submitted groundwater samples.

Monitor Well MW-3

Benzene, toluene, ethylbenzene, and total xylene concentrations were both less than the appropriate laboratory MDL and less than NMWQCC regulatory standards in all submitted groundwater samples.

4.4 Groundwater Closure Request

Groundwater samples collected from monitor wells MW-1 through MW-4 at the EK Queen Pearce 6-Inch release site were analyzed by an NMOCD-approved laboratory, and BTEX constituent concentrations have been both less than the appropriate laboratory MDL and less than NMWQCC and NMOCD regulatory standards since groundwater monitoring commenced in January 2009. Since no evidence of groundwater contamination exists, Plains hereby requests permission to cease groundwater monitoring activities at the EK Queen Pearce 6-Inch release site and to plug and abandon (P&A) the four (4) on-site monitor wells. Pending NMOCD approval, the monitor wells will be P&A'd pursuant to NMOSE and NMOCD regulatory requirements.

5.0 QA/QC PROCEDURES

5.1 Soil Sampling

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

- BTEX concentrations in accordance with EPA Method SW 846-8021b
- TPH concentrations in accordance with modified EPA Method SW 846-8015M
- Chloride concentrations in accordance with EPA Method 300.1

5.2 Groundwater Sampling

Groundwater samples were submitted to Xenco Laboratories in Odessa, Texas, for analysis of BTEX, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, anions/cations, and/or TDS concentrations using the methods described below. All samples were analyzed within EPA-designated hold times following the collection date.

- BTEX concentrations in accordance with EPA Method SW846-8021B
- VOC concentrations in accordance with EPA Method SW-846 8260B
- SVOC concentrations in accordance with EPA Method SW-846 8270C
- Metal concentrations in accordance with EPA Methods 200.7, 200.8, and/or 245.1 (mercury)
- Anion/cation concentrations in accordance with EPA Methods 300/300.1 (chloride, fluoride, nitrate, and sulfate) and/or SM2320B (carbonate)
- TDS concentrations in accordance with EPA 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

Soil remediation activities at the EK Queen Pearce 6-Inch release site met the objectives set forth in the *Remediation Summary and Proposed Soil Closure Strategy* dated May 2009. Laboratory analytical results from quarterly and semi-annual groundwater monitoring samples collected from January 2009 through August 2014 indicate there is no evidence of groundwater contamination at the site. Basin Environmental recommends Plains provide the NMOCD Hobbs District Office and the NMSLO a copy of this *Remediation Summary & Risk-Based Site Closure Request* and request the NMOCD grant site closure status to the EK Queen Pearce 6-Inch release site.

7.0 LIMITATIONS

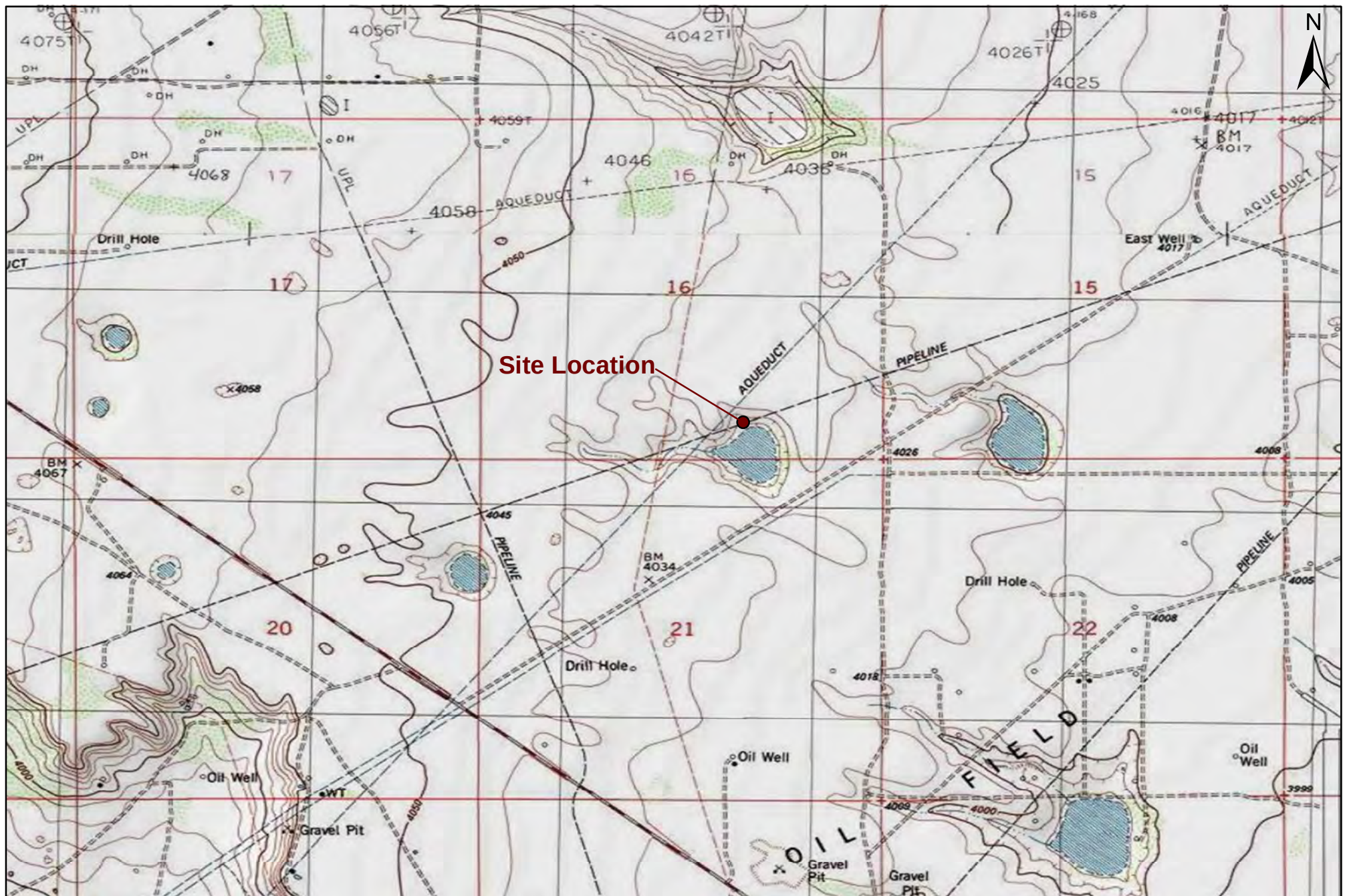
Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & Risk-Based Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin Environmental Service Technologies, LLC, has examined and relied upon documents referenced in the report and has relied 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 All American Pipeline, LP. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express written consent of Basin Environmental Service Technologies, LLC, and/or Plains All American Pipeline, LP.

8.0 DISTRIBUTION:

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Lovington, NM 88260

Figures



Site Location

1,000 500 0 1,000 2,000
Distance in Feet

Figure #1
Site Location Map
 Plains All American Pipeline, LP
 EK Queen Pearce 6-Inch
 Lea County, New Mexico
 Plains SRS #: 2008-113
 NMOCD Reference #: 1RP-1853



Basin Environmental Service Technologies, LLC
 3100 Plains Hwy.
 Lovington, NM 88260

Drawn By: BJA	Checked By: BRB
November 26, 2014	Scale: 1" = 2,000'



□ SB-2

⊕ MW-1

N-1
ND

□ SB-3

Release Point

Two-Track Road

Plains Pipeline

MW-4 ⊕

15 feet bgs

⊕ MW-2

Bench
W-1
1,455.6

E-1
921.1

Bench

N-2
ND

E-2
43.7

□ SB-5

S-1
ND

W-2
482.6

□ SB-4

17 feet bgs

S-2
ND

Bench

⊕ MW-3

□ SB-1

Ramp

Ramp

40 20 0 20 40

Approximate Distance in Feet

Legend:

--- Excavation Extent

— Liner

— Pipeline

⊕ MW-1
Monitor Well Location

□ SB-1
Soil Boring

● W-1
97.7
Soil Sample Location with TPH concentration

Figure 2
Site & Sample Location Map

Plains All American Pipeline LP
EK Queen Pearce 6-Inch
Lea County, New Mexico
Plains SRS #: 2008-113
NMOCD Ref. #: 1RP-1853

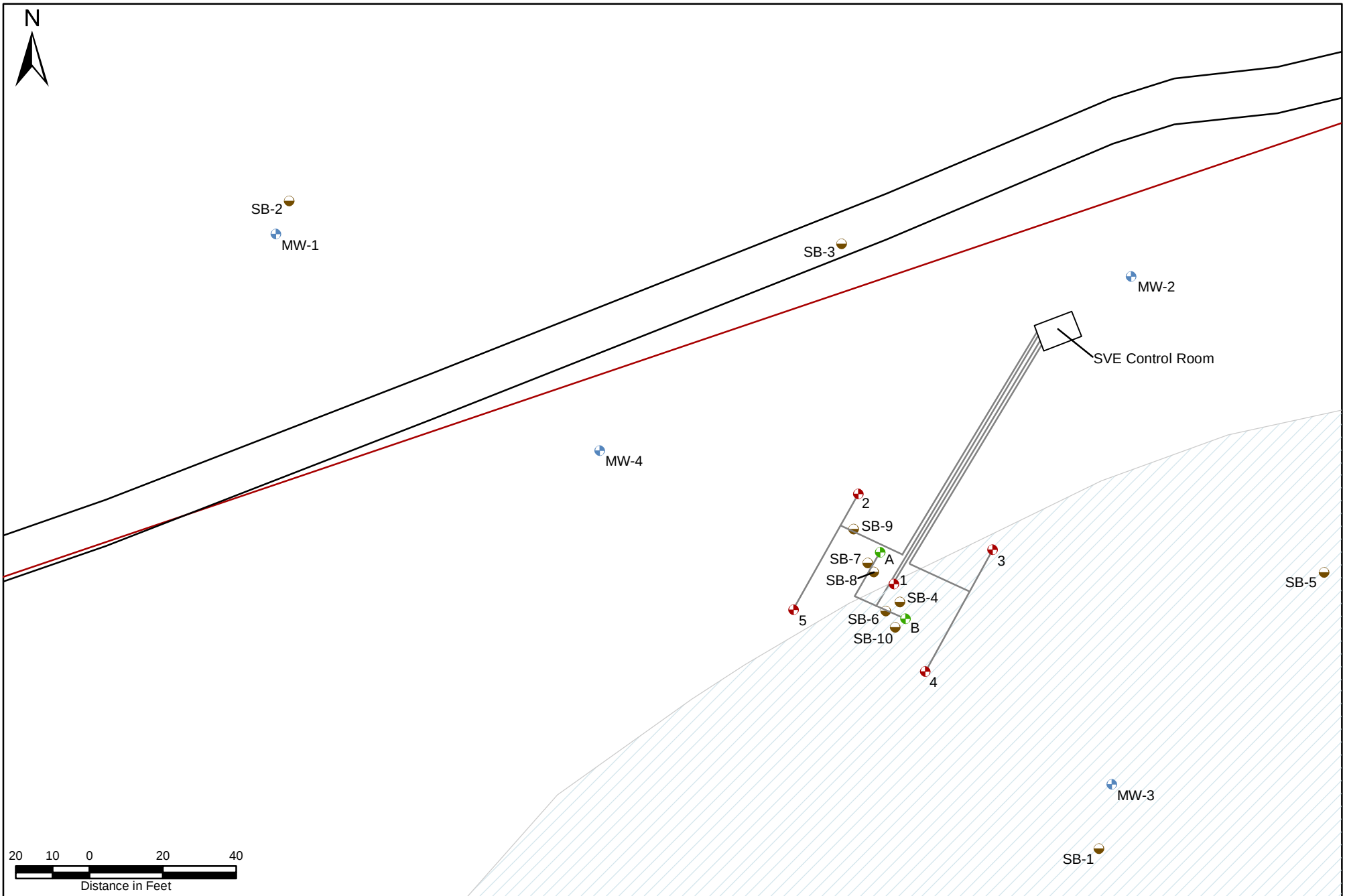
Basin Environmental Service Technologies, LLC
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Lovington, NM 88260

Drawn By: CDS

Revised By: BJA

Revised November 26, 2014

Scale: 1" = 40'



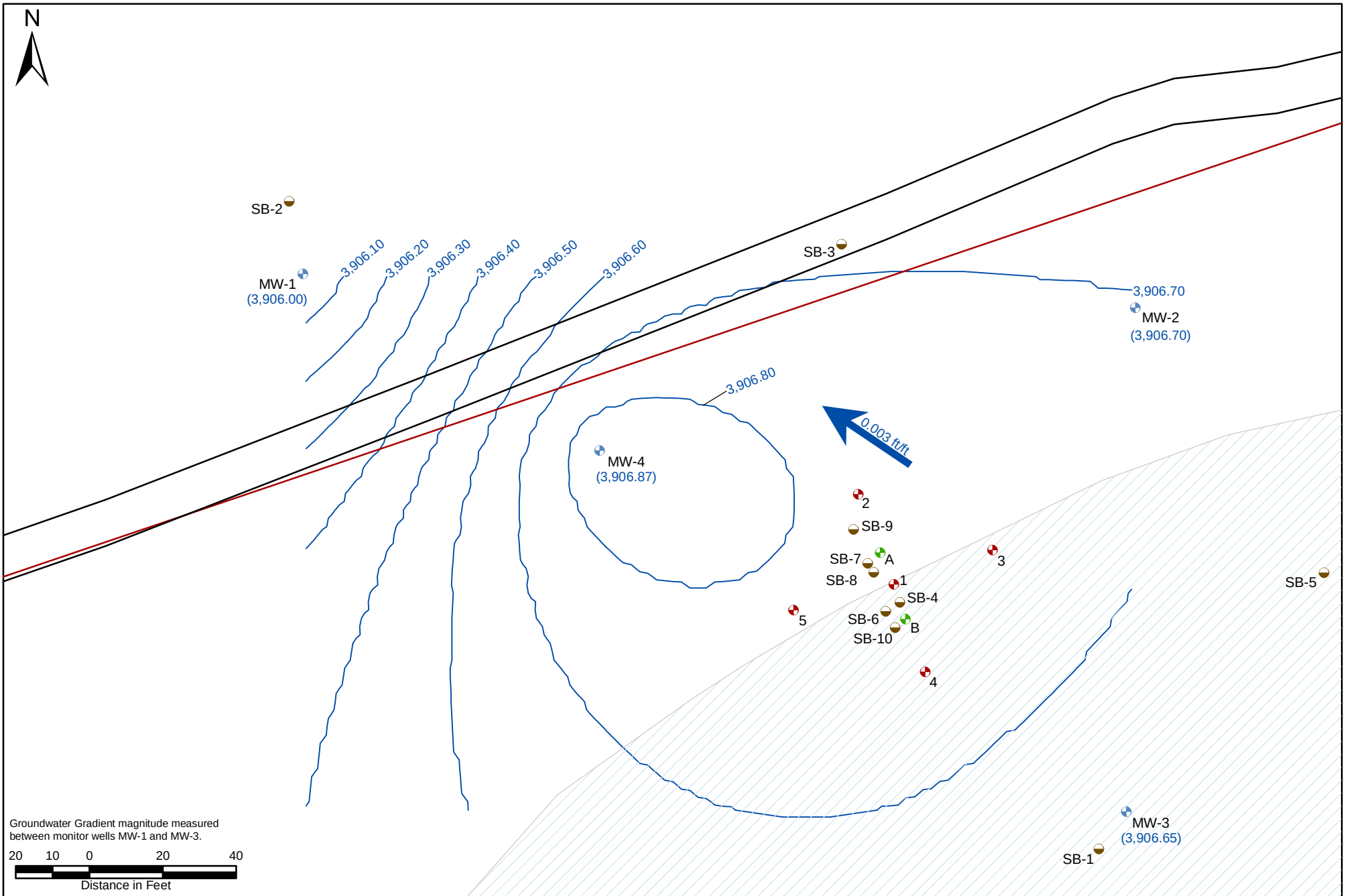
Legend	
Monitor Well	Pipeline
SVE Deep Well	Road
SVE Shallow Well	SVE System Piping
Soil Boring	Playa Watershed

Figure 3
Soil Boring & Well Location Map
 Plains All American Pipeline, LP
 EK Queen Pearce 6-Inch
 Lea County, New Mexico
 Plains SRS #: 2008-113
 NMOCD Reference #: 1RP-1853



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Drawn By: BJA	Checked By: BRB
November 26, 2014	Scale: 1" = 35'



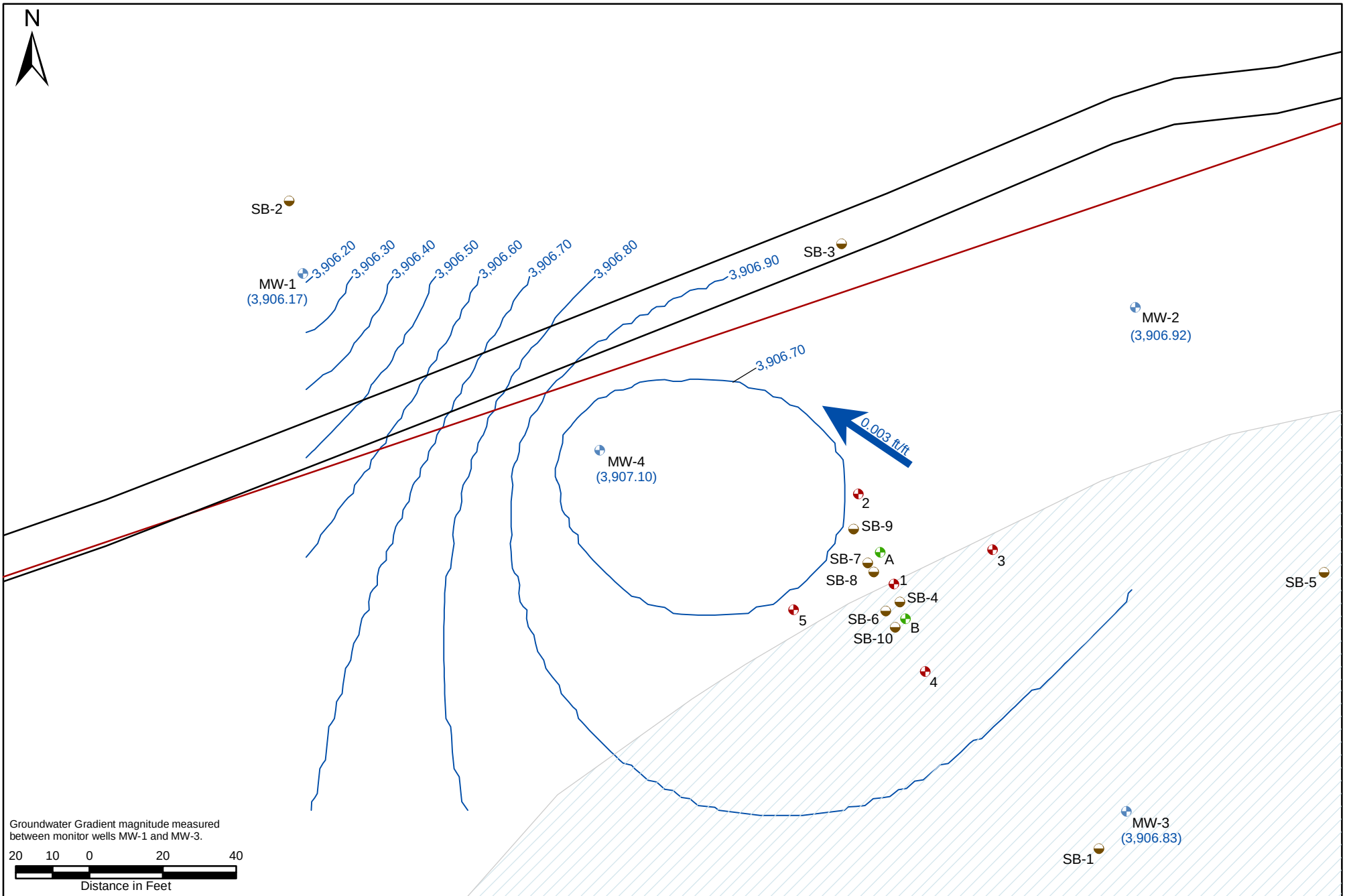
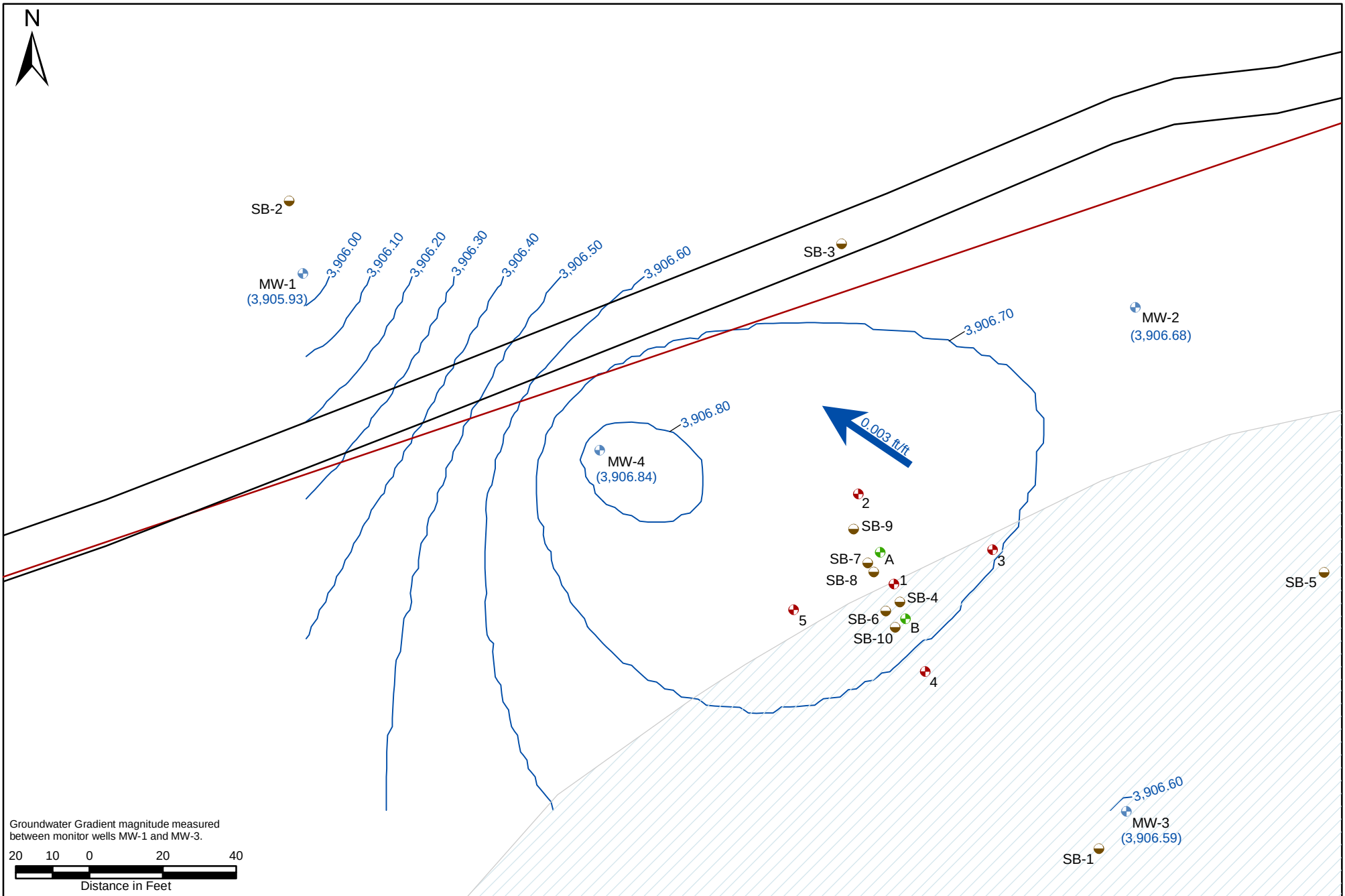


Figure 4B
Groundwater Gradient Map - 2Q2014
Plains All American Pipeline, LP
EK Queen Pearce 6-Inch
Lea County, New Mexico
Plains SRS #: 2008-113
NMOCD Reference #: 1RP-1853



Basin Environmental Service Technologies, LLC
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Drawn By: BJA	Checked By: BRB
May 7, 2014	Scale: 1" = 35'



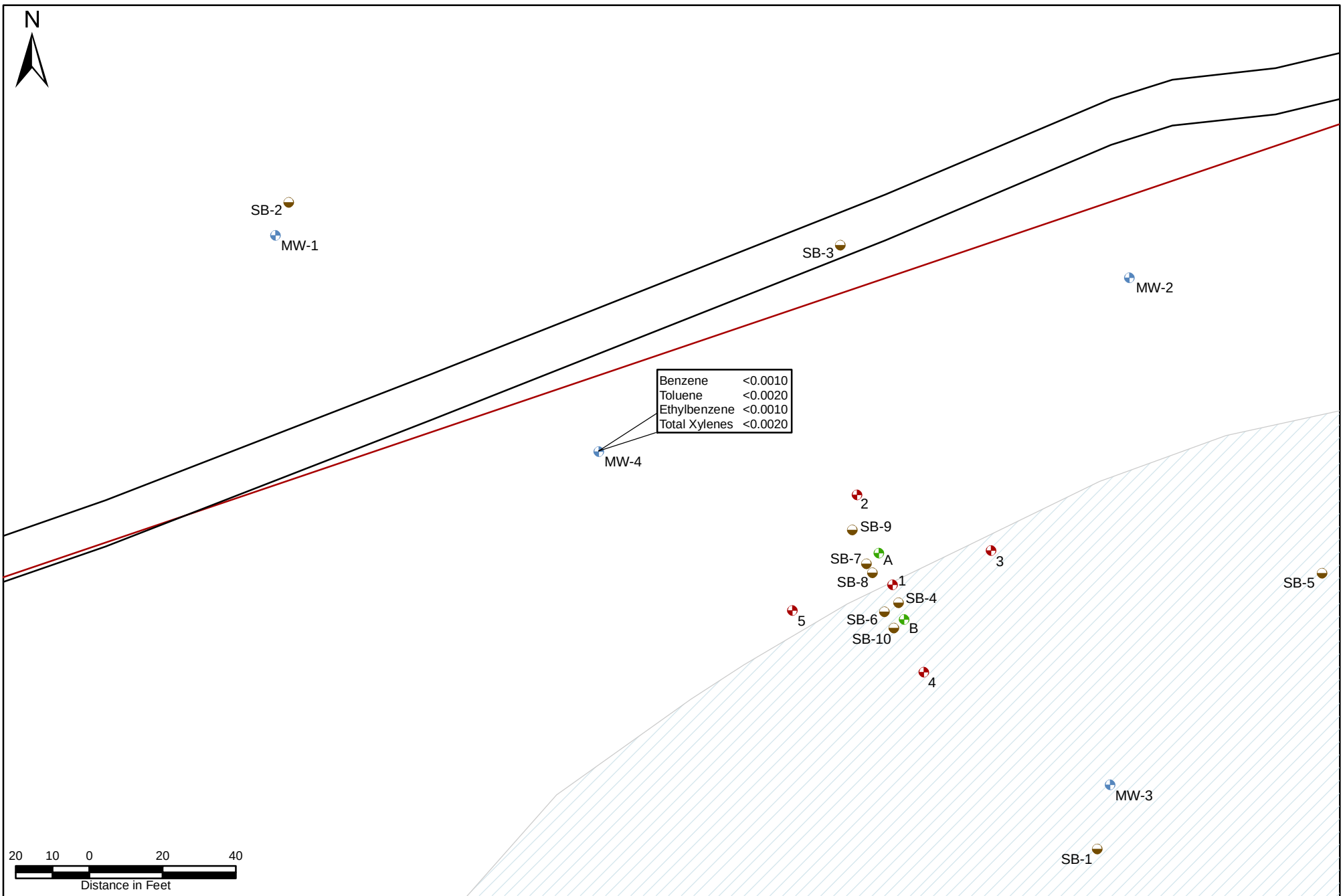
Legend	
	Monitor Well
	SVE Deep Well
	SVE Shallow Well
	Soil Bore
	Playa Watershed
	Pipeline
	Road
	(3,720) Groundwater Elevation (ft)
	0.003 ft/ft Groundwater Gradient & Magnitude

Figure 4C
Groundwater Gradient Map - 3Q2014
Plains All American Pipeline, LP
EK Queen Pearce 6-Inch
Lea County, New Mexico
Plains SRS #: 2008-113
NMOCD Reference #: 1RP-1853



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Drawn By: BJA	Checked By: BRB
August 13, 2014	Scale: 1" = 35'



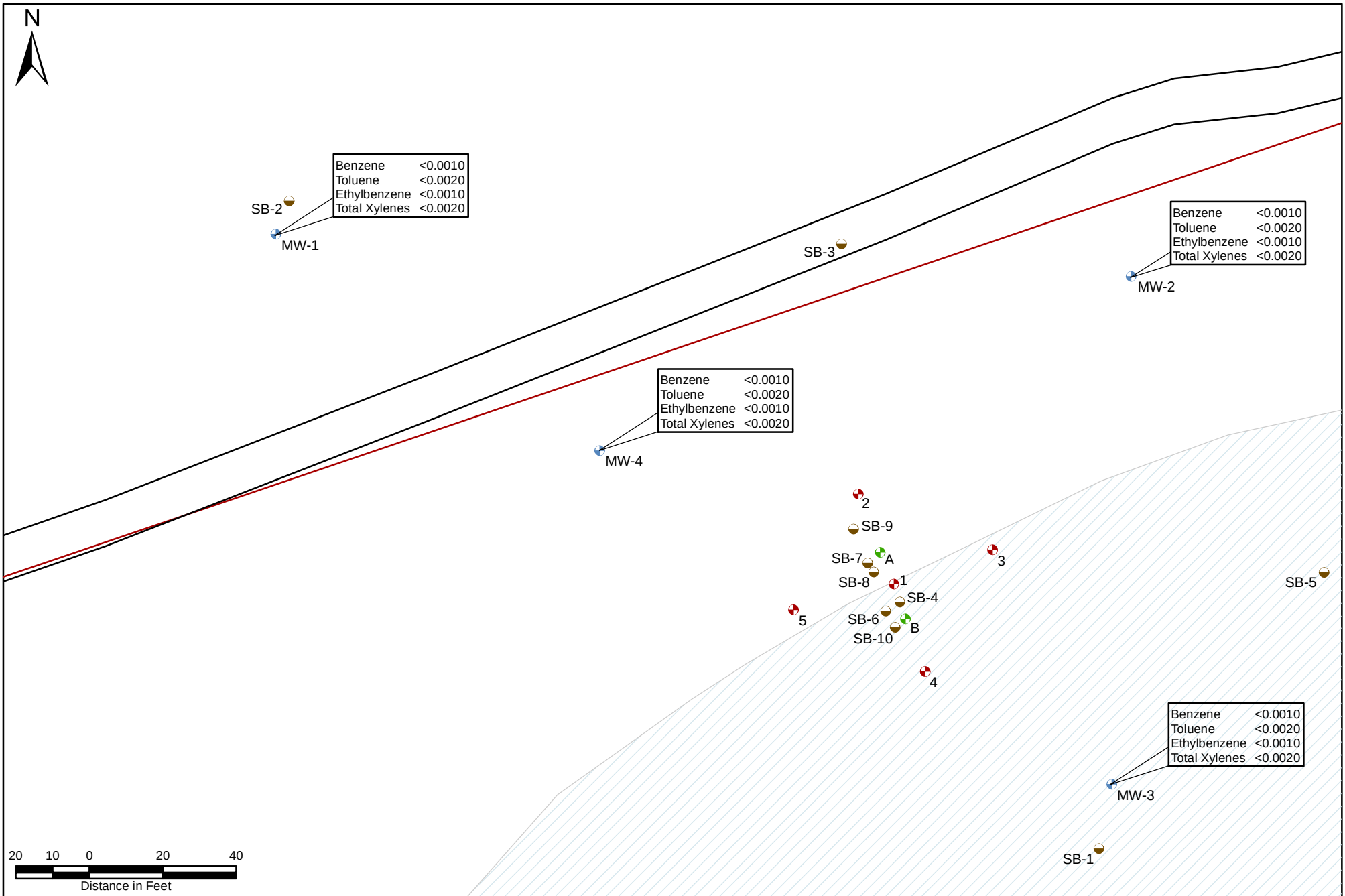
Legend	
	Monitor Well
	SVE Deep Well
	SVE Shallow Well
	Soil Bore
	Pipeline
	Road
	Playa Watershed

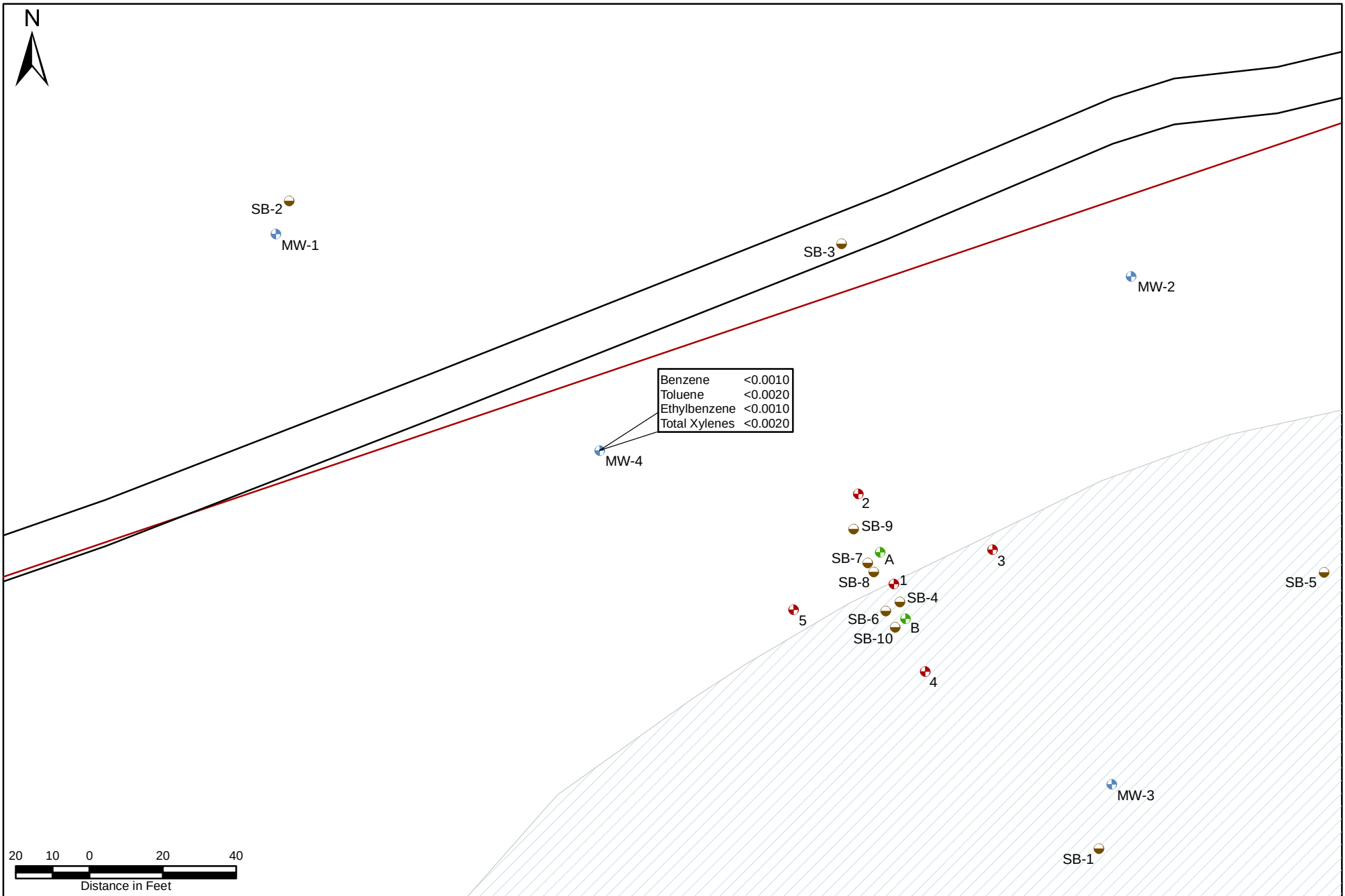
Figure 5A
Groundwater Concentration Map - 1Q2014
Plains All American Pipeline, LP
EK Queen Pearce 6-Inch
Lea County, New Mexico
Plains SRS #: 2008-113
NMOCD Reference #: 1RP-1853



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Drawn By: BJA	Checked By: BRB
April 3, 2014	Scale: 1" = 35'





Legend

- Monitor Well
- SVE Deep Well
- SVE Shallow Well
- Soil Bore
- Pipeline
- Road
- Playa Watershed

Figure 5C
Groundwater Concentration Map - 3Q2014
Plains All American Pipeline, LP
EK Queen Pearce 6-Inch
Lea County, New Mexico
Plains SRS #: 2008-113
NMOCD Reference #: 1RP-1853

Basin Environmental Service Technologies, LLC
 3100 Plains Hwy.
 Lovington, NM 88260

Drawn By: BJA	Checked By: BRB
August 13, 2014	Scale: 1" = 35'

Tables

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030						METHOD: 8015M			TOTAL	E 300
				BENZENE (mg/Kg)	TOLUENE mg/Kg	ETHYL-BENZENE (mg/Kg)	M.P. - XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL BTEX	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)
Floor @ 17'	17'	6/10/2008	In-Situ	-	-	-	-	-	-	4,470	17,600	2,770	24,840	-
SB-1 @ 10'	10'	7/25/2008	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	<16.2	<16.2	<16.2	-
SB-1 @ 20'	20'	7/25/2008	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.4	19.7	<16.4	19.7	-
SB-1 @ 30'	30'	7/25/2008	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.9	<15.9	<15.9	<15.9	-
SB-1 @ 40'	40'	7/25/2008	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	-
SB-2 @ 10'	10'	7/25/2008	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.4	<15.4	<15.4	<15.4	-
SB-2 @ 20'	20'	7/25/2008	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.0	<15.0	<15.0	<15.0	-
SB-2 @ 30'	30'	7/25/2008	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.5	<15.5	<15.5	<15.5	-
SB-3 @ 10'	10'	7/25/2008	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	-
SB-3 @ 20'	20'	7/25/2008	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.9	<15.9	<15.9	<15.9	-
SB-3 @ 30'	30'	7/25/2008	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.7	<15.7	<15.7	<15.7	-
SB-4 @ 10'	27'	7/25/2008	In-Situ	19.6	240	169	198	75.1	701	24,900	53,000	8,450	86,350	-
SB-4 @ 20'	37'	7/25/2008	In-Situ	2.72	110	130	172	83.4	498	23,400	53,900	7,870	85,170	-
SB-4 @ 30'	47'	7/25/2008	In-Situ	0.0609	0.4793	0.3975	0.4977	0.2369	1.67	67.2	876	127	1,070	-
SB-4 @ 40'	57'	7/25/2008	In-Situ	0.0104	0.0381	0.0240	0.0349	0.0208	0.1282	27.8	492	81.7	602	-
SB-4 @ 50'	67'	7/25/2008	In-Situ	0.0066	0.0191	0.0069	0.0078	0.0036	0.0440	<15.0	59.8	15.9	75.7	-
SB-4 @ 60'	77'	7/25/2008	In-Situ	0.0034	0.0116	0.0053	0.0071	0.0039	0.0313	<15.0	224	36.6	261	-
SB-4 @ 70'	87'	7/25/2008	In-Situ	0.0050	0.0755	0.0941	0.1263	0.0703	0.3712	43.3	801	133	977	-
SB-4 @ 80'	97'	7/25/2008	In-Situ	0.0018	0.0079	0.0145	0.0254	0.0149	0.0645	27.9	669	119	816	-
SB-4 @ 90'	107'	7/25/2008	In-Situ	<0.0011	0.0031	0.0016	0.0024	<0.0011	0.0071	<15.0	253	54.7	308	-
SB-4 @ 100'	117'	7/25/2008	In-Situ	<0.0011	0.0038	0.0071	0.0110	0.0068	0.0287	17.1	430	78.2	525	-
N-1 S/W	15'	10/23/2008	In-Situ	<0.0051	<0.0102	<0.0051	<0.0102	<0.0051	<0.0102	<15.2	<15.2	<15.2	<15.2	-
N-2 S/W	17'	10/23/2008	In-Situ	<0.0051	<0.0101	<0.0051	<0.0101	<0.0051	<0.0101	<15.2	<15.2	<15.2	<15.2	-
S-1 S/W	17'	10/23/2008	In-Situ	<0.0052	<0.0104	<0.0052	<0.0104	<0.0052	<0.0104	<15.6	<15.6	<15.6	<15.6	-
S-2 S/W	17'	10/23/2008	In-Situ	<0.0053	<0.0106	<0.0053	<0.0106	<0.0053	<0.0106	<15.9	<15.9	<15.9	<15.9	-
E-1 S/W	8'	10/23/2008	In-Situ	-	-	-	-	-	-	33.1	771	117	921	-
E-2 S/W	17'	10/23/2008	In-Situ	<0.0052	<0.0104	<0.0052	<0.0104	<0.0052	<0.0104	<15.6	21.8	21.9	43.7	-
W-1 S/W	8'	10/23/2008	In-Situ	-	-	-	-	-	-	16.6	1,160	279	1,456	-
W-2 S/W	17'	10/23/2008	In-Situ	-	-	-	-	-	-	<15.3	396	86.6	483	-
MW-1 @ 10'	10'	1/6/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	-
MW-1 @ 30'	30'	1/6/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.4	<15.4	<15.4	<15.4	-
MW-1 @ 50'	50'	1/6/2009	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.2	<15.2	<15.2	<15.2	-
MW-1 @ 70'	70'	1/6/2009	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.2	<15.2	<15.2	<15.2	-
MW-1 @ 90'	90'	1/6/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.4	<15.4	<15.4	<15.4	-
MW-1 @ 110'	110'	1/6/2009	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.1	36.0	<16.1	36.0	-
MW-1 @ 127'	127'	1/6/2009	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	17.7	<16.2	17.7	-

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030						METHOD: 8015M			TOTAL	E 300
				BENZENE (mg/Kg)	TOLUENE mg/Kg	ETHYL-BENZENE (mg/Kg)	M.P. - XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL BTEX	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)
MW-2 @ 10'	10'	1/7/2009	In-Situ	<0.0010	<0.0020	<0.0010	0.0020	<0.0010	<0.0020	<15.3	<15.3	<15.3	<15.3	-
MW-2 @ 30'	30'	1/7/2009	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.3	<15.3	<15.3	<15.3	-
MW-2 @ 50'	50'	1/7/2009	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.2	<15.2	<15.2	<15.2	-
MW-2 @ 70'	70'	1/7/2009	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.3	<15.3	<15.3	<15.3	-
MW-2 @ 95'	95'	1/7/2009	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	-
MW-2 @ 110'	110'	1/7/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	-
MW-2 @ 120'	120'	1/7/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.7	<15.7	<15.7	<15.7	-
MW-3 @ 10'	10'	1/8/2009	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.8	<15.8	<15.8	<15.8	-
MW-3 @ 35'	35'	1/8/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.4	<15.4	<15.4	<15.4	-
MW-3 @ 50'	50'	1/8/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	-
MW-3 @ 70'	70'	1/8/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	-
MW-3 @ 90'	90'	1/8/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.7	<15.7	<15.7	<15.7	-
MW-3 @ 110'	110'	1/8/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.5	<15.5	<15.5	<15.5	-
MW-3 @ 113'	113'	1/8/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	-
SB-5 @ 10'	27'	1/9/2009	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.6	<16.6	<16.6	<16.6	-
SB-5 @ 20'	37'	1/9/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.7	<15.7	<15.7	<15.7	-
SB-5 @ 30'	47'	1/9/2009	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	-
SB-5 @ 40'	57'	1/9/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	-
SB-5 @ 50'	67'	1/9/2009	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.9	<15.9	<15.9	<15.9	-
SB-5 @ 60'	77'	1/9/2009	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.4	<16.4	<16.4	<16.4	-
SP #1	N/A	6/17/2009	Stockpiled	<0.0010	<0.0020	0.0012	0.0056	0.0047	0.0115	56.8	603	63.7	724	-
SP #2	N/A	6/17/2009	Stockpiled	<0.0010	<0.0020	0.0012	0.0064	0.0051	0.0127	47.6	412	51.7	511	-
SP #3	N/A	6/17/2009	Stockpiled	<0.0510	4.36	6.69	14.3	7.84	33.2	731	2,540	267	3,538	-
SP #4	N/A	6/22/2009	Stockpiled	0.0213	0.4974	1.05	4.69	2.97	9.22	491	2,640	234	3,365	-
SP #5	N/A	6/22/2009	Stockpiled	<0.0207	1.01	1.55	5.47	3.00	11.0	494	2,480	212	3,186	-
SP #6	N/A	6/25/2009	Stockpiled	0.0068	0.1090	0.0334	0.1183	0.1528	0.4203	362	2,360	210	2,932	-
SP #7	N/A	6/25/2009	Stockpiled	0.0082	0.3025	0.1636	0.7755	0.4720	1.72	473	2,450	234	3,157	-
Over Burden-2	N/A	7/2/2009	N/A	0.0031	0.0466	0.0143	0.0381	0.0150	0.1171	50.9	66.1	<15.5	117	-
SP #8	N/A	7/2/2009	Stockpiled	<0.0011	0.0168	0.0084	0.0386	0.0274	0.0912	289	2,620	153	3,062	-
Over Burden-1	N/A	7/6/2009	N/A	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	16.7	<16.5	16.7	-
Over Burden-3	N/A	7/6/2009	N/A	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	22.6	<16.5	22.6	-
SVE Deep #2 @ 35'	35'	9/24/2009	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.3	<15.3	<15.3	<15.3	-
SVE Deep #2 @ 43'	43'	9/24/2009	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.1	<15.1	<15.1	<15.1	-
SVE Shallow "A" @ 20'	20'	9/24/2009	In-Situ	<0.0505	4.51	10.0	13.6	5.90	34.0	611	1,740	235	2,586	-
SVE Shallow "A" @ 25'	25'	9/24/2009	In-Situ	3.23	71.1	53.7	60.9	25.1	214	2,000	4,330	914	7,244	-
SVE Shallow "A" @ 30'	30'	9/24/2009	In-Situ	<0.0512	3.01	9.16	12.6	5.81	30.6	768	2,560	695	4,023	-

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030						METHOD: 8015M			TOTAL C ₆ -C ₃₅ (mg/Kg)	E 300 CHLORIDE (mg/Kg)
				BENZENE (mg/Kg)	TOLUENE mg/Kg	ETHYL-BENZENE (mg/Kg)	M.P. - XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL BTEX	GRO C ₆ -C ₁₂ (mg/Kg)	DRO C ₁₂ -C ₂₈ (mg/Kg)	ORO C ₂₈ -C ₃₅ (mg/Kg)		
SVE Shallow "B" @ 20'	20'	9/25/2009	In-Situ	0.0205	0.1283	0.0490	0.1109	0.0615	0.3702	49.5	367.0	67.9	484	-
SVE Shallow "B" @ 25'	25'	9/25/2009	In-Situ	0.0584	17.1	16.7	24.9	11.1	69.9	1,280	2,700	730	4,710	-
SVE Shallow "B" @ 30'	30'	9/25/2009	In-Situ	0.3639	17.1	23.1	30.9	12.1	83.6	1,160	2,700	730	4,590	-
SVE Deep #1 @ 35'	35'	9/25/2009	In-Situ	3.93	79.5	76.4	93.8	36.5	290	2,370	5,070	1,210	8,650	-
SVE Deep #1 @ 40'	40'	9/25/2009	In-Situ	5.11	100	81.5	96.1	40.2	323	3,050	5,610	1,370	10,030	-
SVE Deep #3 @ 35'	35'	9/25/2009	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.1	<15.1	<15.1	<15.1	-
SVE Deep #3 @ 40'	40'	9/25/2009	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.1	<15.1	<15.1	<15.1	-
SVE Deep #4 @ 35'	35'	9/25/2009	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.5	<15.5	<15.5	<15.5	-
SVE Deep #4 @ 40'	40'	9/25/2009	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.1	<15.1	<15.1	<15.1	-
SVE Deep #5 @ 35'	35'	9/25/2009	In-Situ	0.0051	0.0421	0.0196	0.0209	0.0085	0.0962	<15.3	<15.3	<15.3	<15.3	-
SVE Deep #5 @ 40'	40'	9/25/2009	In-Situ	0.0031	0.0251	0.0122	0.0127	0.0052	0.0583	<15.1	<15.1	<15.1	<15.1	-
SB-6 @ 20'	20'	1/28/2011	In-Situ	0.0069	0.0684	0.1594	0.2629	0.0490	0.5466	515	2,690	70.5	3,280	23.1
SB-6 @ 25'	25'	1/28/2011	In-Situ	<0.0011	0.0465	0.3581	3.65	0.2607	4.31	2,030	3,060	127	5,220	11.5
SB-6 @ 30'	30'	1/28/2011	In-Situ	0.0093	0.0623	0.1858	0.2929	0.0847	0.6350	1,270	3,750	178	5,200	12.6
SB-6 @ 35'	35'	1/28/2011	In-Situ	<0.0010	0.0042	0.0263	0.0398	0.0235	0.0938	113	920	27.4	1,060	10.6
SB-6 @ 40'	40'	1/28/2011	In-Situ	<0.0010	<0.0021	0.0121	0.0298	0.0232	0.0651	40.1	307	<15.4	347	9.38
SB-6 @ 45'	45'	1/28/2011	In-Situ	<0.0010	<0.0020	0.0163	0.0276	0.0173	0.0612	51.6	492	<15.3	544	10.9
SB-7 @ 22'	22'	1/28/2011	In-Situ	0.0096	0.2052	0.3484	0.4304	0.1863	1.18	584	4,020	94.3	4,700	11.2
SB-7 @ 27'	27'	1/28/2011	In-Situ	0.0011	0.0560	0.3173	2.91	2.82	2.11	3,270	8,960	215	12,400	9.54
SB-7 @ 32'	32'	1/28/2011	In-Situ	<0.0010	0.2217	0.9494	0.5347	0.2561	1.44	1,650	7,450	139	9,240	9.25
SB-7 @ 37'	37'	1/28/2011	In-Situ	<0.0010	0.0499	0.0864	0.1364	0.0871	0.3598	2,290	8,780	152	11,200	10.9
SB-7 @ 42'	42'	1/28/2011	In-Situ	<0.0010	0.0811	0.2919	0.5180	0.4076	1.30	2,460	8,590	192	11,200	8.93
SB-7 @ 47'	47'	1/28/2011	In-Situ	0.0018	1.11	8.01	12.2	7.60	6.51	3,510	9,660	220	13,400	9.52
SB-7 @ 52'	52'	1/28/2011	In-Situ	<0.0010	0.0265	0.0163	0.2199	0.0337	0.2964	2,960	7,950	145	11,100	11.3
SB-8 @ 20'	20'	1/20/2012	In-Situ	<0.0010	<0.0020	0.0097	0.0260	0.0128	0.0485	20.7	460	53.6	534	-
SB-8 @ 25'	25'	1/20/2012	In-Situ	0.0067	0.0325	0.5340	2.64	5.00	8.21	2,030	7,720	561	10,300	-
SB-8 @ 30'	30'	1/20/2012	In-Situ	0.0064	0.1920	0.7780	1.16	0.5610	2.70	1,250	10,300	947	12,500	-
SB-8 @ 35'	35'	1/20/2012	In-Situ	<0.0010	0.0091	0.0328	0.0750	0.0533	0.1700	1,750	9,360	608	11,700	-
SB-8 @ 40'	40'	1/20/2012	In-Situ	0.0058	0.0137	0.0426	0.1130	0.0731	0.2480	486	6,910	467	7,860	-
SB-8 @ 45'	45'	1/20/2012	In-Situ	0.0069	0.0801	0.3620	0.5780	0.2720	1.30	911	7,330	495	8,740	-
SB-8 @ 50'	50'	1/20/2012	In-Situ	<0.0207	0.2540	5.46	10.4	7.08	23.2	1,620	5,750	474	7,840	-
SB-8 @ 55'	55'	1/20/2012	In-Situ	<0.0209	0.2730	7.27	11.9	7.60	27.0	2,260	10,100	851	13,200	-
SB-8 @ 60'	60'	1/20/2012	In-Situ	<0.2680	4.65	22.3	30.8	15.1	72.9	2,270	6,990	427	9,690	-
SB-8 @ 65'	65'	1/20/2012	In-Situ	<0.0210	0.7980	7.91	11.8	2.60	23.1	1,960	9,610	709	12,300	-
SB-9 @ 20'	20'	1/23/2012	In-Situ	<0.0011	<0.0023	0.0014	0.0030	<0.0011	0.0044	33.3	1,160	155	1,350	-
SB-9 @ 35'	35'	1/23/2012	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<15.5	29.9	<15.5	29.9	-

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

PLAINS ALL AMERICAN PIPELINE, LP
 EK QUEEN PEARCE 6-INCH
 LEA COUNTY, NEW MEXICO
 PLAINS SRS #: 2008-113
 NMOCD REFERENCE #: 1RP-1853

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030						METHOD: 8015M			TOTAL	E 300
				BENZENE (mg/Kg)	TOLUENE mg/Kg	ETHYL-BENZENE (mg/Kg)	M.P. - XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL BTEX	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)
SB-10 @ 20'	20'	1/23/2012	In-Situ	<0.0010	<0.0020	0.0017	0.0029	<0.001	0.0046	49.8	1,050	124	1,220	-
SB-10 @ 25'	25'	1/23/2012	In-Situ	0.0070	<0.0107	0.0137	0.0307	0.0115	0.0629	492	6,010	445	6,950	-
SB-10 @ 30'	30'	1/23/2012	In-Situ	<0.0011	<0.0021	0.0018	0.0040	0.0014	0.0071	177	4,620	361	5,160	-
SB-10 @ 35'	35'	1/23/2012	In-Situ	<0.0011	<0.0021	0.0022	0.0037	0.0014	0.0071	<77.8	9,630	<77.8	10,300	-
SB-10 @ 40'	40'	1/23/2012	In-Situ	<0.0010	<0.0021	0.0020	0.0037	0.0015	0.0073	159	8,010	561	8,730	-
SB-10 @ 45'	45'	1/23/2012	In-Situ	<0.0011	<0.0021	0.0033	0.0060	0.0023	0.0116	175	5,190	407	5,770	-
SB-10 @ 50'	50'	1/23/2012	In-Situ	<0.0010	<0.0020	0.0023	0.0041	0.0018	0.0083	150	3,860	358	4,370	-
SB-10 @ 55'	55'	1/23/2012	In-Situ	<0.0011	<0.0021	<0.0011	0.0023	0.0015	0.0038	41.4	2,270	223	2,530	-
SB-10 @ 60'	60'	1/23/2012	In-Situ	<0.0010	<0.0020	0.0022	0.0039	0.0019	0.0080	29.7	910	91.8	1,030	-
MW-4 @ 10'	10'	12/11/2012	In-Situ	<0.0012	<0.0025	<0.0012	<0.0025	<0.0012	<0.0025	<18.2	<18.2	<18.2	<18.2	-
MW-4 @ 20'	20'	12/11/2012	In-Situ	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<17.0	<17.0	<17.0	<17.0	-
MW-4 @ 30'	30'	12/11/2012	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	<16.2	<16.2	<16.2	-
MW-4 @ 40'	40'	12/11/2012	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.9	<15.9	<15.9	<15.9	-
MW-4 @ 60'	60'	12/11/2012	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	<16.2	<16.2	<16.2	-
NMOCD Criteria				10					50				5,000	

**TABLE 2
SVE EMISSIONS**

**PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853**

SAMPLE NAME	SAMPLE DATE	METHODS: EPA 18M T104704215							EPA 18M
		BENZENE (ppmv)	TOLUENE (ppmv)	ETHYL- BENZENE (ppmv)	M,P- XYLENES (ppmv)	O-XYLENES (ppmv)	TOTAL XYLENE (ppmv)	TOTAL BTX (ppmv)	TPH GRO (ppmv)
SVE Discharge	04/07/2010	504	357	60.1	54.7	21.2	75.9	997	5150
SVE Discharge - 1	05/18/2010	106	215	42	51	19.3	70.3	433	5450
SVE Discharge - 2	07/26/2010	19	53.9	20.2	17.6	6.01	23.61	116.7	803
SVE Discharge - 3	08/30/2010	6.19	40.7	18.4	17.3	5.66	22.96	88.3	700
SVE Discharge - 4	09/23/2010	6.49	57.7	23.4	25.8	11	36.8	124.4	910
SVE Discharge - 5	11/18/2010	3.19	25.58	13	24.21	11.35	35.56	77.33	588
SVE Discharge - 6	12/09/2010	1.07	17.88	12.37	12.48	5.65	18.13	49.45	432
SVE Discharge - 7	01/27/2011	<1.00	10.2	8.75	8.67	3.57	12.24	31.19	284
SVE Discharge - 8	02/28/2011	<1.00	4.2	3.76	4.49	1.94	6.43	14.40	124
SVE Discharge - 9	04/12/2011	<1.00	7.69	6.31	4.91	2.85	7.76	21.8	186
SVE Discharge - 10	05/12/2011	<1.00	3.45	2.24	<2.00	<1.00	0.00	5.69	<100
SVE Discharge - 11	06/28/2011	<1.00	1.97	2.62	2.93	1.31	4.24	8.83	<100
SVE Discharge - 12	08/05/2011	<1.00	1.01	1.35	2.05	<1.00	2.05	4.41	101
SVE Discharge - 13	09/08/2011	<1.00	1.75	2.00	<2.00	<1.00	0.00	3.75	<100
SVE Discharge - 14	10/10/2011	<1.00	1.88	2.45	2.82	4.78	7.60	11.90	<100
SVE Discharge - 15	11/30/2011	<1.00	1.12	1.28	<2.00	<1.00	0.00	2.40	<100
SVE Discharge - 16	12/14/2011	<1.00	<1.00	1.00	<2.00	<1.00	0.00	1.00	<100
SVE Discharge - 17	01/05/2012	<1.00	<1.00	1.18	<2.00	<1.00	<2.00	1.18	<100
SVE Discharge - 18	02/07/2012	<0.314	0.486	0.723	0.425	0.445	0.870	2.08	36.6
SVE Discharge - 19	03/01/2012	<0.314	0.427	0.714	0.442	0.417	0.859	2.00	<24.5
SVE Discharge - 20	04/12/2012	<0.314	0.281	0.468	0.280	0.265	0.545	1.29	<24.5
SVE Discharge - 21	05/02/2012	<0.314	1.25	0.806	0.667	0.606	1.27	3.33	91.7
SVE Discharge - 22	06/20/2012	<0.314	0.361	0.597	0.394	0.415	0.81	1.77	<24.5
SVE Discharge - 23	10/15/2012	<0.314	0.690	0.650	0.590	0.548	1.14	2.48	30.6
SVE Discharge - 24	11/05/2012	<0.314	<0.531	0.449	0.276	0.283	0.559	1.01	<24.5
SVE Discharge - 25	01/29/2013	<0.314	<0.265	0.449	0.321	0.290	0.611	1.06	24.5
SVE Discharge - 26	02/28/2013	<0.314	<0.265	0.251	<0.230	<0.230	<0.230	<0.230	27.3

TABLE 3
CONCENTRATIONS OF BENZENE, BTEX, CHLORIDE & TOTAL DISSOLVED SOLIDS IN GROUNDWATER

PLAINS ALL AMERICAN PIPELINE, LP
 EK QUEEN PEARCE 6-INCH
 LEA COUNTY, NEW MEXICO
 PLAINS SRS #: 2008-113
 NMOCD REFERENCE #: 1RP-1853

SAMPLE LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021B, 5030						TOTAL BTEX (mg/L)	CHLORIDE (mg/L)	TDS (mg/L)
		BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P-XYLENES (mg/L)	O-XYLENES (mg/L)	TOTAL XYLENE (mg/L)			
Prelim GW (SB-4)	07/25/2008	0.0016	0.008	0.0074	0.0091	0.0049	0.014	0.031	-	-
MW-1	01/20/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	200	528
	06/15/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	09/15/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	11/19/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/21/2010	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	11/02/2010	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/05/2011	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	10/26/2011	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/02/2012	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	10/12/2012	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/03/2013	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	11/15/2013	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/07/2014	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
MW-2	01/20/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	206	572
	06/15/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	09/15/2009	0.0020	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0020	-	-
	11/19/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/21/2010	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	11/02/2010	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/05/2011	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	10/26/2011	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/02/2012	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	10/12/2012	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/03/2013	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	11/15/2013	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/07/2014	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
MW-3	01/20/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	126	378
	06/15/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	09/15/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	11/19/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/21/2010	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	11/02/2010	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/05/2011	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	10/26/2011	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/02/2012	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	10/12/2012	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/03/2013	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	11/15/2013	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/07/2014	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
MW-4	12/18/2012	<0.0050	<0.0050	<0.0050	<0.0050	<0.0100	<0.0100	<0.0100	402	-
	02/01/2013	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/03/2013	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	08/13/2013	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	11/15/2013	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	02/10/2014	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	05/07/2014	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
	08/06/2014	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-	-
NMOCD CRITERIA		0.01	0.75	0.75	TOTAL XYLENES 0.62				250	10,000

**TABLE 4
GROUNDWATER ELEVATION DATA**

**PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853**

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW-1	01/20/2009	4,028.12	-	120.63	-	3,907.49
	06/15/2009	4,028.12	-	120.6	-	3,907.52
	09/16/2009	4,028.12	-	120.71	-	3,907.41
	11/19/2009	4,028.12	-	120.67	-	3,907.45
	03/11/2010	4,028.12	-	121.01	-	3,907.11
	05/21/2010	4,028.12	-	120.87	-	3,907.25
	11/02/2010	4,028.12	-	120.75	-	3,907.37
	05/05/2011	4,028.12	-	121.26	-	3,906.86
	10/26/2011	4,028.12	-	121.64	-	3,906.48
	05/02/2012	4,028.12	-	121.55	-	3,906.57
	08/10/2012	4,028.12	-	121.57	-	3,906.55
	10/12/2012	4,028.12	-	121.60	-	3,906.52
	02/01/2013	4,028.12	-	121.75	-	3,906.37
	05/03/2013	4,028.12	-	121.90	-	3,906.22
	09/25/2013	4,028.12	-	121.86	-	3,906.26
	11/15/2013	4,028.12	-	121.61	-	3,906.51
	02/10/2014	4,028.12	-	122.12	-	3,906.00
	05/06/2014	4,028.12	-	121.95	-	3,906.17
	08/06/2014	4,028.12	-	122.19	-	3,905.93
MW-2	01/20/2009	4,024.41	-	116.18	-	3,908.23
	06/15/2009	4,024.41	-	116.27	-	3,908.14
	09/16/2009	4,024.41	-	116.29	-	3,908.12
	11/19/2009	4,024.41	-	116.27	-	3,908.14
	03/11/2010	4,024.41	-	116.68	-	3,907.73
	05/21/2010	4,024.41	-	116.45	-	3,907.96
	11/02/2010	4,024.41	-	116.36	-	3,908.05
	05/05/2011	4,024.41	-	116.80	-	3,907.61
	10/26/2011	4,024.41	-	117.33	-	3,907.08
	05/02/2012	4,024.41	-	117.15	-	3,907.26
	08/10/2012	4,024.41	-	117.17	-	3,907.24
	10/12/2012	4,024.41	-	117.18	-	3,907.23
	02/01/2013	4,024.41	-	117.36	-	3,907.05
	05/03/2013	4,024.41	-	117.65	-	3,906.76
	09/25/2013	4,024.41	-	117.47	-	3,906.94
	11/15/2013	4,024.41	-	117.22	-	3,907.19
	02/10/2014	4,024.41	-	117.71	-	3,906.70
	05/06/2014	4,024.41	-	117.49	-	3,906.92
	08/06/2014	4,024.41	-	117.73	-	3,906.68

**TABLE 4
GROUNDWATER ELEVATION DATA**

**PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853**

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW-3	01/20/2009	4,015.28	-	107.04	-	3,908.24
	06/15/2009	4,015.28	-	107.09	-	3,908.19
	09/16/2009	4,015.28	-	107.22	-	3,908.06
	11/19/2009	4,015.28	-	107.21	-	3,908.07
	03/11/2010	4,015.28	-	107.64	-	3,907.64
	05/21/2010	4,015.28	-	107.41	-	3,907.87
	11/02/2010	4,015.28	-	107.27	-	3,908.01
	05/05/2011	4,015.28	-	107.85	-	3,907.43
	10/26/2011	4,015.28	-	108.24	-	3,907.04
	05/02/2012	4,015.28	-	108.10	-	3,907.18
	08/10/2012	4,015.28	-	108.10	-	3,907.18
	10/12/2012	4,015.28	-	108.10	-	3,907.18
	02/01/2013	4,015.28	-	108.26	-	3,907.02
	05/03/2013	4,015.28	-	108.54	-	3,906.74
	09/25/2013	4,015.28	-	108.35	-	3,906.93
	11/15/2013	4,015.28	-	108.18	-	3,907.10
	02/10/2014	4,015.28	-	108.63	-	3,906.65
	05/06/2014	4,015.28	-	108.45	-	3,906.83
	08/06/2014	4,015.28	-	108.69	-	3,906.59
MW-4	12/18/2012	4,024.22	-	116.97	-	3,907.25
	02/01/2013	4,024.22	-	116.99	-	3,907.23
	05/03/2013	4,024.22	-	117.20	-	3,907.02
	09/25/2013	4,024.22	-	117.09	-	3,907.13
	11/15/2013	4,024.22	-	116.86	-	3,907.36
	02/10/2014	4,024.22	-	117.35	-	3,906.87
	05/06/2014	4,024.22	-	117.12	-	3,907.10
	08/06/2014	4,024.22	-	117.38	-	3,906.84

Elevations based on the North American Vertical Datum of 1988

- = Not applicable

TABLE 5
CONCENTRATIONS OF RCRA & NMWQCC METALS IN GROUNDWATER

PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS REFERENCE #: 2008-113
NMOCD REFERENCE #: 1RP-1853

All concentrations are reported in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA Methods 200.7, 200.8, 245.1																
		Aluminum	Arsenic	Barium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Molybdenum	Nickel	Selenium	Silver	Zinc	Mercury
MW-4	12/18/2012	15.2	0.0133	1.06	0.0800	<0.0010	0.0090	0.0082	0.0052	11.0	0.0153	1.71	0.0024	0.0098	0.0061	<0.0010	0.0263	<0.0002
Maximum Contaminant Levels from NM WQCC Drinking water standards Sections 1-101.UU and 3-103.A.		5.0 mg/L	0.1 mg/L	1.0 mg/L	0.75 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	1.0 mg/L	1.0 mg/L	0.05 mg/L	0.2 mg/L	1.0 mg/L	0.2 mg/L	0.05 mg/L	0.05 mg/L	10.0 mg/L	0.002 mg/L

TABLE 6
CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853

All concentrations are reported in mg/L

Date Sampled	Sample Location	EPA Method SW-846 8260B														
		Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	2-Butanone	MTBE	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
12/18/2012	MW-4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01
Maximum Contaminant Levels from NMWQCC Drinking water standards Sections 1-101.UU and 3-103.A.		0.01 mg/L	.	.	.	.	.	.	.	.	.	.	.	0.01 mg/L	.	.

TABLE 6
CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853

All concentrations are reported in mg/L

Date Sampled	Sample Location	EPA Method SW-846 8260B																	
		2-Chloroethyl vinyl ether	Chloroform	Chloromethane	2-Chlorotoluene	4-Chlorotoluene	p-Cymene(p-Isopropyltoluene)	Dibromochloromethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane (EDB)	Dibromomethane (methylene bromide)	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene
12/18/2012	MW-4	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Maximum Contaminant Levels from NMWQCC Drinking water standards Sections 1-101.UU and 3-103.A.		-	0.1mg/L	-	-	-	-	-	-	0.0001 mg/L	-	-	-	-	-	0.005 mg/L	0.01 mg/L	0.005 mg/L	0.1mg/L

TABLE 6
CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853

All concentrations are reported in mg/L

Date Sampled	Sample Location	EPA Method SW-846 8260B																
		trans-1,2-Dichloroethene	1,2-Dichloropropane	1,3-Dichloropropane	2,2-Dichloropropane	1,1-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	Hexachlorobutadiene	2-Hexanone	Isopropylbenzene	Methylene chloride	4-Methyl-2-pentanone (MIBK)	Naphthalene	n-Propylbenzene	Styrene	1,1,1,2-Tetrachloroethane
12/18/2012	MW-4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	<0.005
Maximum Contaminant Levels from NMWQCC Drinking water standards Sections 1-101.UU and 3-103.A.		.	.	.	.	.	.	.	0.75 mg/L	.	.	.	0.1mg/L	.	0.03 mg/L	.	.	.

TABLE 6
CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853

All concentrations are reported in mg/L

Date Sampled	Sample Location	EPA Method SW-846 8260B														
		1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene (TCE)	Trichlorofluoromethane	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	o-Xylene	m,p-Xylene	Vinyl Chloride
12/18/2012	MW-4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.0020
Maximum Contaminant Levels from NMWQCC Drinking water standards Sections 1-101.UU and 3-103.A.		0.02 mg/L	-	0.75 mg/L	-	-	0.06 mg/L	-	0.01 mg/L	-	-	-	-	Total Xylene 0.62 mg/L		0.001 mg/L

**TABLE 7
CONCENTRATIONS OF SEMI-VOLATILE COMPOUNDS IN GROUNDWATER**

**PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853**

All concentrations are reported in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA Method SW846-8270C															
		Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene
MW-4	12/18/2012	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

TABLE 8
CONCENTRATIONS OF ANIONS & CATIONS IN GROUNDWATER

PLAINS ALL AMERICAN PIPELINE, LP
EK QUEEN PEARCE 6-INCH
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2008-113
NMOCD REFERENCE #: 1RP-1853

All concentrations are reported in mg/L

SAMPLE DATE	SAMPLE LOCATION	EPA Methods 200.7, 300/300.1, SM2320B										
		Bicarbonate	Calcium	Carbonate	Chloride	Flouride	Magnesium	Nitrate	Phosphate	Potassium	Sodium	Sulfate
12/18/2012	MW-4	172	272	<4.00	402	0.876	16.4	2.77	4.87	5.87	201	46.2
Maximum Contaminant Levels from NM WQCC Drinking water standards Sections 1-101.UU and 3- 103.A.		.	.	.	250 mg/L	1.6 mg/L	.	10.0 mg/L	.	.	.	600 mg/L

Appendices

Appendix A

Photographs



EK Queen Pearce 6-Inch - Release Site



EK Queen Pearce 6-Inch - Release Site



EK Queen Pearce 6-Inch – Release Site



EK Queen Pearce 6-Inch – Release Site



EK Queen Pearce 6-Inch – Release Site



EK Queen Pearce 6-Inch – Excavation (Looking North)



EK Queen Pearce 6-Inch – Excavation (Looking Southeast)



EK Queen Pearce 6-Inch – Excavation (Looking Southeast)



EK Queen Pearce 6-Inch – Excavation



EK Queen Pearce 6-Inch – Excavation (Looking East)



EK Queen Pearce 6-Inch – Excavation (Looking South)



EK Queen Pearce 6-Inch – Excavation (Looking North)



EK Queen Pearce 6-Inch – Installation of Monitor Well MW-3



EK Queen Pearce 6-Inch – Liner Installation



EK Queen Pearce 6-Inch - Liner Installation



EK Queen Pearce 6-Inch - Liner Installation



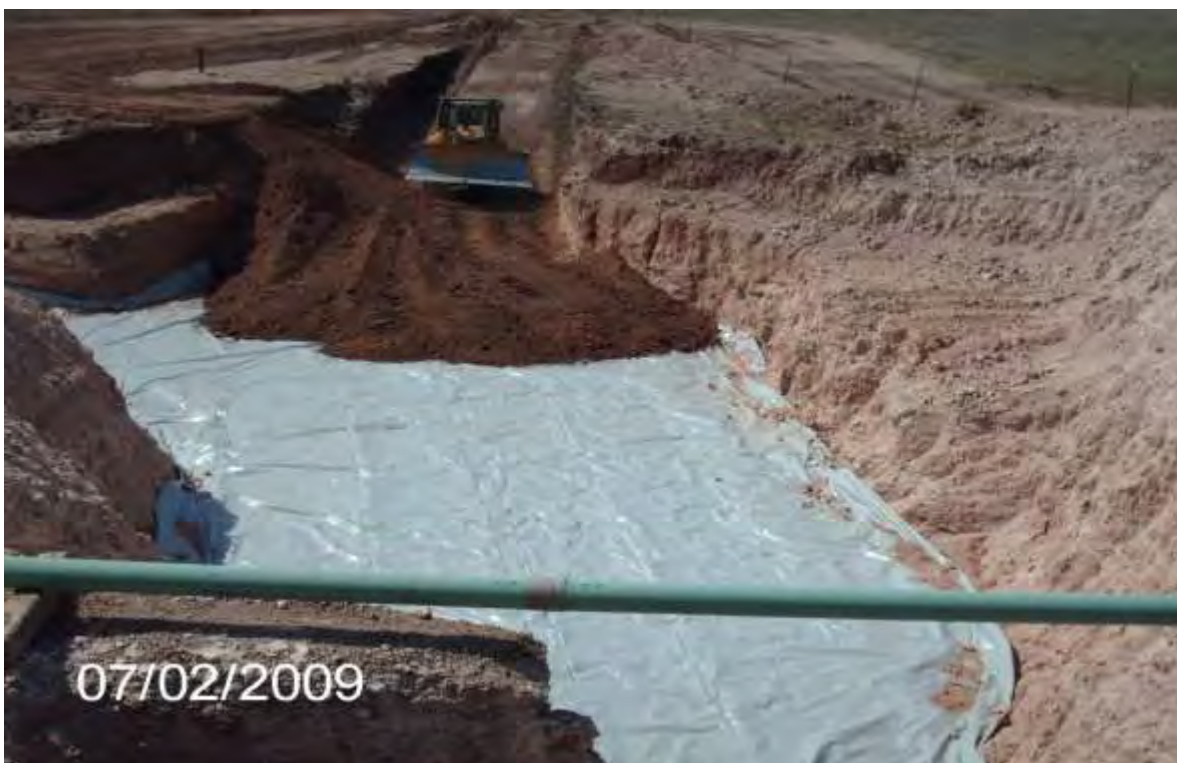
EK Queen Pearce 6-Inch - Liner Installation



EK Queen Pearce 6-Inch - Liner Installation



EK Queen Pearce 6-Inch – Liner Installation



EK Queen Pearce 6-Inch – Pad Sand Installation



EK Queen Pearce 6-Inch – Pad Sand Installation & Backfilling



EK Queen Pearce 6-Inch - Backfilling



EK Queen Pearce 6-Inch - Backfilling



EK Queen Pearce 6-Inch - Backfilling



EK Queen Pearce 6-Inch - Backfilling



EK Queen Pearce 6-Inch – Backfilling (Near Completion, Looking South)



EK Queen Pearce 6-Inch – Backfilling (Near Completion, Looking East)



EK Queen Pearce 6-Inch – 2009 Seeding (Looking South)



EK Queen Pearce 6-Inch – 2009 Seeding
(Looking Northwest; Monitor Well MW-1 & Erosion Control System Visible in Background)



EK Queen Pearce 6-Inch – Backfilled Excavation
(Following 2009 Seeding Event; Monitor Well MW-3 Visible in Background)



EK Queen Pearce 6-Inch – Backfilled Excavation
(Following Seeding; Monitor Well MW-1 & Erosion Control System Visible in Background)



EK Queen Pearce 6-Inch – SVE System Housing & Extraction Wells



EK Queen Pearce 6-Inch – SVE Wells & System Piping (Looking Southwest)



EK Queen Pearce 6-Inch – 2010 Seeding
(Looking Southeast; SVE Wells & Monitor Well MW-3 visible in Background)



EK Queen Pearce 6-Inch – 2010 Seeding
(Monitor Well MW-1 & Erosion Control System Visible in Background)



EK Queen Pearce 6-Inch – Advancement of Soil Boring SB-8



EK Queen Pearce 6-Inch – Installation of Monitor Well MW-4



EK Queen Pearce 6-Inch – SVE System Removal



EK Queen Pearce 6-Inch – Site Following SVE System Removal

Appendix B

Soil Boring & Monitor Well Logs

Monitor Well MW-1

Monitor Well MW-1

Drilling Depth Columns Soil PID Reading Petroleum Odor Petroleum Stain

Soil Description

Date Drilled January 6, 2009
Thickness of Bentonite Seal 139 Ft
Depth of Exploratory Boring 139 Ft bgs
Depth to Groundwater 126 Ft
Ground Water Elevation

Indicates the PSH level measured on
Indicates the groundwater level measured on January 6, 2009
Indicates samples selected for Laboratory Analysis.
PID Head-space reading in ppm obtained with a photo-ionization detector.

Grout Surface Seal
Bentonite Pellet Seal
Sand Pack
Screen

Completion Notes

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

Drilling Depth Columns	Soil	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0			None	None	0 - 10' bgs - Caliche, white, dry
5		1.3	None	None	
10		1.2	None	None	10 - 12' bgs - Caliche, white, dry
15		1.3	None	None	
20		1.1	None	None	12 - 25' bgs - Sand, tan with caliche nodules, dry
25		1.6	None	None	
30		1.4	None	None	25 - 32' bgs - Sand, white - tan caliche nodules, silicious
35		1.3	None	None	32 - 34' bgs - Sandstone, hard, dry, silicious
40		1.5	None	None	34 - 36' bgs - Sand, tan, very fine grained
45		1.3	None	None	36 - 40' bgs - Sandstone, hard, dry, silicious
50		1.2	None	None	
55		1.4	None	None	40 - 70' bgs - Sand, brown, very fine grained, dry with caliche nodules
60		1.5	None	None	
65		1.2	None	None	
70		1.5	None	None	
75		1.4	None	None	70 - 80' bgs - Sand, brown, very fine grained, damp with caliche nodules
80		1.1	None	None	
85		1.7	None	None	
90		1.8	None	None	80 - 95' bgs - Sand, brown with clay and sandstone nodules, damp
95		1.5	None	None	
100		1.6	None	None	95 - 100 bgs - Clay, brown, sandy, damp
105		1.6	None	None	
110		2.1	None	None	
115		2.4	None	None	100 - 127 bgs - Clay, brown with Sandstone nodules, damp
120		2.2	None	None	
125		2.2	None	None	
130		2.6	None	None	
135					127 - 139 bgs - Clay, brown, sandy
139					

Monitor Well Details
MW-1

E.K. Queen 6-Inch Pearce
Lea County, New Mexico
Plains Marketing, L.P.

Basin Environmental Services

Prep By: CDS

Checked By: CDS

November 17, 2008

Monitor Well MW-2

Monitor Well MW-2

Drilling Depth Columns PID Reading Petroleum Odor Petroleum Stain

Soil Description

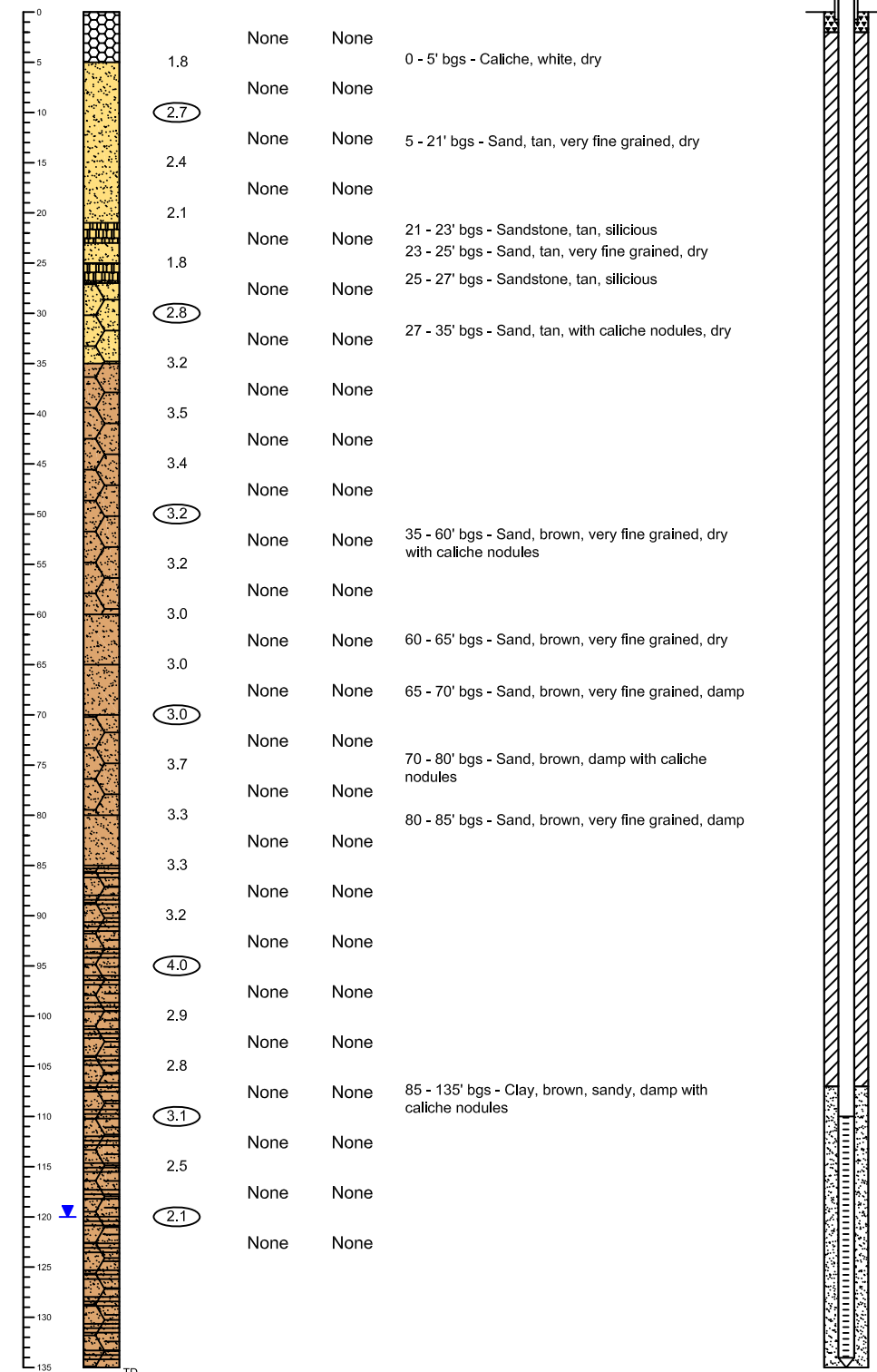
Date Drilled January 6, 2009
 Thickness of Bentonite Seal 135 Ft
 Depth of Exploratory Boring 135 Ft bgs
 Depth to Groundwater 120 Ft
 Ground Water Elevation

Indicates the PSH level measured on
 Indicates the groundwater level measured on January 6, 2009
 Indicates samples selected for Laboratory Analysis.
 PID Head-space reading in ppm obtained with a photo-ionization detector.

Grout Surface Seal
 Bentonite Pellet Seal
 Sand Pack
 Screen

Completion Notes

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



Monitor Well Details
 MW-2

E.K. Queen 6-Inch Pearce
 Lea County, New Mexico
 Plains Marketing, L.P.

Basin Environmental Services

Prep By: CDS

Checked By: CDS

November 17, 2008

Monitor Well MW-3

Monitor Well MW-3

Drilling Depth Columns PID Reading Petroleum Odor Petroleum Stain

Soil Description

0					0 - 5' bgs - Clay, dark brown with caliche nodules and some organic material, dry
5		3.0	None	None	
10		2.9	None	None	5 - 10' bgs - Clay, brown, silty with caliche nodules, dry
15		2.5	None	None	10 - 15' bgs - Sand, brown, very fine grained with caliche nodules, dry
20		2.6	None	None	15 - 25' bgs - Sand, brown, very fine grained, damp
25		2.3	None	None	
30		3.0	None	None	25 - 27' bgs - Caliche, white, hard
35		4.3	None	None	
40		3.3	None	None	
45		2.3	None	None	27 - 60' bgs - Sand, brown with caliche nodules, damp
50		2.2	None	None	
55		2.6	None	None	
60		3.0	None	None	
65		2.3	None	None	
70		2.0	None	None	
75		1.9	None	None	
80		1.7	None	None	
85		1.8	None	None	
90		2.9	None	None	60 - 126' bgs - Sand, brown, very fine grained, damp
95		2.2	None	None	
100		1.6	None	None	
105		2.4	None	None	
110		3.4	None	None	
115		3.6	None	None	
120					
125					

Date Drilled January 8, 2009
 Thickness of Bentonite Seal 126 Ft
 Depth of Exploratory Boring 126 Ft bgs
 Depth to Groundwater 106 Ft
 Ground Water Elevation

Indicates the PSH level measured on
 Indicates the groundwater level measured on January 9, 2009
 Indicates samples selected for Laboratory Analysis.
 PID Head-space reading in ppm obtained with a photo-ionization detector.

Grout Surface Seal
 Bentonite Pellet Seal
 Sand Pack
 Screen

Completion Notes

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

Monitor Well Details
MW-3

E.K. Queen 6-Inch Pearce
Lea County, New Mexico
Plains Marketing, L.P.

Basin Environmental Services

Prep By: CDS

Checked By: CDS

March 9, 2009

Monitor Well MW-4

Monitor Well MW-4

Drilling Depth	Soil Columns	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0			None	None	0' - 1' bgs - Brown silty sand with clay
5		3.3	None	None	1' - 3' bgs - Tan fine sand, soft sandstone
10		6.6	None	None	3' - 8' bgs - Tan fine sand, caliche, calcified hard sandstone
15		0.5	None	None	8' - 16' bgs - Tan fine sand, sandstone
20		4.9	None	None	16' - 25' bgs - Tan very fine sand, soft sandstone
25		2.5	None	None	25' - 27' bgs - Red siliceous sandstone
30		4.9	None	None	27' - 28' bgs - Tan fine sand
35		2.2	None	None	28' - 33' bgs - Pale tan fine sand, sandstone
40		7.4	None	None	
45		5.0	None	None	
50		2.8	None	None	
55		3.0	None	None	
60		4.2	None	None	
65		3.3	None	None	
70		0.4	None	None	
75			None	None	
80			None	None	
85			None	None	33' - 140' bgs - Reddish tan very fine sand (damp)
90			None	None	
95			None	None	
100			None	None	
105			None	None	
110			None	None	
115			None	None	
120			None	None	
125					
130					
135					
140					

Date Drilled December 11, 2012
 Thickness of Bentonite Seal 97 Ft
 Depth of Exploratory Boring 140 Ft bgs
 Depth to Groundwater 117 Ft
 Ground Water Elevation

- ▼ Indicates the PSH level measured on
- ▼ Indicates the groundwater level measured on January 6, 2009
- Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.

- ▽ Grout Surface Seal
- ▨ Bentonite Pellet Seal
- ▤ Sand Pack
- ▧ Screen

Completion Notes

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

Monitor Well Details
MW-4

EK Queen Pearce 6-Inch
Lea County, New Mexico
Plains Marketing, LP

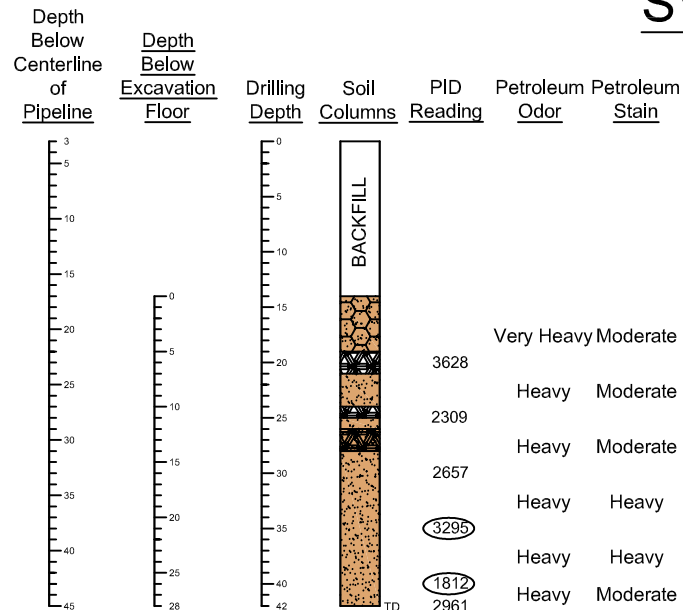
Basin Environmental Service Technologies, LLC

Prep By: BJA

Checked By: BRB

November 17, 2014

SVE Deep #1 Well



Soil Description

0 - 14' - Backfill material - Not Sampled

14 - 19' - Sand, brown, very fine grained, caliche, gray

19 - 21' - Chert, white to rose, very hard

21 - 24' - Sand, brown, very fine grained

24 - 25' - Chert, white to rose, very hard

25 - 26' - Sand, brown, very fine grained

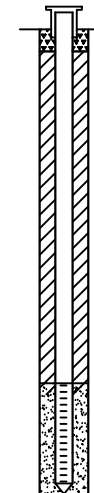
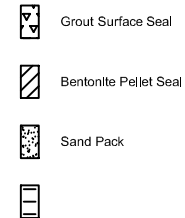
26 - 28' - Chert, white to rose, very hard with some sand layers

28 - 42' - Sand, brown, very fine grained

SVE Deep #1 Well

Date Drilled: September 25, 2009
 Thickness of Bentonite Seal: 30 Ft
 Depth of Exploratory Boring: 42 Ft bgs
 Depth to Groundwater: _____
 Ground Water Elevation: _____

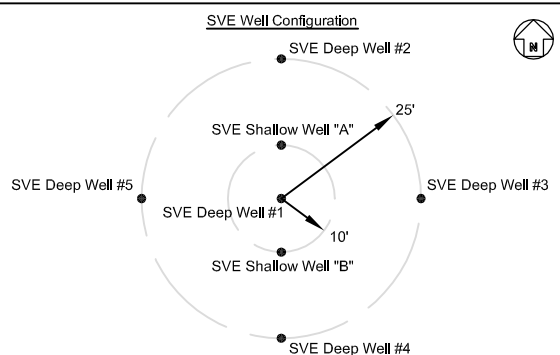
▼ Indicates the PSH level measured on _____
 ▼ Indicates the groundwater level measured on _____
 ○ Indicates samples selected for Laboratory Analysis.
 PID Head-space reading in ppm obtained with a photo-ionization detector.



Completion Notes

Screen

- 1.) The monitor well was advanced on date using air rotary drilling techniques.
- 2.) The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- 3.) The well is protected with a locked stick up steel cover and compression cap.
- 4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
- 3.) The depths indicated are referenced from ground surface.

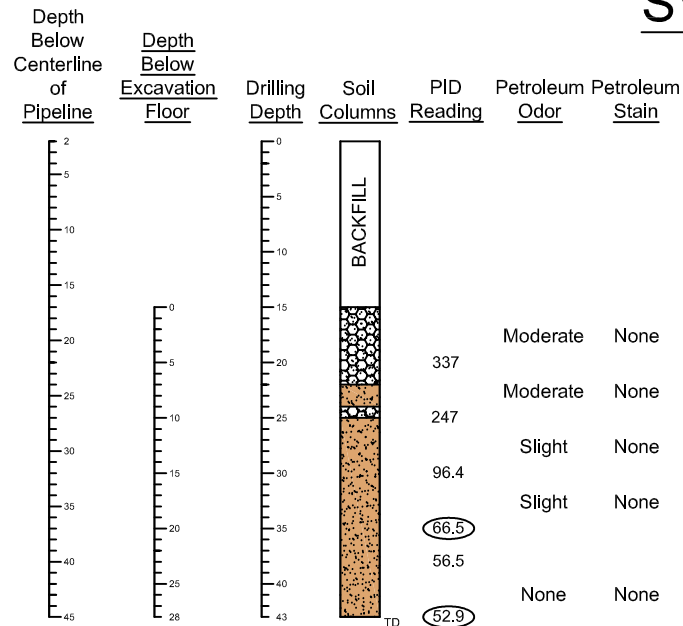


SVE Deep #1 Well
 E.K. Queen Pearce 6-Inch
 Lea County, New Mexico
 Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS	Checked By: CDS
October 7, 2009	

SVE Deep #2 Well



Soil Description

0 - 15' - Backfill material - Not Sampled

15 - 22' - Caliche, white, hard, dry, sandy

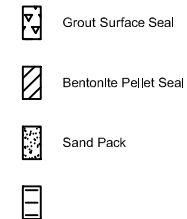
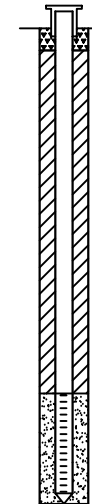
22 - 24' - Sand, brown, very fine grained
24 - 25' - Caliche, white, hard, dry, sandy

25 - 43' - Sand, brown, very fine grained

SVE Deep #2 Well

Date Drilled: September 24, 2009
Thickness of Bentonite Seal: 31 Ft
Depth of Exploratory Boring: 43 Ft bgs
Depth to Groundwater: _____
Ground Water Elevation: _____

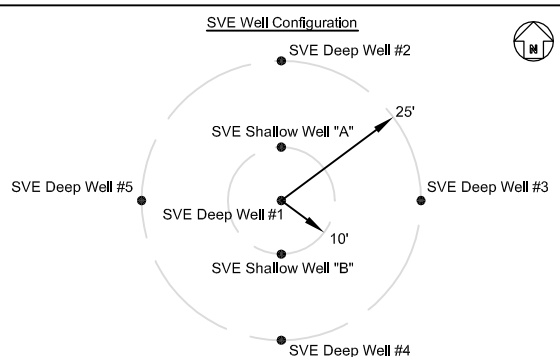
▼ Indicates the PSH level measured on _____
▼ Indicates the groundwater level measured on _____
○ Indicates samples selected for Laboratory Analysis.
PID Head-space reading in ppm obtained with a photo-ionization detector.



Completion Notes

Screen

- 1.) The monitor well was advanced on date using air rotary drilling techniques.
- 2.) The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- 3.) The well is protected with a locked stick up steel cover and compression cap.
- 4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
- 3.) The depths indicated are referenced from ground surface.

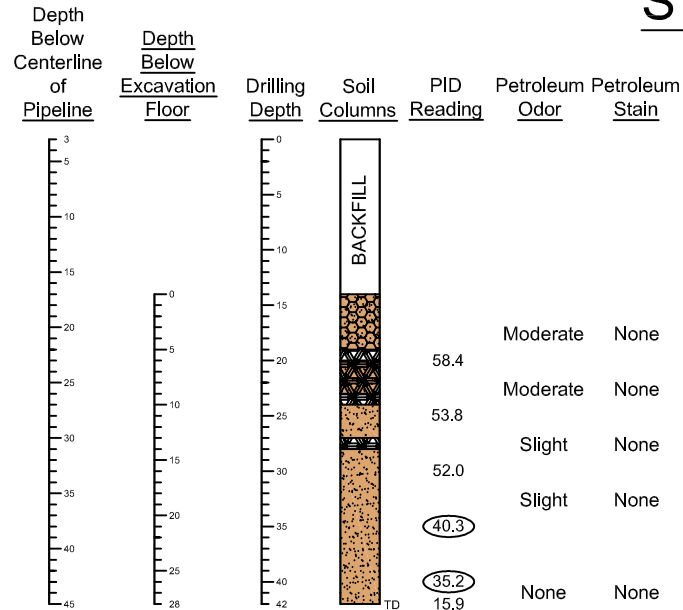


SVE Deep #2 Well
E.K. Queen Pearce 6-Inch
Lea County, New Mexico
Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS	Checked By: CDS
October 7, 2009	

SVE Deep #3 Well



Soil Description

0 - 14' - Backfill material - Not Sampled

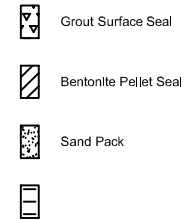
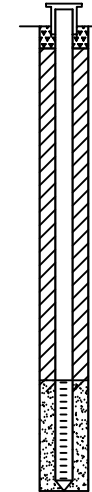
14 - 19' - Sand, brown, very fine grained, Caliche, white
 19 - 20' - Chert, white to rose, very hard
 20 - 23' - Sand, brown, very fine grained with some chert fragments
 23 - 24' - Chert, white to rose, very hard
 24 - 27' - Sand, brown, very fine grained
 27 - 28' - Chert, white to rose, very hard

28 - 42' - Sand, brown, very fine grained

SVE Deep #3 Well

Date Drilled: September 25, 2009
 Thickness of Bentonite Seal: 30 Ft
 Depth of Exploratory Boring: 42 Ft bgs
 Depth to Groundwater: _____
 Ground Water Elevation: _____

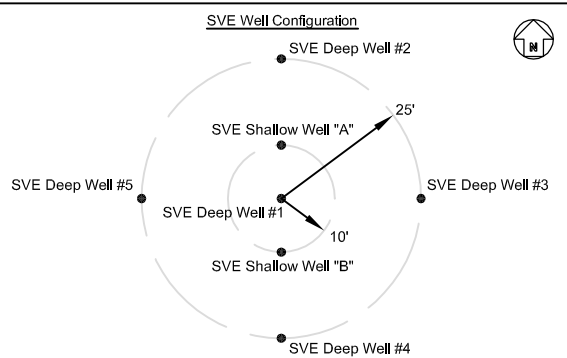
▼ Indicates the PSH level measured on _____
 ▼ Indicates the groundwater level measured on _____
 ○ Indicates samples selected for Laboratory Analysis.
 PID Head-space reading in ppm obtained with a photo-ionization detector.



Completion Notes

Screen

- 1.) The monitor well was advanced on date using air rotary drilling techniques.
- 2.) The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- 3.) The well is protected with a locked stick up steel cover and compression cap.
- 4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
- 3.) The depths indicated are referenced from ground surface.

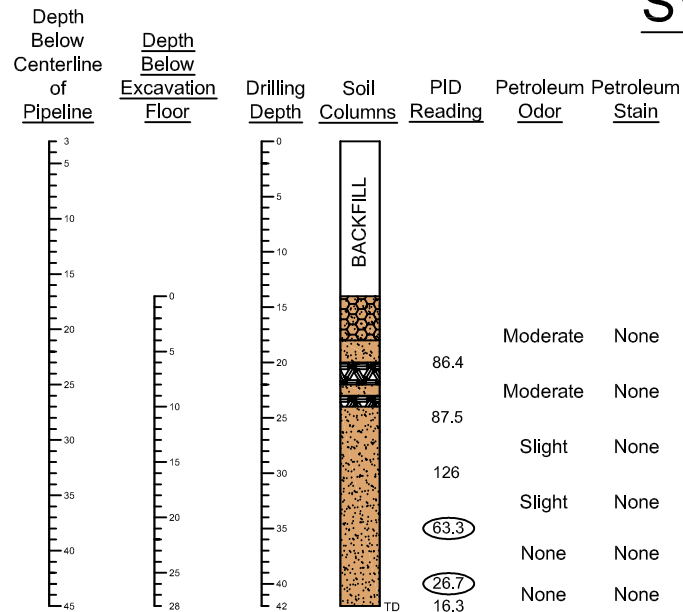


SVE Deep #3 Well
 E.K. Queen Pearce 6-Inch
 Lea County, New Mexico
 Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS	Checked By: CDS
October 7, 2009	

SVE Deep #4 Well



Soil Description

0 - 14' - Backfill material - Not Sampled

14 - 18' - Sand, brown, very fine grained, Caliche, white

18 - 20' - Sand, brown, very fine grained

20 - 22' - Chert, white to rose, very hard

22 - 23' - Sand, brown, very fine grained

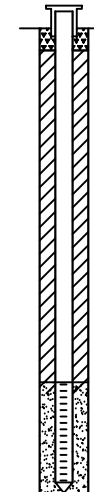
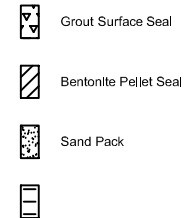
23 - 24' - Chert, white to rose, very hard

24 - 42' - Sand, brown, very fine grained

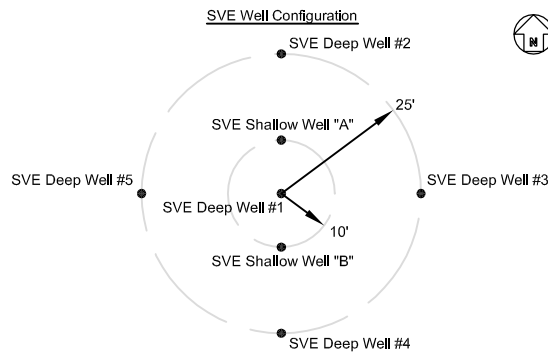
SVE Deep #4 Well

Date Drilled September 25, 2009
 Thickness of Bentonite Seal 30 Ft
 Depth of Exploratory Boring 42 Ft bgs
 Depth to Groundwater _____
 Ground Water Elevation _____

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



SVE Well Configuration



Completion Notes

Screen

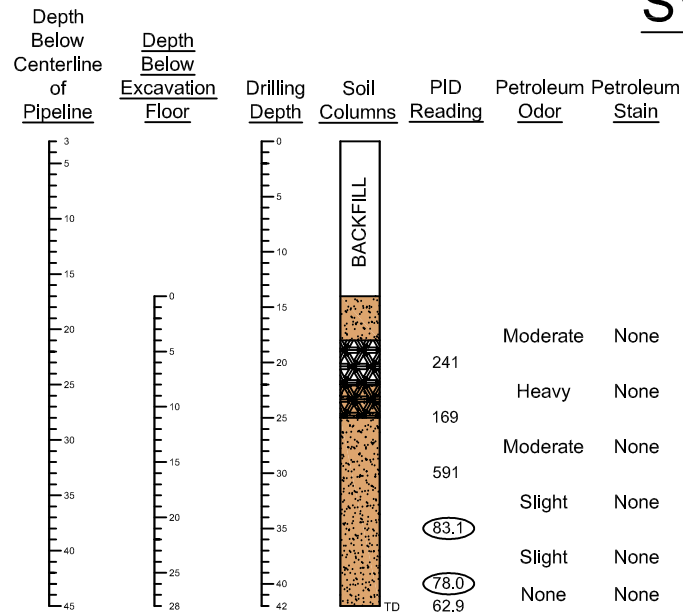
- 1.) The monitor well was advanced on date using air rotary drilling techniques.
- 2.) The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- 3.) The well is protected with a locked stick up steel cover and compression cap.
- 4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
- 3.) The depths indicated are referenced from ground surface.

SVE Deep #4 Well
 E.K. Queen Pearce 6-Inch
 Lea County, New Mexico
 Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS	Checked By: CDS
October 7, 2009	

SVE Deep #5 Well



Soil Description

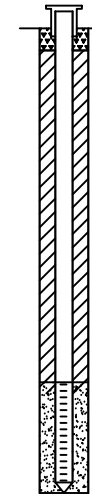
0 - 14' - Backfill material - Not Sampled

14 - 18' - Sand, brown, very fine grained

18 - 22' - Chert, white to rose, very hard

22 - 25' - Sand, brown, very fine grained with some chert fragments

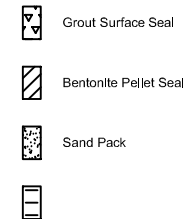
25 - 42' - Sand, brown, very fine grained



SVE Deep #5 Well

Date Drilled: September 25, 2009
 Thickness of Bentonite Seal: 30 Ft
 Depth of Exploratory Boring: 42 Ft bgs
 Depth to Groundwater: _____
 Ground Water Elevation: _____

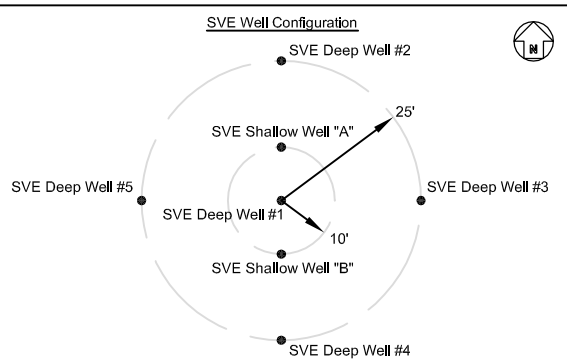
- ▼ Indicates the PSH level measured on _____
- ▼ Indicates the groundwater level measured on _____
- Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.



Completion Notes

Screen

- 1.) The monitor well was advanced on date using air rotary drilling techniques.
- 2.) The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- 3.) The well is protected with a locked stick up steel cover and compression cap.
- 4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
- 3.) The depths indicated are referenced from ground surface.

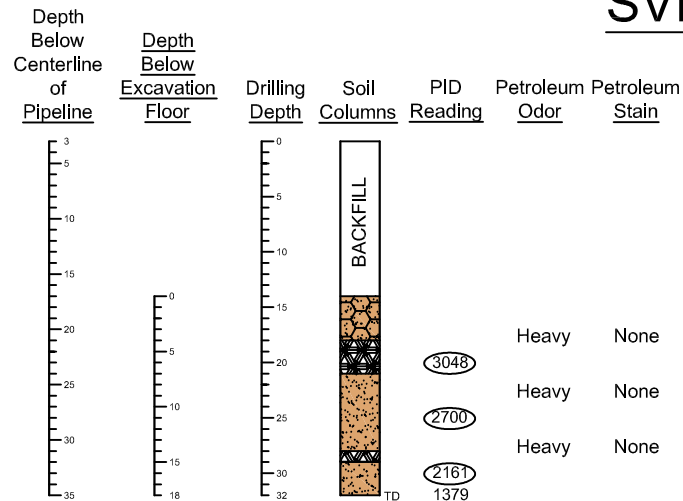


SVE Deep #5 Well
 E.K. Queen Pearce 6-Inch
 Lea County, New Mexico
 Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS	Checked By: CDS
October 7, 2009	

SVE Shallow "A" Well



Soil Description

0 - 14' - Backfill material - Not Sampled

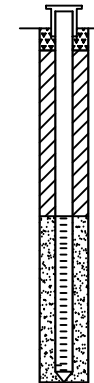
14 - 18' - Sand, brown, very fine grained, caliche, gray

18 - 21' - Chert, white to rose, very hard

21 - 28' - Sand, brown, very fine grained

28 - 29' - Chert, white to rose, very hard

29 - 32' - Sand, brown, very fine grained



SVE Shallow "A" Well

Date Drilled: September 24, 2009
 Thickness of Bentonite Seal: 15 Ft
 Depth of Exploratory Boring: 32 Ft bgs
 Depth to Groundwater: _____
 Ground Water Elevation: _____

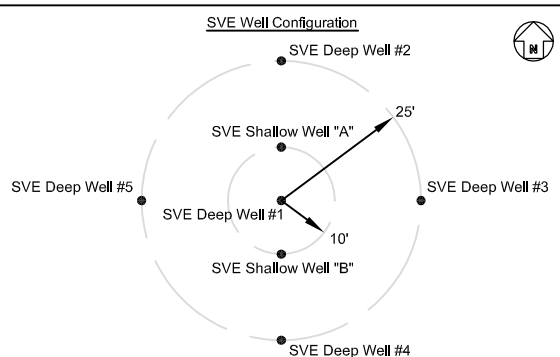
- ▼ Indicates the PSH level measured on _____
- ▼ Indicates the groundwater level measured on _____
- Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.

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

Completion Notes

Screen

- 1.) The monitor well was advanced on date using air rotary drilling techniques.
- 2.) The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- 3.) The well is protected with a locked stick up steel cover and compression cap.
- 4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
- 3.) The depths indicated are referenced from ground surface.

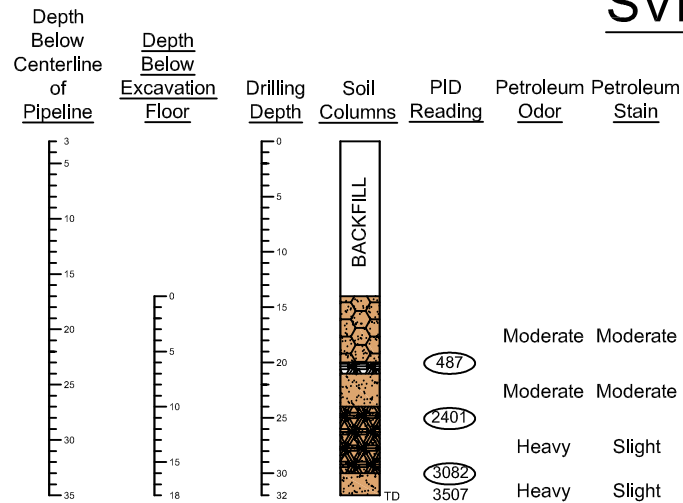


SVE Shallow "A" Well
 E.K. Queen Pearce 6-Inch
 Lea County, New Mexico
 Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS	Checked By: CDS
October 7, 2009	

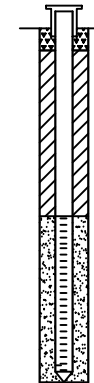
SVE Shallow "B" Well



Soil Description

0 - 14' - Backfill material - Not Sampled

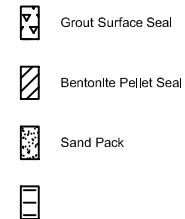
14 - 20' - Sand, brown, very fine grained, caliche, gray
 20 - 21' - Chert, white to rose, very hard
 21 - 24' - Sand, brown, very fine grained
 24 - 30' - Chert, white to rose, very hard with sand layers
 30 - 32' - Sand, brown, very fine grained



SVE Shallow "B" Well

Date Drilled September 25, 2009
 Thickness of Bentonite Seal 15 Ft
 Depth of Exploratory Boring 32 Ft bgs
 Depth to Groundwater _____
 Ground Water Elevation _____

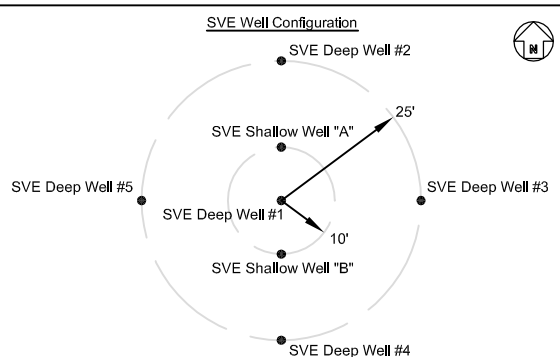
▼ Indicates the PSH level measured on _____
 ▼ Indicates the groundwater level measured on _____
 ○ Indicates samples selected for Laboratory Analysis.
 PID Head-space reading in ppm obtained with a photo-ionization detector.



Completion Notes

Screen

- 1.) The monitor well was advanced on date using air rotary drilling techniques.
- 2.) The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- 3.) The well is protected with a locked stick up steel cover and compression cap.
- 4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
- 3.) The depths indicated are referenced from ground surface.



SVE Shallow "B" Well
 E.K. Queen Pearce 6-Inch
 Lea County, New Mexico
 Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS	Checked By: CDS
October 7, 2009	

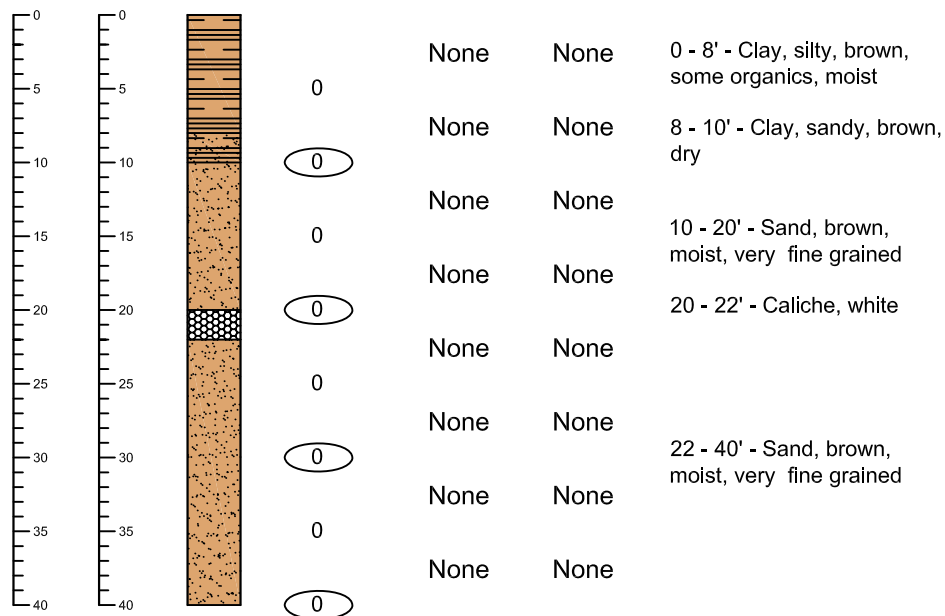
Depth
Below
Ground

Soil Boring SB-1

Drilling Depth Columns PID Reading Petroleum Odor Petroleum Stain Soil Description

Soil Boring Details

Date Drilled July 25, 2008
Thickness of Bentonite Seal 40 Ft
Depth of Exploratory Boring 40 Ft bgs
Depth to Groundwater
Ground Water Elevation



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

Notes

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

Boring Log Details
Soil Boring SB-1
E.K. Queen 6-Inch Pearce
Lea County, New Mexico
Plains Marketing, L.P.

Basin Environmental Services

Prep By: CDS	Checked By: CDS
November 17, 2008	

Depth
Below
Ground

Soil Boring SB-2

Drilling Surface	Depth	Soil Columns	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
	0					
	5		0	None	None	0 - 13' - Caliche, white, dry, soft
	10		0	None	None	13 - 15' - Sand, brown, very fine grained
	15		0	None	None	15 - 16' - Caliche, white
	20		0	None	None	16 - 17' - Sand, brown, very fine grained
	25		0	None	None	17 - 18' - Caliche, white
	30		0	None	None	18 - 20' - Sand, brown, very fine grained
			0	None	None	20 - 28' - Sand, brown, very fine grained with some caliche nodules
			0	None	None	28 - 29' - Chert, white, hard
			0	None	None	29 - 30' - Sand, brown, very fine grained

Soil Boring Details

Date Drilled July 25, 2008
 Thickness of Bentonite Seal 30 Ft
 Depth of Exploratory Boring 30 Ft bgs
 Depth to Groundwater _____
 Ground Water Elevation _____

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

Notes

- 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.

Boring Log Details
 Soil Boring SB-2
 E.K. Queen 6-Inch Pearce
 Lea County, New Mexico
 Plains Marketing, L.P.

Basin Environmental Services

Prep By: CDS	Checked By: CDS
November 17, 2008	

Depth
Below
Ground

Soil Boring SB-3

Drilling Surface	Depth	Soil Columns	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
	0					
	5		0	None	None	0 - 5' - Caliche, sandy, white to brown
	10		0.1	None	None	5 - 17' - Sand, brown, very fine grained
	15		0.1	None	None	
	20		0.1	None	None	17 - 24' - Caliche, sandy, white to brown
	25		0	None	None	24 - 26' - Chert, white, hard
	30		0	None	None	26 - 30' - Sand, brown, very fine grained, with chert laminations

Soil Boring Details

Date Drilled July 25, 2008
Thickness of Bentonite Seal 30 Ft
Depth of Exploratory Boring 30 Ft bgs
Depth to Groundwater
Ground Water Elevation

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

Notes

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

Boring Log Details
Soil Boring SB-3
E.K. Queen 6-Inch Pearce
Lea County, New Mexico
Plains Marketing, L.P.

Basin Environmental Services

Prep By: CDS

Checked By: CDS

November 17, 2008

Depth
Below
Ground

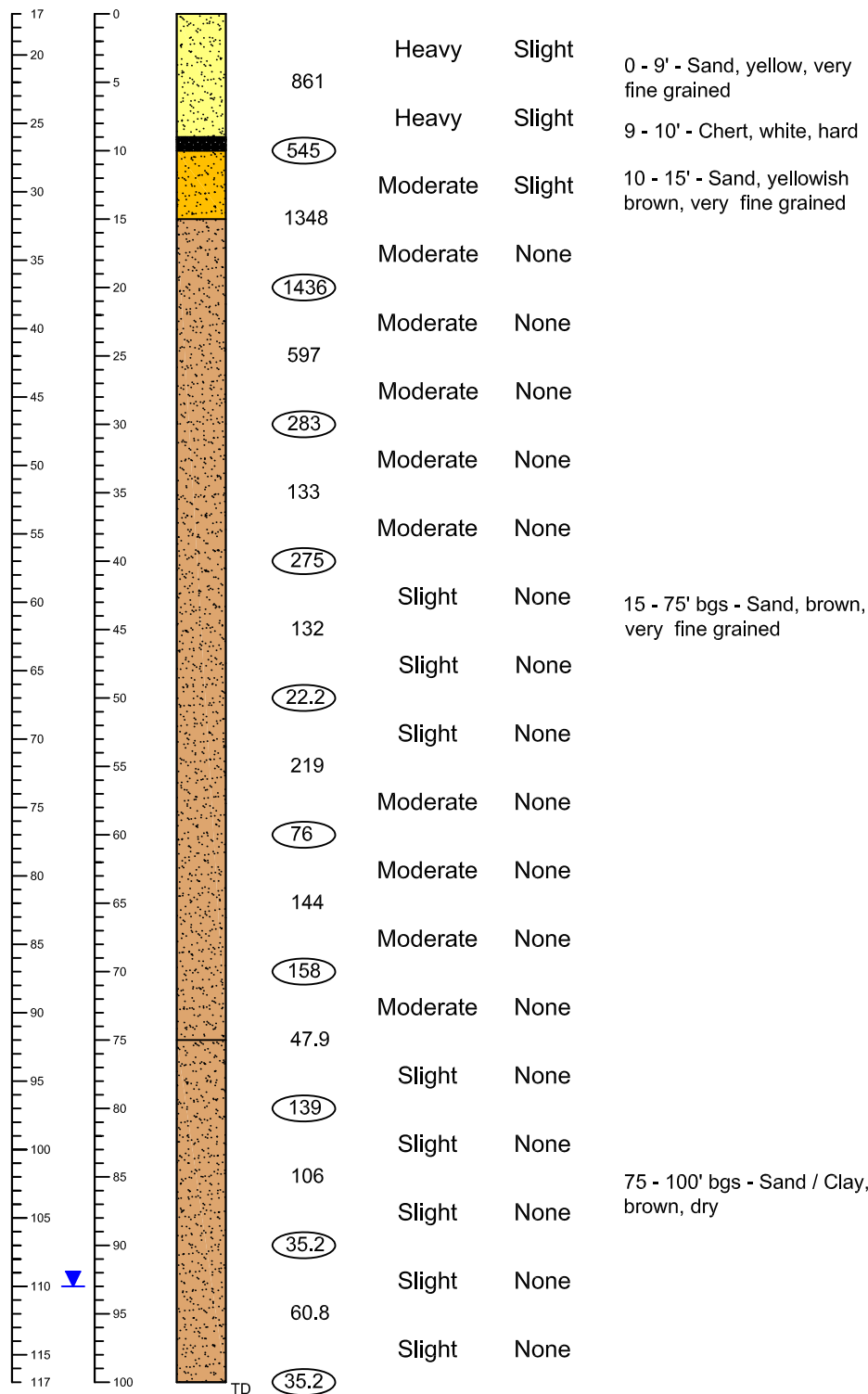
Soil Boring SB-4

Drilling Depth Soil Columns PID Reading Petroleum Odor Petroleum Stain Soil Description

Soil Boring Details

Date Drilled July 25, 2008
Thickness of Bentonite Seal 100 Ft
Depth of Exploratory Boring 100 Ft bgs
Depth to Groundwater 110 Ft
Ground Water Elevation

▼ Indicates the PSH level measured on
▼ Indicates the groundwater level measured on July 25, 2008
○ 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.

Boring Log Details
Soil Boring SB-4
E.K. Queen 6-Inch Pearce
Lea County, New Mexico
Plains Marketing, L.P.

Basin Environmental Services

Prep By: CDS
November 17, 2008
Checked By: CDS

Depth
Below
Ground Surface

Soil Boring SB-5

Drilling Depth	Soil Columns	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0					0 - 2' - Chert and calcified Sandstone, white, hard
5		17.5	None	None	2 - 7' - Sand, brown, medium grained with gravel, well rounded
10		50.2	None	None	7 - 10' - Sand, brown, medium grained with gravel, well rounded, moist
15		16.2	None	None	
20		16.3	None	None	
25		11.8	None	None	10 - 39' - Sand, brown, fine grained, moist
30		10.6	None	None	
35		9.8	None	None	
40		9.8	None	None	39 - 40' - Sand, brown, very fine grained, dry
45		6.8	None	None	
50		12.2	None	None	40 - 60' - Sand, brown, very fine grained, moist
55		11.3	None	None	
60		11.4	None	None	

Soil Boring Details

Date Drilled January 9, 2009
 Thickness of Bentonite Seal 60 Ft
 Depth of Exploratory Boring Approx. 77 Ft bgs
 Depth to Groundwater
 Ground Water Elevation

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

Notes

- 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.

Boring Log Details
 Soil Boring SB-5
 E.K. Queen 6-Inch Pearce
 Lea County, New Mexico
 Plains Marketing, L.P.

Basin Environmental Services

Prep By: CDS	Checked By: CDS
March 9, 2009	

Soil Boring SB-6

Depth Below Ground Surface	Soil Column	Chloride Field Test	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0				None	None	
5			24.8	None	None	
10			67.7	None	None	0' - 18' - Backfill (tan silty sand with clay)
15			100	None	None	
20			330	Moderate	None	18' - 22' - Tan fine sand - sandstone
25			862	Heavy	None	
30			403	Heavy	None	22' - 33' - Red fine sand - sandstone
35			252	Heavy	None	33' - 35' - Red silty sand - silty clay
40			98.0	Heavy	None	
45			84.6	Heavy	None	
50			131	Heavy	None	
55			181	Heavy	None	35' - 60' - Gold fine to very fine sand
60			30.3	Heavy	None	

Boring SB-6

Date Drilled January 28, 2011
 Thickness of Bentonite Seal 60 Ft
 Depth of Exploratory Boring 60 Ft bgs
 Depth to Groundwater
 Ground Water Elevation

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

Completion Notes

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

Soil Boring SB-6

Plains Pipeline, LP
 EK Queen Pearce 6-Inch
 Lea County, New Mexico

Basin Environmental Service Technologies, LLC
 3100 Plains Hwy.
 Lovington, NM 88260

Prep By: BJA	Checked By: BRB
March 15, 2011	

Soil Boring SB-7

Depth Below Ground Surface	Soil Column	Chloride Field Test	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0				None	None	
2				None	None	
7				None	None	
12				None	None	0' - 17' - Backfill (tan silty sand with clay)
17			34.0	Moderate	None	
22			622	Heavy	None	17' - 22' - Tan fine sand - sandstone
27			1,053	Heavy	None	
32			299	Heavy	None	22' - 33' - Red fine sand - sandstone
37			444	Heavy	None	
42			729	Heavy	None	33' - 35' - Red silty sand - silty clay
47			1,781	Heavy	None	
52			1,967	Heavy	None	
57			861	Heavy	None	35' - 67' - Gold fine to very fine sand
62			2,600	Heavy	None	
67			3,648	Heavy	None	

Boring SB-7

Date Drilled January 28, 2011
 Thickness of Bentonite Seal 67 Ft
 Depth of Exploratory Boring 67 Ft bgs
 Depth to Groundwater
 Ground Water Elevation

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

Completion Notes

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

Soil Boring SB-7

Plains Pipeline, LP
 EK Queen Pearce 6-Inch
 Lea County, New Mexico

Basin Environmental Service Technologies, LLC
 3100 Plains Hwy.
 Lovington, NM 88260

Prep By: BJA	Checked By: BRB
March 15, 2011	

Soil Boring SB-8

Depth Below Ground Surface	Soil Column	Chloride Field Test	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0				None	None	
5				None	None	
10				None	None	0' - 18' - Backfill (tan silty sand with clay)
15				None	None	
20			48.0	Moderate	None	18' - 22' - Tan fine sand - sandstone
25			1,309	Heavy	None	
30			271	Heavy	None	22' - 33' - Red fine sand - sandstone
35			400	Heavy	None	33' - 35' - Red silty sand - silty clay
40			140	Heavy	None	
45			328	Heavy	None	
50			1,389	Heavy	None	35' - 70' - Gold fine to very fine sand
55			1,296	Heavy	None	
60			986	Heavy	None	
65			892	Heavy	None	
70			802	Heavy	None	70' - TD - Tan fine sand - sandstone

Boring SB-8

Date Drilled January 20, 2012
 Thickness of Bentonite Seal 70 Ft
 Depth of Exploratory Boring 70 Ft bgs
 Depth to Groundwater
 Ground Water Elevation

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

Completion Notes

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

Soil Boring SB-8

Plains Pipeline, LP
 EK Queen Pearce 6-Inch
 Lea County, New Mexico



Basin Environmental Service Technologies, LLC
 3100 Plains Hwy.
 Lovington, NM 88260

Prep By: BJA	Checked By: BRB
May 15, 2012	

Soil Boring SB-9

Depth Below Ground Surface	Soil Column	Chloride Field Test	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description	Boring SB-9
0				None	None		Date Drilled <u>January 23, 2012</u>
5				None	None		Thickness of Bentonite Seal <u>35 Ft</u>
10				None	None	0' - 18' - Brown fine sandy clay	Depth of Exploratory Boring <u>35 Ft bgs</u>
15				None	None		Depth to Groundwater _____
20			45.1	None	None	18' - 21' - Tan fine sand - calcified sandstone	Ground Water Elevation _____
25			6.0	None	None	21' - 22' - Tan fine sand - siliceous sandstone	 Indicates the PSH level measured on _____  Indicates the groundwater level measured on _____  Indicates samples selected for Laboratory Analysis.
30			8.6	None	None	22' - 35' - Tan fine sand - sandstone (layers)	PID Head-space reading in ppm obtained with a photo-ionization detector.
35			7.9	None	None		

Completion Notes

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

Soil Boring SB-9

Plains Pipeline, LP
EK Queen Pearce 6-Inch
Lea County, New Mexico



Basin Environmental Service Technologies, LLC
3100 Plains Hwy.
Lovington, NM 88260

Prep By: BJA	Checked By: BRB
May 15, 2012	

Soil Boring SB-10

Depth Below Ground Surface	Soil Column	Chloride Field Test	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0				None	None	
5				None	None	
10				None	None	0' - 19' - Backfill (tan fine sandy clay)
15				None	None	
20			82.1	Moderate	None	19' - 21' - Tan fine sand - silty sandstone
25			115	Heavy	None	21' - 26' - Tan fine sandstone (layers)
30			68.8	Moderate	None	
35			23.4	Slight	None	
40			43.8	Slight	None	
45			57.7	Moderate	None	26' - 60' - Tan to gold fine sand
50			144	Heavy	None	
55			36.8	Slight	None	
60			45.6	Slight	None	

Boring SB-10

Date Drilled January 23, 2012
 Thickness of Bentonite Seal 60 Ft
 Depth of Exploratory Boring 60 Ft bgs
 Depth to Groundwater
 Ground Water Elevation

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

Completion Notes

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

Soil Boring SB-10

Plains Pipeline, LP
 EK Queen Pearce 6-Inch
 Lea County, New Mexico



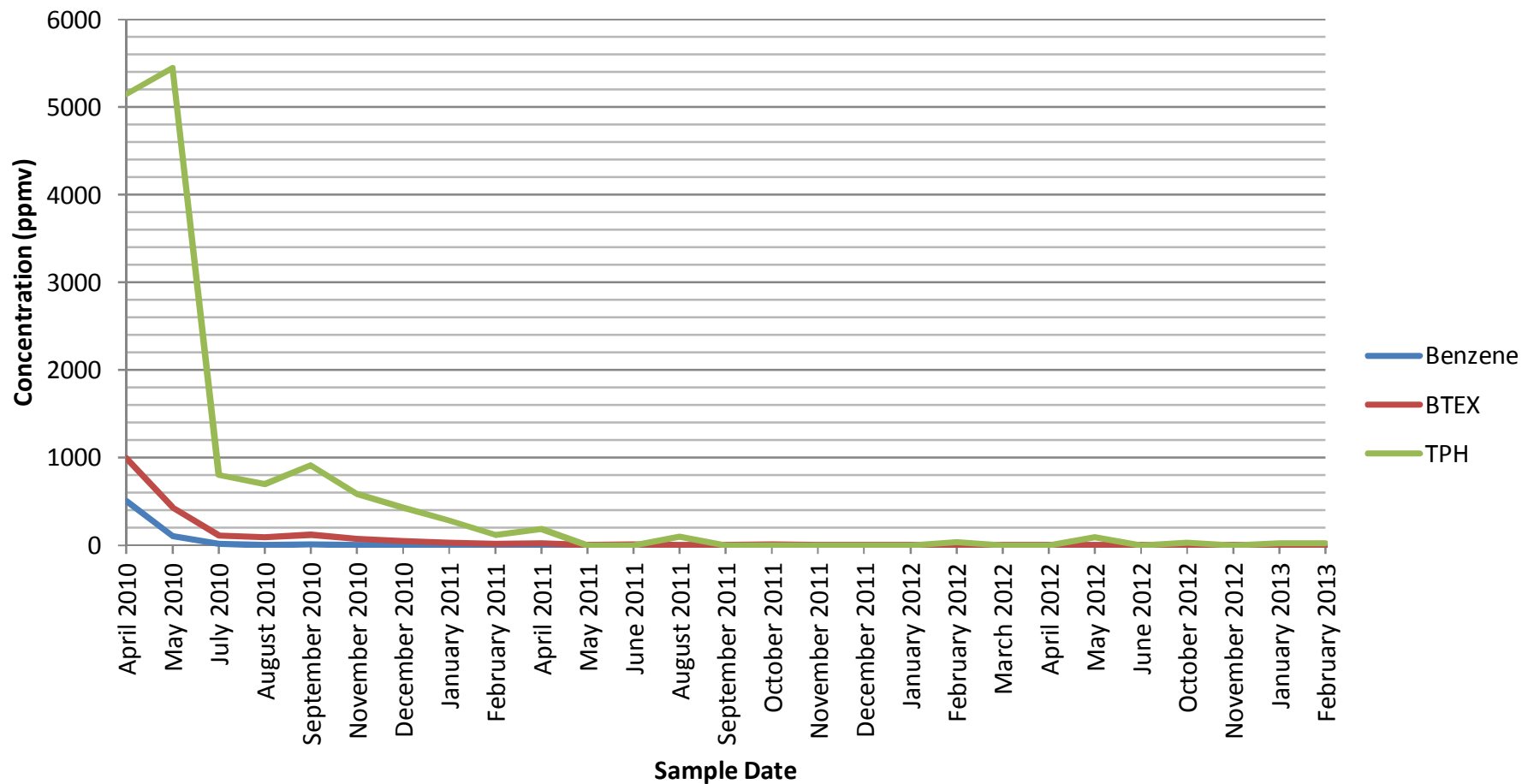
Basin Environmental Service Technologies, LLC
 3100 Plains Hwy.
 Lovington, NM 88260

Prep By: BJA	Checked By: BRB
May 15, 2012	

Appendix C

SVE Discharge Graph

EK Queen Pearce 6-Inch SVE Emissions



Appendix D

Permits



Ray Powell, M.S., D.V.M.
COMMISSIONER

State of New Mexico
Commissioner of Public Lands

310 OLD SANTA FE TRAIL
P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

COMMISSIONER'S OFFICE

Phone (505) 827-5760

Fax (505) 827-5766

www.nmstatelands.org

November 1, 2012

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

Attn: Jeffrey P. Dann – Senior Environmental & Regulatory Specialist

Re: Approved New Mexico Water Easement No: WM-200

Dear Mr. Dann:

Enclosed, please find your approved original document(s) of WM-200. If any corrections are necessary, please notify this office and we will amend this document as required.

If we can be of further assistance, please feel free to contact me at (505) 827-5899.

The New Mexico State Land Office thanks you for your business and we look forward to a successful business relationship.

Sincerely,

A handwritten signature in black ink, appearing to read "Philip Garcia", is written over a horizontal line.

Philip Garcia, Water Management Analyst
Rights of Way and Water Resources Bureau
Surface Resources Division

Enclosures

cc: File



EK Queen (Pearce)
2008-113 NM

NEW MEXICO STATE LAND OFFICE
WATER EASEMENT
(Monitoring)

2012 OCT 15 AM 10 14

NO. WM-200
Amendment

THIS AGREEMENT, dated this 25th day of **November, 2008**, made and entered into between the State of New Mexico Commissioner of Public Lands, acting trustee pursuant to the Act of June 21, 1910, 36 Stat. 557, ch. 310, § 10, (Commissioner), and **Plains Pipeline , LP.**, whose address is **333 Clay Street, Suite 1600, Houston, TX 77002** (Grantee). This Water Easement becomes effective upon the date it is signed by the Commissioner.

A. Grant of Easement:

1. **Grant:** For consideration, including the covenants herein, the Commissioner renews and grants to Grantee a Water Easement within the area described as follows:

<u>Quarter-Quarter Section</u>	<u>Township</u>	<u>Range</u>	<u>Acreage</u>
SW4SE4	16	18 South	34 East
			7.5

The **four (4)** 2.5-acre well-sites permitted under this Water Easement are described in attached Exhibit A and as follows:

<u>Well Designation(name/number)</u>	<u>Expected Volume</u>

MW-1; MW-2; MW-3, MW-4

Less than 500 gallons

These well-sites may overlap.

2. **Purpose:** This grant of easement is for the purpose of allowing Grantee's placement of a water quality monitoring well. Grantee shall not seek or acquire any water rights in connection with this Water Easement. The circumstances requiring the placement of this well are briefly stated as follows: **monitoring groundwater to prevent possible hydrocarbon contamination.**

3. **Related Uses:** This grant of water easement entitles Grantee to the exclusive use of the water easement for the permitted purposes, to install such improvements as are necessary to those purposes for the term of this easement. The Commissioner may permit other uses on or within this Water Easement to the extent that they do not impair Grantee's permitted purpose.

B. Terms, Covenants, and Conditions:

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1. Consideration for Grant: In addition to such fees as have been or shall be assessed for this Permit, Grantee shall provide to The Commissioner copies of all interim and final reports created during the monitoring process of which this well is a part.
2. Annual Rental; Payment: Grantee shall pay annual rental in the amount of **\$2,000.00** to be due on or before **November 25** of each year. Payment of all sums due hereunder shall be made at the office of the Commissioner of Public Lands, 310 Santa Fe Trail, P.O. Box 1148, Santa Fe, New Mexico 87504-1148.
3. Term of Easement: The grant of this Water Monitoring Easement is for a term of five (5) years, commencing **November 25, 2008** and expiring **November 24, 2013** unless terminated earlier as provided herein. Upon expiration, and upon thirty (30) days advance notice by Grantee to the Commissioner, the parties may renew this easement if the Commissioner, in his sole discretion, determines such renewal to be in the best interests of the trust. At such time that this easement expires and is not renewed, or when Grantee shall fail to use the Land for the permitted purposes for a period of one year, the land shall *ipso facto* revert to the Commissioner who may, in his sole discretion, thereafter make this easement, with water rights and improvements, if any, available. The Commissioner shall give written notice by regular mail of this, and no further notice shall be required.
4. Amendment: With the consent of the Commissioner, Grantee may add more monitoring wells to this easement as are necessary. The form of such amendments will be prescribed by the Commissioner. The term of this easement shall be unaffected by such amendments. Each additional well shall be subject to the terms of this Water Easement.
5. Relationship With Other State Agencies: Grantee shall comply with all applicable laws pertaining to, and with all rules and regulations and procedures of, any other state agency having proper jurisdiction over the water. Copies of any permits, licenses etc. obtained from the State Engineer shall be provided to the Commissioner herein.
6. Grantee Standard of Care: Grantee shall act prudently in drilling and monitoring water. "Prudent" within the context of this provision means that standard of care, operating and action of reasonable water user acting pursuant to provisions of New Mexico Water Law and any other applicable laws, rules, and regulations. When Grantee has completed monitoring use of the well, Grantee will plug the well and provide Commissioner written evidence of having done so.
7. Grantee Improvements: Grantee may make or place such improvements and equipment upon the easement land as may reasonably be necessary to the stated purposes of the grant of easement. No pipelines shall be installed. No Water Rights are to be obtained or developed. All Grantee improvements such as well housing, piping, casing, and related equipment installed or obtained by Grantee on the granted easement shall remain Grantee's sole property and liability. Upon the termination, expiration or assignment of Grantee's interest in this easement, Grantee shall remove all such improvements, unless otherwise directed by the Commissioner. Any improvements left by Grantee without the Commissioner's consent shall continue to be Grantee's sole property and liability, shall be deemed in trespass, and shall give rise to such remedies for trespass and waste as may be available to the Commissioner at law or in equity.

8. Non-impairment: Grantee's uses and activities under this easement shall not impair existing appropriations of water on state trust lands within the easement or on state trust lands in adjacent areas.

9. Rights-of-way: Grantee shall have the right, without further consideration, upon reasonable notice to the Commissioner, to define and establish rights-of-way upon the surrounding section of trust land section to install or maintain any necessary equipment or facilities on the water easement. Grantee must accurately plat and define such rights-of-way and provide such plats to Grantee as soon as practicable. Commissioner reserves the right to require such rights-of-way to be moved when the development or other use of the surrounding trust lands require this. Rights of way outside the surrounding section will be granted by the Commissioner in his discretion. No right-of-way, or other access across, or use of any lands other than those expressly granted in this water easement is implied or expressed.

10. Assignment: Grantee, upon payment of the required fee and completion of required forms indicating the Commissioner's consent, may assign or collaterally assign this Water Easement, in whole or in part. No such assignment shall attempt to convey any interest in water rights. Upon approval of the assignment, in writing, by the Commissioner, Grantee shall stand relieved from all duties and obligations to the Commissioner with respect to the lands embraced in the assignment, and the Commissioner shall likewise be relieved from all obligations to the Grantee/assignor as to such lands, provided that the assignee shall expressly succeed to all of the duties, obligations, rights, and privileges of the Grantee/assignor with respect to such. No assignment shall relieve Grantee from any liability incurred prior to the assignment.

11. Relinquishment: With the consent of the Commissioner and payment of a fee of \$30.00, the Grantee may relinquish this Water Development Easement, in whole or in part, to the Commissioner; provided, however, that this clause shall become absolutely inoperative immediately and concurrently with the filing of any suit in any court of law or equity by the Commissioner or Grantee or any assignee to enforce any of the terms of this Water Development Easement.

12. Grantee Breach: The Commissioner may terminate this Water Easement for breach of any term or covenant; provided, however, that the Commissioner must mail to the Grantee, by certified mail, addressed to the mailing address of Grantee shown in the Commissioner's current records, a thirty day notice of intention to terminate, specifying the reasons for which the notice is given. Proof of mailing, but no proof of receipt of notice, shall be necessary, and thirty days after such mailing this easement shall terminate *ipso facto* without further notice or proceeding required of the Commissioner; provided, however, there shall be no termination and reversion if Grantee has previously made arrangements satisfactory to the Commissioner to discharge or resolve the breach.

13. Documentation: Grantee shall furnish copies of records and such reports and plats of his operation, including but not limited to well logs, drill cores, and other data relating to hydrology and geological formations as the Commissioner may reasonably request from time to time.

14. Survey, Posting and Fencing: Grantee shall survey each well site and submit a copy of the survey plat to the Commissioner. Grantee shall post on each well a sign with the Grantee's name, Water Development Easement number, State Land Office well number, State Engineer Office permit number and location by legal description. Grantee may fence only that portion of each well site location which is reasonably required to be fenced.

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2012 OCT 15

15. Applicable Land Office Rules: This Water Development Easement is made subject to all Rules of the New Mexico State Land Office, as though they were fully set forth herein. Grantee is expected to be familiar with such rules, and a copy will be provided upon request.

16. Compliance With Laws: Grantee, including its heirs, assigns, agents and contractors shall at their own expense fully comply with all laws, regulations, rules, ordinances, and requirements of city, county, regional, state and federal authorities and agencies, in all matters and things affecting the premises and operations thereon which may be enacted or promulgated under the governmental police powers pertaining to public health and welfare, including but not limited to conservation, sanitation, aesthetics, pollution, cultural properties, fire, and environment. Such agencies are not to be deemed third party beneficiaries hereunder; however, this clause is enforceable by the Commissioner as herein provided or as otherwise permitted by law.

17. Indemnity: Subject to the limitations and exclusions contained in 56-7-2 NMSA 1978, Grantee shall save, hold harmless, indemnify, and defend the Commissioner, his employees, agents, contractors, and beneficiaries in both their official and individual capacities, from any and all liabilities, claims, demands, losses, damages, or expenses, including, but not limited to, reasonable attorneys' fees, loss of land value, third-party claims, penalties for removal, remedial or restoration costs arising out of or in connection with: (1) the actions, use and occupancy under this easement of Grantee and Grantee's employees, agents, contractors or invitees; (2) any Hazardous Materials located in, under, or upon or otherwise affecting the easement land or adjacent property, whether caused before or after the Effective Date; (3) the activities of third parties on the easement land to the extent that Grantee knew or should have known of such. This Section shall survive the termination or expiration of this easement, and any cause of action the Commissioner may have to enforce this Section shall not be deemed to accrue until the Commissioner's actual discovery of said liability, claim, demand, loss, damage, or expense.

To the extent, if at all, Section 56-7-1 NMSA 1978 is applicable to any indemnity by Grantee of the Commissioner provided for in this easement, such indemnity shall not extend to liability, claims, damages, losses or expenses, including fees of lawyers, arising out of: (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the Commissioner, or his agents or employees; or (2) the giving of or the failure to give directions or instructions by the Commissioner, or his agents or employees, where the giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property.

18. Bond: Prior to commencement of operations under this Water Development Easement. Grantee shall obtain the Commissioner's approval of and file a bond with the Commissioner in the amount of **\$500.00** to secure the payment, to the Commissioner, of such damage as may occur to livestock, range, water, crops or tangible improvements on the subject lands as may result from Grantee's use and occupation under this Water Easement. Such bond shall be payable for the term of this easement, and may be utilized for reclamation of disturbed lands following the operations of Grantee under this easement. Payment under this paragraph is to be made to the Commissioner and not to any other party. Grantee's bond shall not be liquidated damages, and the Commissioner reserves the right to pursue any other remedy for damages available at law or in equity.

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19. Dispute Resolution: Any disputes arising under or in connection with this easement shall be first submitted to non-binding mediation if the parties agree; thereafter, or otherwise, any such dispute must be resolved by mandatory contest pursuant to 19.2.15 NMAC. Subsequent appeal, if any, shall be in the First Judicial District Court of Santa Fe. In all instances, the law of New Mexico shall apply.

20. No Waiver by Commissioner: No employee or agent of the Commissioner has the power, right, or authority to orally waive any of the conditions, covenants, or agreements of this easement; and no waiver by the Commissioner of any of the conditions, covenants, or agreements of this Easement shall be effective unless in writing and executed by the Commissioner.

The Commissioner's waiver of Grantee's breach or default of any of the conditions, covenants, or agreements hereof shall not constitute or be construed as a waiver of any other or subsequent breach or default by Grantee. The failure of the Commissioner to enforce at any time any of the conditions, covenants, or agreements of this easement, or to exercise any option herein provided, or to require at any time performance by Grantee of any of the conditions, covenants, or agreements of this Easement shall not constitute or be construed to be a waiver of such conditions, covenants, or agreements, nor shall it affect the validity of this easement or any part thereof, or the Commissioner's right to thereafter enforce each and every such condition, covenant, or agreement.

21. Holding Over: Upon termination or expiration of this easement, any act or conduct of Grantee, including, but not limited to, the unapproved entry upon, occupancy, or use, whether continuous or not, of all or any part of the easement land by Grantee, the Grantee's agents, or by any unauthorized improvements or other improvements required or ordered to be removed upon termination or expiration shall constitute Holding Over. At the termination or expiration of this easement, Grantee immediately shall deliver possession to the Commissioner. In the event of Grantee's Holding Over, Grantee shall pay the Commissioner from time to time, upon demand, as rental for the period of any hold over, to be due for each day of such hold over, an amount equal to two hundred percent (200%) of the annual rent. Nothing contained herein shall be construed as a grant to Grantee of the right to hold over or otherwise enter the Land for any purpose after the expiration or termination of this easement without the prior written approval of the Commissioner. At any time that Grantee is holding over, the Commissioner shall, without requirement of further notice or grace period, have any and all rights to evict or otherwise remove Grantee by force or otherwise, with all costs and fees incurred in such action to be due and payable by Grantee. This Section shall survive the termination or expiration of this easement.

22. Scope of Agreement: This easement incorporates all the agreements, covenants, and understandings between the Commissioner and Grantee concerning the subject matter hereof and all such agreements, covenants, and understandings are merged into this easement. In addition, this easement incorporates the terms of Grantee's contemporaneous standard Water Rights Agreement as though set out fully herein. No prior agreement or understanding between The Commissioner and Grantee shall be valid or enforceable unless expressly embodied in this easement.

23. Amendment: This easement shall not be altered, changed, or amended except by a written instrument executed by both the Commissioner and Grantee.

24. Non-Impairment: Nothing in this Easement is to be construed to impair the rights of any lawful holder, present or future, of any geothermal resources, or any mineral, grazing, commercial, easement, or water rights on the subject or any other state trust lands.

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25. Applicable Law: The laws of the State of New Mexico shall govern this easement, without giving effect to the conflict of law provisions of the State of New Mexico. Grantee consents to venue and jurisdiction in the District Court in and for the County of Santa Fe, State of New Mexico for purposes of any appeal pursuant to 19.2.15 NMAC, and to service of process under the laws of the State of New Mexico in any action relating to this easement or its subject matter.

26. Successors In Interest: All terms, conditions, and covenants of this easement and all amendments thereto shall extend to and bind the permitted heirs, successors, and assigns of Grantee and The Commissioner.

27. Time: Time is of the essence in the performance of each and every provision of this easement. Grantee's failure to perform any or all of its obligations under this easement in a timely manner shall be a breach of this easement.

28. Singular And Plural; Use Of Genders: Whenever the singular is used herein, the same shall include the plural; whenever a particular gender is used herein, the same shall include the other gender and no gender.

29. Headings and Titles: The use of section or paragraph headings and titles herein is for descriptive purposes only and is independent of the covenants, conditions, and agreements contained herein.

30. Severability: In the event that any provision of this easement is held invalid or unenforceable under applicable law, this easement shall be deemed not to include that provision and all other provisions shall remain in full force and effect.

31. No Joint Venture: The Commissioner is not and will not be construed or held to be a partner, joint venturer or associate of Grantee in the conduct of the business of Grantee. The Commissioner will not be liable for any debts incurred by Grantee in the conduct of the business of Grantee. The relationship between The Commissioner and Grantee is, and will remain, solely that of the Commissioner and Grantee.

32. Security: Any and all security of any kind for Grantee, Grantee's agents, employees or invitees, the Land, or any personal property thereon shall be the sole responsibility and obligation of Grantee, and shall be provided by Grantee at Grantee's sole cost and expense. Grantee agrees to provide reasonable security to the easement land and all construction areas within the Land consistent with standard industry practices and in conformity with Grantee's duty to prevent waste and trespass.

33. No Commissioner Personal Liability: In the event of a court action, Grantee shall not seek damages from The Commissioner or any employee of SLO or the State of New Mexico in their individual capacity. This Section shall survive termination of this Easement.

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34. **Notices:** Written notice by registered or certified U.S. Postal Service, return receipt requested, or delivered by reputable overnight courier, return receipt of tracking system, to the addresses of the party hereunder shall constitute sufficient notice to comply with the terms of this easement. Notice will be deemed effective upon delivery. Either the Commissioner or Grantee may change its respective address as provided in this Section effective three (3) business days after giving written notice of the change to the other. The addresses for notice are:

Notice to The Commissioner:

New Mexico Commissioner of Public Lands
P.O. Box 1148
Santa Fe, New Mexico 87504-1148
FAX: (505) 827-5766
Attn: Water Resources Unit

With copy to:

New Mexico State Land Office
General Counsel
P.O. Box 1148
Santa Fe, NM 87504-1148
FAX: (505) 827-4262

Notice to Grantee:

Plains Pipeline, LP
P.O. Box 4648
Houston, TX 77210-4648
FAX: 713-646-4310
Attn: Jeffrey P. Dann, Sr. Environmental & Regulatory Specialist

2012 OCT 15 AM 10 15

GRANTEE:

Jeffrey P. Dann
By Jeffrey P. Dann, Sr. Environmental & Regulatory Specialist

STATE OF TEXAS)
) ss
COUNTY OF HARRIS)

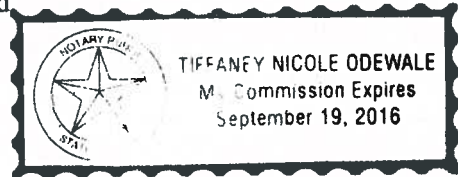
Subscribed and sworn to before me this 11th day of October 2012,
by Jeffrey P. Dann, Grantee.

S
E September 19, 2016
A MY COMMISSION EXPIRES
L

Tiffany Nicole Odevale
NOTARY PUBLIC

Received on \$500.00 July, 26 2012 :

- ☒ \$500.00 per well fee, total cash due \$ 0 ; and
☐ \$500.00 single-well bond, or
☐ \$1,000.00 blanket bond



COMMISSIONER

Ray Powell DVM
Ray Powell M.S., D.V.M., Commissioner of Public Lands

dated: 10-19-12

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Scott A. Verhines, P.E.
State Engineer



Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

**STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER**

Trn Nbr: 516944
File Nbr: L 13211

Nov. 16, 2012

BEN J ARGUIJO (BASIN ENVIRONMENTAL)
PLAINS PIPELINE LP
333 CLAY STREET
SUITE 1600
HOUSTON, TX 77002

Greetings:

Enclosed is your copy of the above numbered permit that has been approved subject to the conditions set forth on the approval page. In accordance with the conditions of approval, the well can only be tested for 10 cumulative days, and the well is to be plugged on or before 11/30/2013, unless a permit to use the water is acquired from this office.

A Well Record & Log (OSE Form wr-20) shall be filed in this office within twenty (20) days after completion of drilling, but no later than 11/30/2013.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us or will be mailed upon request.

Sincerely,


Andy Morley
(575) 622-6521

Enclosure

NEW MEXICO OFFICE OF THE STATE ENGINEER



APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER



(check applicable box):

For fees, see State Engineer website: <http://www.ose.state.nm.us/>

2-32225

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☒ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	
A separate permit will be required to apply water to beneficial use.		
☐ Temporary Request - Requested Start Date: 11/6/2012		Requested End Date: 11/6/2013
Plugging Plan of Operations Submitted? ☐ Yes ☒ No		

1. APPLICANT(S)

Name: Plains Pipeline, LP	Name:
Contact or Agent: check here if Agent ☒ Ben J. Arguijo (Basin Environmental)	Contact or Agent: check here if Agent ☐
Mailing Address: 333 Clay Street, Suite 1600	Mailing Address:
City: Houston	City:
State: TX Zip Code: 77002	State: Zip Code:
Phone: (713)201-3548 ☐ Home ☒ Cell Phone (Work): (713)646-4657	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): jpdann@paalp.com bjarguijo@basinenv.com	E-mail (optional):

NO. 11-18-ADN 2100

STATE ENGINEER OFFICE

FOR OSE INTERNAL USE

Application for Permit, Form wr-07, Rev 4/12/12

File Number: L-13211	Trn Number: 516944
Trans Description (optional):	
Sub-Basin:	
PCW/LOG Due Date: 11-30-13	

2. WELL(S) Describe the well(s) applicable to this application.

2-32225

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), <u>or</u> Latitude/Longitude (Lat/Long - WGS84). District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.			
☐ NM State Plane (NAD83) (Feet) ☐ NM West Zone ☐ NM East Zone ☐ NM Central Zone		☐ UTM (NAD83) (Meters) ☐ Zone 12N ☐ Zone 13N	
☒ Lat/Long (WGS84) (to the nearest 1/10 th of second)			
Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (Quarters or Halves, Section, Township, Range) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
MW-4	32 44 30.8 n	103 33 46.7 w	Unit Letter "O" (SW/SE), Section 16, Township 18 South, Range 34 East
NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions) Additional well descriptions are attached: ☐ Yes ☒ No If yes, how many _____			
Other description relating well to common landmarks, streets, or other: See attached "Site Location Map" and "Proposed Monitor Well Location Map".			
Well is on land owned by: New Mexico State Land Office			
Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☐ Yes ☐ No If yes, how many _____			
Approximate depth of well (feet): 140.00		Outside diameter of well casing (inches): 2.00	
Driller Name: Straub Corporation		Driller License Number: WD1478	

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Three (3) monitor wells currently exist on-site. One (1) additional two-inch (2") diameter monitor well will be drilled to approximately one hundred and forty feet (140') below ground surface to further monitor groundwater quality at the site and to determine the extent of hydrocarbon impact (if any). Quarterly monitoring of the well will continue until laboratory analytical results indicate contaminant levels are below the regulatory remediation action levels established for the site by the New Mexico Oil Conservation Division (NMOCD).

Additional information is provided in the attached water easement documentation from the New Mexico State Land Office.



FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number:	Trn Number:

4. **SPECIFIC REQUIREMENTS:** The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

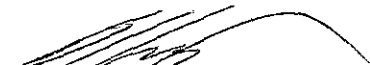
Exploratory: ☐ Include a description of any proposed pump test, if applicable.	Pollution Control and/or Recovery: ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	Construction De-Watering: ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	Mine De-Watering: ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted.
Monitoring: ☒ Include the reason for the monitoring well, and, ☒ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	Geo-Thermal: ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Ben J. Arguijo**

Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.


 Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

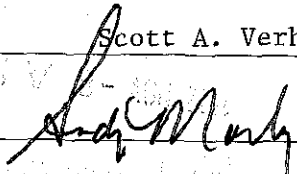
☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 16th day of November 2012, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By:
 Signature



Print

Title: **Andy Morley, Acting Manager District II**

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number:

L-13211

Trn Number:

516944

**NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE - MONITOR**

SPECIFIC CONDITIONS OF APPROVAL

- 1B Depth of the well shall not exceed the thickness of the Ogallala formation.
- 4 No water shall be appropriated and beneficially used under this permit.
- B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-12 New Mexico Statutes Annotated.
- C Driller's well record must be filed with the State Engineer within 20 days after the well is drilled or driven. Well record forms will be provided by the State Engineer upon request.
- C2 No water shall be diverted from this well except for testing purposes which shall not exceed ten (10) cumulative days, and well shall be plugged or capped on or before 11/30/2013, unless a permit to use water from this well is acquired from the Office of the State Engineer.
- P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between geologic zones.
- LOG The Point of Diversion L 13211 POD1 must be completed and the Well Log filed on or before 11/30/2013.

ACTION OF STATE ENGINEER

Notice of Intention Rcvd:	Date Rcvd. Corrected:
Formal Application Rcvd: 11/08/2012	Pub. of Notice Ordered:
Date Returned - Correction:	Affidavit of Pub. Filed:

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 16th day of Nov A.D., 2012

Scott A. Verhines, P.E., State Engineer

By: Andy Morley
Andy Morley

Trn Desc: L-13211 MONITOR

File Number: L 13211

Trn Number: 516944

Appendix E

Laboratory Analytical Reports (Soil)

Analytical Report 305463
for
PLAINS ALL AMERICAN EH&S

Project Manager: Camille Reynolds

E K Queen 6" Pearce

2008-113

12-JUN-08



12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215

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

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

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

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



12-JUN-08

Project Manager: **Camille Reynolds**

PLAINS ALL AMERICAN EH&S

1301 S. COUNTY ROAD 1150

Midland, TX 79706

Reference: XENCO Report No: **305463**

E K Queen 6" Pearce

Project Address: Lea County, NM

Camille Reynolds:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 305463. 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. 305463 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 305463



PLAINS ALL AMERICAN EH&S, Midland, TX

E K Queen 6" Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Floor @ 17'	S	Jun-06-08 14:00		305463-001



Certificate of Analysis Summary 305463
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2008-113
Contact: Camille Reynolds
Project Location: Lea County, NM

Project Name: E K Queen 6" Pearce

Date Received in Lab: Tue Jun-10-08 09:02 am
Report Date: 12-JUN-08
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	305463-001					
	Field Id:	Floor @ 17'					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Jun-06-08 14:00					
Percent Moisture	Extracted:						
	Analyzed:	Jun-10-08 16:50					
	Units/RL:	% RL					
Percent Moisture		3.25					
TPH by SW8015 Mod	Extracted:	Jun-11-08 15:33					
	Analyzed:	Jun-12-08 11:25					
	Units/RL:	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		4470 77.5					
C12-C28 Diesel Range Hydrocarbons		17600 77.5					
C28-C35 Oil Range Hydrocarbons		2770 77.5					
Total TPH		24840					

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(PQL) and above the SQL(MDL).
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.

* Outside XENCO'S scope of NELAC Accreditation

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11381 Meadowglen Lane Suite L Houston, Tx 77082-2647
9701 Harry Hines Blvd , Dallas, TX 75220
5332 Blackberry Drive, Suite 104, San Antonio, TX 78238
2505 N. Falkenburg Rd., Tampa, FL 33619
5757 NW 158th St, Miami Lakes, FL 33014
6017 Financial Dr., Norcross, GA 30071

Phone	Fax
(281) 589-0692	(281) 589-0695
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477

Project Name: E K Queen 6" Pearce

Work Order #: 305463

Project ID: 2008-113

Lab Batch #: 725253

Sample: 305463-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	152	100	152	70-135	**
o-Terphenyl	163	50.0	326	70-135	**

Lab Batch #: 725253

Sample: 305532-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	97.2	100	97	70-135	
o-Terphenyl	52.5	50.0	105	70-135	

Lab Batch #: 725253

Sample: 305532-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.0	100	96	70-135	
o-Terphenyl	53.9	50.0	108	70-135	

Lab Batch #: 725253

Sample: 510516-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	87.2	100	87	70-135	
o-Terphenyl	49.9	50.0	100	70-135	

Lab Batch #: 725253

Sample: 510516-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	82.5	100	83	70-135	
o-Terphenyl	45.9	50.0	92	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E K Queen 6" Pearce



Work Order #: 305463

Project ID: 2008-113

Lab Batch #: 725253

Sample: 510516-1-BSD / BSD

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	91.0	100	91	70-135	
o-Terphenyl	49.9	50.0	100	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: E K Queen 6" Pearce

Work Order #: 305463

Analyst: ASA

Date Prepared: 06/11/2008

Project ID: 2008-113

Date Analyzed: 06/11/2008

Lab Batch ID: 725253

Sample: 510516-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	906	91	1000	928	93	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	914	91	1000	931	93	2	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: E K Queen 6" Pearce

Work Order # : 305463

Project ID: 2008-113

Lab Batch ID: 725253

QC- Sample ID: 305532-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/12/2008

Date Prepared: 06/11/2008

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1040	1000	96	1040	1000	96	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	1010	97	1040	1020	98	1	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Sample Duplicate Recovery



Project Name: E K Queen 6" Pearce

Work Order #: 305463

Lab Batch #: 725130

Date Analyzed: 06/10/2008

QC- Sample ID: 305463-001 D

Reporting Units: %

Project ID: 2008-113

Analyst: WRU

Date Prepared: 06/10/2008

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	3.25	3.11	4	20	

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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

Project Name: E K QUEEN 6" Pearce

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA - C. J. Reynolds

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

[illegible]

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Brown Env. / Plains
 Date/ Time: 6-10-08 9:02
 Lab ID #: 3054163
 Initials: CL

Sample Receipt Checklist

Client Initials

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

Variance Documentation

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

Regarding: _____

Corrective Action Taken:

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

Analytical Report 308807
for
PLAINS ALL AMERICAN EH&S

Project Manager: Camille Reynolds

E K QUEEN 6" PEARCE

2008-113

04-AUG-08



12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215

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

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

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

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04-AUG-08

Project Manager: **Camille Reynolds**

PLAINS ALL AMERICAN EH&S

1301 S. COUNTY ROAD 1150

Midland, TX 79706

Reference: XENCO Report No: **308807**

E K QUEEN 6" PEARCE

Project Address: Lea County, NW

Camille Reynolds:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 308807. 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.

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Respectfully,

Brent Barron, II

Odessa Laboratory Manager

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PLAINS ALL AMERICAN EH&S, Midland, TX

E K QUEEN 6" PEARCE

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-1 @ 10'	S	Jul-25-08 08:55		308807-001
SB-1 @ 20'	S	Jul-25-08 09:05		308807-002
SB-1 @ 30'	S	Jul-25-08 09:15		308807-003
SB-1 @ 40'	S	Jul-25-08 09:25		308807-004
SB-2 @ 10'	S	Jul-25-08 09:55		308807-005
SB-2 @ 20'	S	Jul-25-08 10:05		308807-006
SB-2 @ 30'	S	Jul-25-08 10:15		308807-007
SB-3 @ 10'	S	Jul-25-08 11:25		308807-008
SB-3 @ 20'	S	Jul-25-08 11:40		308807-009
SB-3 @ 30'	S	Jul-25-08 11:50		308807-010
SB-4 @ 10'	S	Jul-25-08 12:35		308807-011
SB-4 @ 20'	S	Jul-25-08 12:45		308807-012
SB-4 @ 30'	S	Jul-25-08 12:55		308807-013
SB-4 @ 40'	S	Jul-25-08 13:05		308807-014
SB-4 @ 50'	S	Jul-25-08 13:15		308807-015
SB-4 @ 60'	S	Jul-25-08 13:35		308807-016
SB-4 @ 70'	S	Jul-25-08 13:55		308807-017
SB-4 @ 80'	S	Jul-25-08 14:30		308807-018
SB-4 @ 90'	S	Jul-25-08 15:15		308807-019
SB-4 @ 100'	S	Jul-25-08 16:40		308807-020



Certificate of Analysis Summary 308807

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2008-113

Contact: Camille Reynolds

Project Location: Lea County, NW

Project Name: E K QUEEN 6" PEARCE

Date Received in Lab: Tue Jul-29-08 08:30 am

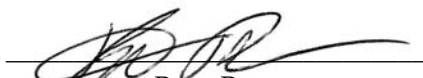
Report Date: 04-AUG-08

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	308807-001	308807-002	308807-003	308807-004	308807-005	308807-006
	<i>Field Id:</i>	SB-1 @ 10'	SB-1 @ 20'	SB-1 @ 30'	SB-1 @ 40'	SB-2 @ 10'	SB-2 @ 20'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-25-08 08:55	Jul-25-08 09:05	Jul-25-08 09:15	Jul-25-08 09:25	Jul-25-08 09:55	Jul-25-08 10:05
BTEX by EPA 8021B	<i>Extracted:</i>	Jul-30-08 10:00	Jul-30-08 10:00	Jul-30-08 10:00	Jul-30-08 10:00	Jul-30-08 10:00	Jul-30-08 10:00
	<i>Analyzed:</i>	Jul-30-08 16:04	Jul-30-08 17:16	Jul-30-08 17:40	Jul-30-08 18:04	Jul-30-08 18:27	Jul-30-08 18:51
	<i>Units/RL:</i>	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	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
Toluene		ND 0.0022	ND 0.0022	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021
Ethylbenzene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
m,p-Xylenes		ND 0.0022	ND 0.0022	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021
o-Xylene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
Total Xylenes		ND	ND	ND	ND	ND	ND
Total BTEX		ND	ND	ND	ND	ND	ND
Percent Moisture	<i>Extracted:</i>	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00
	<i>Analyzed:</i>	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		7.47 1.00	8.33 1.00	5.79 1.00	3.98 1.00	2.75 1.00	3.19 1.00
TPH by SW8015 Mod	<i>Extracted:</i>	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 13:45
	<i>Analyzed:</i>	Jul-30-08 14:27	Jul-29-08 14:17	Jul-30-08 12:42	Jul-30-08 16:20	Jul-30-08 16:47	Jul-30-08 02:22
	<i>Units/RL:</i>	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 16.4	ND 15.9	ND 15.6	ND 15.4	ND 15.0
C12-C28 Diesel Range Hydrocarbons		ND 16.2	19.7 16.4	ND 15.9	ND 15.6	ND 15.4	ND 15.0
C28-C35 Oil Range Hydrocarbons		ND 16.2	ND 16.4	ND 15.9	ND 15.6	ND 15.4	ND 15.0
Total TPH		ND	19.7	ND	ND	ND	ND

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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 Analysis Summary 308807
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2008-113
Contact: Camille Reynolds
Project Location: Lea County, NW

Project Name: E K QUEEN 6" PEARCE

Date Received in Lab: Tue Jul-29-08 08:30 am
Report Date: 04-AUG-08
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	308807-007	308807-008	308807-009	308807-010	308807-011	308807-012
	Field Id:	SB-2 @ 30'	SB-3 @ 10'	SB-3 @ 20'	SB-3 @ 30'	SB-4 @ 10'	SB-4 @ 20'
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jul-25-08 10:15	Jul-25-08 11:25	Jul-25-08 11:40	Jul-25-08 11:50	Jul-25-08 12:35	Jul-25-08 12:45
BTEX by EPA 8021B	Extracted:	Jul-30-08 10:00	Jul-30-08 10:00	Jul-30-08 10:00	Jul-30-08 10:00	Aug-03-08 11:00	Aug-03-08 11:00
	Analyzed:	Jul-30-08 19:15	Jul-30-08 19:39	Jul-30-08 20:51	Jul-30-08 21:15	Aug-04-08 02:36	Aug-04-08 03:00
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	19.62 0.5150	2.721 0.5163
Toluene		ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	240.2 1.030	110.3 1.033
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	168.7 0.5150	130.0 0.5163
m,p-Xylenes		ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	197.5 1.030	171.5 1.033
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	75.06 0.5150	83.38 0.5163
Total Xylenes		ND	ND	ND	ND	272.56	254.88
Total BTEX		ND	ND	ND	ND	701.08	497.901
Percent Moisture	Extracted:	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00
	Analyzed:						
	Units/RL:	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		3.51 1.00	4.09 1.00	5.39 1.00	4.21 1.00	2.92 1.00	3.15 1.00
TPH by SW8015 Mod	Extracted:	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 11:40
	Analyzed:	Jul-30-08 17:14	Jul-30-08 17:43	Jul-30-08 18:11	Jul-30-08 18:40	Jul-30-08 19:39	Jul-30-08 20:06
	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 15.5	ND 15.6	ND 15.9	ND 15.7	24900 386	23400 387
C12-C28 Diesel Range Hydrocarbons		ND 15.5	ND 15.6	ND 15.9	ND 15.7	53000 386	53900 387
C28-C35 Oil Range Hydrocarbons		ND 15.5	ND 15.6	ND 15.9	ND 15.7	8450 386	7870 387
Total TPH		ND	ND	ND	ND	86350	85170

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Brent Barron
Odessa Laboratory Director



Certificate of Analysis Summary 308807

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2008-113

Contact: Camille Reynolds

Project Location: Lea County, NW

Project Name: E K QUEEN 6" PEARCE

Date Received in Lab: Tue Jul-29-08 08:30 am

Report Date: 04-AUG-08

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	308807-013	308807-014	308807-015	308807-016	308807-017	308807-018
	Field Id:	SB-4 @ 30'	SB-4 @ 40'	SB-4 @ 50'	SB-4 @ 60'	SB-4 @ 70'	SB-4 @ 80'
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jul-25-08 12:55	Jul-25-08 13:05	Jul-25-08 13:15	Jul-25-08 13:35	Jul-25-08 13:55	Jul-25-08 14:30
BTEX by EPA 8021B	Extracted:	Aug-01-08 16:00	Jul-30-08 10:00	Jul-30-08 10:00	Jul-30-08 10:00	Jul-30-08 10:00	Jul-30-08 10:00
	Analyzed:	Aug-02-08 17:22	Jul-30-08 22:50	Jul-30-08 23:14	Jul-30-08 23:38	Jul-31-08 00:02	Jul-31-08 00:25
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.0609 0.0512	0.0104 0.0010	0.0066 0.0010	0.0034 0.0011	0.0050 0.0011	0.0018 0.0011
Toluene		0.4793 0.1023	0.0381 0.0021	0.0191 0.0021	0.0116 0.0021	0.0755 0.0022	0.0079 0.0021
Ethylbenzene		0.3975 0.0512	0.0240 0.0010	0.0069 0.0010	0.0053 0.0011	0.0941 0.0011	0.0145 0.0011
m,p-Xylenes		0.4977 0.1023	0.0349 0.0021	0.0078 0.0021	0.0071 0.0021	0.1263 0.0022	0.0254 0.0021
o-Xylene		0.2369 0.0512	0.0208 0.0010	0.0036 0.0010	0.0039 0.0011	0.0703 0.0011	0.0149 0.0011
Total Xylenes		0.7346	0.0557	0.0114	0.011	0.1966	0.0403
Total BTEX		1.6723	0.1282	0.044	0.0313	0.3712	0.0645
Percent Moisture	Extracted:						
	Analyzed:	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00	Jul-30-08 08:00
	Units/RL:	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		2.26 1.00	2.42 1.00	4.19 1.00	6.67 1.00	8.14 1.00	6.08 1.00
TPH by SW8015 Mod	Extracted:	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 11:40	Jul-29-08 13:45
	Analyzed:	Jul-29-08 18:29	Jul-29-08 19:00	Jul-29-08 19:27	Jul-29-08 19:53	Jul-29-08 20:21	Jul-30-08 02:48
	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		67.2 15.0	27.8 15.0	ND 15.0	ND 15.0	43.3 15.0	27.9 15.0
C12-C28 Diesel Range Hydrocarbons		876 15.0	492 15.0	59.8 15.0	224 15.0	801 15.0	669 15.0
C28-C35 Oil Range Hydrocarbons		127 15.0	81.7 15.0	15.9 15.0	36.6 15.0	133 15.0	119 15.0
Total TPH		1070.2	601.5	75.7	260.6	977.3	815.9

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Brent Barron
Odessa Laboratory Director



Certificate of Analysis Summary 308807

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2008-113

Contact: Camille Reynolds

Project Location: Lea County, NW

Project Name: E K QUEEN 6" PEARCE

Date Received in Lab: Tue Jul-29-08 08:30 am

Report Date: 04-AUG-08

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	308807-019	308807-020				
	Field Id:	SB-4 @ 90'	SB-4 @ 100'				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Jul-25-08 15:15	Jul-25-08 16:40				
BTEX by EPA 8021B	Extracted:	Jul-31-08 11:00	Jul-31-08 11:00				
	Analyzed:	Jul-31-08 18:19	Jul-31-08 18:42				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		ND 0.0011	ND 0.0011				
Toluene		0.0031 0.0021	0.0038 0.0022				
Ethylbenzene		0.0016 0.0011	0.0071 0.0011				
m,p-Xylenes		0.0024 0.0021	0.0110 0.0022				
o-Xylene		ND 0.0011	0.0068 0.0011				
Total Xylenes		0.0024	0.0178				
Total BTEX		0.0071	0.0287				
Percent Moisture	Extracted:	Jul-30-08 08:00	Jul-30-08 08:00				
	Analyzed:						
	Units/RL:	% RL	% RL				
Percent Moisture		5.51 1.00	7.73 1.00				
TPH by SW8015 Mod	Extracted:	Jul-29-08 13:45	Jul-29-08 13:45				
	Analyzed:	Jul-30-08 03:15	Jul-30-08 03:42				
	Units/RL:	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 15.0	17.1 15.0				
C12-C28 Diesel Range Hydrocarbons		253 15.0	430 15.0				
C28-C35 Oil Range Hydrocarbons		54.7 15.0	78.2 15.0				
Total TPH		307.7	525.3				

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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(PQL) and above the SQL(MDL).
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.

* Outside XENCO'S scope of NELAC Accreditation

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(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729470

Sample: 308807-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 729470

Sample: 308807-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 729470

Sample: 308807-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 729470

Sample: 308807-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 729470

Sample: 308807-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729470

Sample: 308807-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 729470

Sample: 308807-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 729470

Sample: 308807-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 729470

Sample: 308807-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 729470

Sample: 308807-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0339	0.0300	113	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729470

Sample: 308807-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 729470

Sample: 308807-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 729470

Sample: 308807-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0354	0.0300	118	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 729470

Sample: 308807-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 729470

Sample: 308807-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729470

Sample: 308807-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0403	0.0300	134	80-120	**
4-Bromofluorobenzene	0.0582	0.0300	194	80-120	**

Lab Batch #: 729470

Sample: 308807-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0344	0.0300	115	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 729470

Sample: 512994-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0337	0.0300	112	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 729470

Sample: 512994-1-BSD / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 729725

Sample: 308807-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0347	0.0300	116	80-120	
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729725

Sample: 308807-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0339	0.0300	113	80-120	
4-Bromofluorobenzene	0.0396	0.0300	132	80-120	**

Lab Batch #: 729725

Sample: 308850-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0953	0.0300	318	80-120	**

Lab Batch #: 729725

Sample: 308850-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0348	0.0300	116	80-120	
4-Bromofluorobenzene	0.0757	0.0300	252	80-120	**

Lab Batch #: 729725

Sample: 513100-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 729725

Sample: 513100-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729725

Sample: 513100-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 729840

Sample: 308807-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0351	0.0300	117	80-120	
4-Bromofluorobenzene	0.0375	0.0300	125	80-120	**

Lab Batch #: 729840

Sample: 308887-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

Lab Batch #: 729840

Sample: 308887-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 729840

Sample: 513177-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729840

Sample: 513177-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0347	0.0300	116	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 729840

Sample: 513177-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 729864

Sample: 308807-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0442	0.0300	147	80-120	**
4-Bromofluorobenzene	0.0501	0.0300	167	80-120	**

Lab Batch #: 729864

Sample: 308807-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0457	0.0300	152	80-120	**
4-Bromofluorobenzene	0.0784	0.0300	261	80-120	**

Lab Batch #: 729864

Sample: 308887-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729864

Sample: 308887-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 729864

Sample: 513197-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 729864

Sample: 513197-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0346	0.0300	115	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 729864

Sample: 513197-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 729435

Sample: 308807-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.0	100	95	70-135	
o-Terphenyl	48.4	50.0	97	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729435

Sample: 308807-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.9	100	100	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

Lab Batch #: 729435

Sample: 308807-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.2	100	96	70-135	
o-Terphenyl	57.0	50.0	114	70-135	

Lab Batch #: 729435

Sample: 308807-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.9	100	99	70-135	
o-Terphenyl	53.7	50.0	107	70-135	

Lab Batch #: 729435

Sample: 308807-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.0	100	98	70-135	
o-Terphenyl	54.3	50.0	109	70-135	

Lab Batch #: 729435

Sample: 512968-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	59.1	50.0	118	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729435

Sample: 512968-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.4	100	98	70-135	
o-Terphenyl	50.7	50.0	101	70-135	

Lab Batch #: 729435

Sample: 512968-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.3	100	98	70-135	
o-Terphenyl	51.3	50.0	103	70-135	

Lab Batch #: 729462

Sample: 308657-007 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	94.7	100	95	70-135	
o-Terphenyl	49.6	50.0	99	70-135	

Lab Batch #: 729462

Sample: 308657-007 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.1	100	92	70-135	
o-Terphenyl	48.5	50.0	97	70-135	

Lab Batch #: 729462

Sample: 308807-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.2	100	92	70-135	
o-Terphenyl	47.7	50.0	95	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729462

Sample: 308807-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.6	100	93	70-135	
o-Terphenyl	48.1	50.0	96	70-135	

Lab Batch #: 729462

Sample: 308807-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.1	100	95	70-135	
o-Terphenyl	49.4	50.0	99	70-135	

Lab Batch #: 729462

Sample: 308807-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.3	100	91	70-135	
o-Terphenyl	46.6	50.0	93	70-135	

Lab Batch #: 729462

Sample: 308807-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	93.9	100	94	70-135	
o-Terphenyl	47.9	50.0	96	70-135	

Lab Batch #: 729462

Sample: 308807-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	190	100	190	70-135	**
o-Terphenyl	88.2	50.0	176	70-135	**

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729462

Sample: 308807-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	87.8	100	88	70-135	
o-Terphenyl	45.1	50.0	90	70-135	

Lab Batch #: 729462

Sample: 308807-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	89.1	100	89	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 729462

Sample: 308807-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	88.7	100	89	70-135	
o-Terphenyl	45.9	50.0	92	70-135	

Lab Batch #: 729462

Sample: 308807-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	799	100	799	70-135	**
o-Terphenyl	667	50.0	1334	70-135	**

Lab Batch #: 729462

Sample: 308807-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	891	100	891	70-135	**
o-Terphenyl	668	50.0	1336	70-135	**

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729462

Sample: 308807-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.4	100	92	70-135	
o-Terphenyl	54.2	50.0	108	70-135	

Lab Batch #: 729462

Sample: 308807-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	88.6	100	89	70-135	
o-Terphenyl	49.6	50.0	99	70-135	

Lab Batch #: 729462

Sample: 308807-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	85.7	100	86	70-135	
o-Terphenyl	45.3	50.0	91	70-135	

Lab Batch #: 729462

Sample: 308807-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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	50.3	50.0	101	70-135	

Lab Batch #: 729462

Sample: 308807-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.0	100	92	70-135	
o-Terphenyl	59.0	50.0	118	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID: 2008-113

Lab Batch #: 729462

Sample: 512991-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	56.3	50.0	113	70-135	

Lab Batch #: 729462

Sample: 512991-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

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	52.2	50.0	104	70-135	

Lab Batch #: 729462

Sample: 512991-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.4	100	98	70-135	
o-Terphenyl	50.7	50.0	101	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Blank Spike Recovery



Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Project ID:

2008-113

Lab Batch #: 729470

Sample: 512994-1-BSD

Matrix: Solid

Date Analyzed: 07/30/2008

Date Prepared: 07/30/2008

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 [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	ND	0.0500	0.0459	92	70-130	
Toluene	ND	0.0500	0.0427	85	70-130	
Ethylbenzene	ND	0.0500	0.0469	94	71-129	
m,p-Xylenes	ND	0.1000	0.0988	99	70-135	
o-Xylene	ND	0.0500	0.0475	95	71-133	

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

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



BS / BSD Recoveries



Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Analyst: BRB

Date Prepared: 07/31/2008

Project ID: 2008-113

Date Analyzed: 07/31/2008

Lab Batch ID: 729725

Sample: 513100-1-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 [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											
Benzene	ND	0.0500	0.0500	100	0.05	0.0460	92	8	70-130	35	
Toluene	ND	0.0500	0.0487	97	0.05	0.0445	89	9	70-130	35	
Ethylbenzene	ND	0.0500	0.0552	110	0.05	0.0500	100	10	71-129	35	
m,p-Xylenes	ND	0.1000	0.1159	116	0.1	0.1048	105	10	70-135	35	
o-Xylene	ND	0.0500	0.0564	113	0.05	0.0513	103	9	71-133	35	

Analyst: ASA

Date Prepared: 08/01/2008

Date Analyzed: 08/02/2008

Lab Batch ID: 729840

Sample: 513177-1-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 [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											
Benzene	ND	0.1000	0.1149	115	0.1	0.1060	106	8	70-130	35	
Toluene	ND	0.1000	0.1132	113	0.1	0.1050	105	8	70-130	35	
Ethylbenzene	ND	0.1000	0.1230	123	0.1	0.1147	115	7	71-129	35	
m,p-Xylenes	ND	0.2000	0.2527	126	0.2	0.2359	118	7	70-135	35	
o-Xylene	ND	0.1000	0.1167	117	0.1	0.1094	109	6	71-133	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Analyst: BRB

Date Prepared: 08/03/2008

Project ID: 2008-113

Date Analyzed: 08/03/2008

Lab Batch ID: 729864

Sample: 513197-1-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 [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											
Benzene	ND	0.1000	0.0877	88	0.1	0.0833	83	5	70-130	35	
Toluene	ND	0.1000	0.0926	93	0.1	0.0882	88	5	70-130	35	
Ethylbenzene	ND	0.1000	0.1066	107	0.1	0.1018	102	5	71-129	35	
m,p-Xylenes	ND	0.2000	0.2234	112	0.2	0.2124	106	5	70-135	35	
o-Xylene	ND	0.1000	0.1057	106	0.1	0.1006	101	5	71-133	35	

Analyst: ASA

Date Prepared: 07/29/2008

Date Analyzed: 07/30/2008

Lab Batch ID: 729435

Sample: 512968-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	964	96	1000	883	88	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1020	102	1000	931	93	9	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Analyst: ASA

Date Prepared: 07/29/2008

Project ID: 2008-113

Date Analyzed: 07/29/2008

Lab Batch ID: 729462

Sample: 512991-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	969	97	1000	882	88	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1020	102	1000	921	92	10	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries



Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Lab Batch #: 729435

Date Analyzed: 07/30/2008

QC- Sample ID: 308807-006 S

Reporting Units: mg/kg

Date Prepared: 07/29/2008

Batch #: 1

Project ID: 2008-113

Analyst: ASA

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY

TPH by SW8015 Mod	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
C6-C12 Gasoline Range Hydrocarbons	ND	1000	884	88	70-135	
C12-C28 Diesel Range Hydrocarbons	ND	1000	935	94	70-135	

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



Form 3 - MS / MSD Recoveries



Project Name: E K QUEEN 6" PEARCE

Work Order # : 308807

Project ID: 2008-113

Lab Batch ID: 729470

QC- Sample ID: 308807-001 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 07/30/2008

Date Prepared: 07/30/2008

Analyst: BRB

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1081	0.0364	34	0.1081	0.0348	32	6	70-130	35	X
Toluene	ND	0.1081	0.0343	32	0.1081	0.0329	30	6	70-130	35	X
Ethylbenzene	ND	0.1081	0.0370	34	0.1081	0.0354	33	3	71-129	35	X
m,p-Xylenes	ND	0.2161	0.0778	36	0.2161	0.0744	34	6	70-135	35	X
o-Xylene	ND	0.1081	0.0378	35	0.1081	0.0363	34	3	71-133	35	X

Lab Batch ID: 729725

QC- Sample ID: 308850-001 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 07/31/2008

Date Prepared: 07/31/2008

Analyst: BRB

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0015	0.0508	0.0278	52	0.0508	0.0261	48	8	70-130	35	X
Toluene	0.0092	0.0508	0.0189	19	0.0508	0.0173	16	17	70-130	35	X
Ethylbenzene	0.0079	0.0508	0.0135	11	0.0508	0.0136	11	0	71-129	35	X
m,p-Xylenes	0.0232	0.1016	0.0352	12	0.1016	0.0315	8	40	70-135	35	XF
o-Xylene	0.0136	0.0508	0.0203	13	0.0508	0.0182	9	36	71-133	35	XF

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Form 3 - MS / MSD Recoveries



Project Name: E K QUEEN 6" PEARCE

Work Order # : 308807

Project ID: 2008-113

Lab Batch ID: 729840

QC- Sample ID: 308887-002 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 08/02/2008

Date Prepared: 08/01/2008

Analyst: ASA

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1299	0.1199	92	0.1299	0.1186	91	1	70-130	35	
Toluene	ND	0.1299	0.1189	92	0.1299	0.1174	90	2	70-130	35	
Ethylbenzene	ND	0.1299	0.1260	97	0.1299	0.1258	97	0	71-129	35	
m,p-Xylenes	ND	0.2598	0.2592	100	0.2598	0.2584	99	1	70-135	35	
o-Xylene	ND	0.1299	0.1188	91	0.1299	0.1171	90	1	71-133	35	

Lab Batch ID: 729864

QC- Sample ID: 308887-004 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 08/04/2008

Date Prepared: 08/03/2008

Analyst: BRB

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1307	0.0938	72	0.1307	0.0981	75	4	70-130	35	
Toluene	ND	0.1307	0.0978	75	0.1307	0.1026	79	5	70-130	35	
Ethylbenzene	ND	0.1307	0.1100	84	0.1307	0.1161	89	6	71-129	35	
m,p-Xylenes	ND	0.2615	0.2291	88	0.2615	0.2416	92	4	70-135	35	
o-Xylene	ND	0.1307	0.1077	82	0.1307	0.1129	86	5	71-133	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Form 3 - MS / MSD Recoveries



Project Name: E K QUEEN 6" PEARCE

Work Order # : 308807

Project ID: 2008-113

Lab Batch ID: 729462

QC- Sample ID: 308657-007 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/29/2008

Date Prepared: 07/29/2008

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1120	956	85	1120	942	84	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1120	943	84	1120	967	86	2	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Sample Duplicate Recovery



Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Lab Batch #: 729500

Project ID: 2008-113

Date Analyzed: 07/30/2008

Date Prepared: 07/30/2008

Analyst: IRO

QC- Sample ID: 308807-001 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	7.47	6.59	13	20	

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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

Project Name: **E K QUEEN 6" PEARCE**

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA - C. J. Reynolds

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: cstanley@basinenv.com

ORDER #: 308807

Special Instructions:

Temperature Upon Receipt: 40.7, 30.5 °C

by Sampler/Client Rep.?
by Courier? UPS

Time

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

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

Project Manager: Curt Stanley PAGE 01 OF 02

Project Name: E K QUEEN 6" PEARCE

Company Name: Basin Environmental Service Technologies, LLC

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - C. J. Reynolds

Telephone No: (505) 441-2244 Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

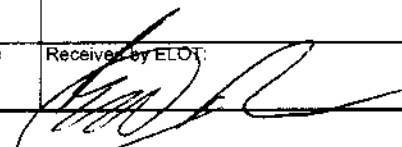
Sampler Signature:  e-mail: cstanley@basinenv.com

(lab use only)

ORDER #: 308807

Sample Signature: _____		e-mail: _____		costanley@ashmetv.com	
(lab use only)		Analyze For:			
ORDER #: 308807		TCLP:			
		TOTAL:		X	
		TPH: 418 1 4015M		8015R	
		TPH: TX 1005 TX 1006		TX 1006	
		Cations (Ca, Mg, Na, K)			
		Anions (Cl, SO4, Alkalinity)			
		SAR / ESP / CEC			
		Metals: As Ag Ba Cd Cr Pb Hg Se			
		Volatiles			
		Semivolatiles			
		BTEX 80218/5010 or BTEX 8260			
		RCL			
		N.O.R.M.			

Special Instructions:

Relinquished by: <u></u>	Date: <u>7/29/08</u>	Time: <u>8:30</u>	Received by:	Date:	Time:
Relinquished by: <u></u>	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by: <u></u>	Date: <u>7/29/08</u>	Time: <u>8:30</u>

Laboratory Comments:

Sample Containers Intact?
VOCs Free of Headspace?
Labels on container(s)
Custody seals on container(s)
Custody seals on cooler(s)
Sample Hand Delivered
by Sample Client Rep.?
by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt:

4070.5°C

N
N
N
N
N
N
N

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin Environmental
 Date/ Time: 7/29/08 8:30
 Lab ID #: 308807
 Initials: JG

Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	<u>Yes</u>	No	0.5 °C
#2	Shipping container in good condition?	<u>Yes</u>	No	
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present
#5	Chain of Custody present?	<u>Yes</u>	No	
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No	
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No	
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No	
#11	Containers supplied by ELOT?	<u>Yes</u>	No	
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below
#13	Samples properly preserved?	<u>Yes</u>	No	See Below
#14	Sample bottles intact?	<u>Yes</u>	No	
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No	
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No	
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below
#19	Subcontract of sample(s)?	<u>Yes</u>	No	<u>Not Applicable</u>
#20	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable

Variance Documentation

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

Regarding: _____

Corrective Action Taken:

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

Analytical Report 315760

for

PLAINS ALL AMERICAN EH&S

Project Manager: Daniel Bryant

EK Queen Pearce 6"

2008-113

31-OCT-08



E84880

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:

Houston, TX T104704215 - Odessa/Midland, TX T104704215-08-TX

Florida certification numbers:

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

South Carolina certification numbers:

Norcross(Atlanta), GA 98015

North Carolina certification numbers:

Norcross(Atlanta), GA 483

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



31-OCT-08

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

Reference: XENCO Report No: **315760**
EK Queen Pearce 6"
Project Address: Lea County, NM

Daniel 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 315760. 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. 315760 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 315760

PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce 6"

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
N-1 S/W	S	Oct-23-08 16:00		315760-001
E-1 S/W	S	Oct-23-08 16:04		315760-002
W-1 S/W	S	Oct-23-08 16:11		315760-003
E-2 S/W	S	Oct-23-08 16:20		315760-004
S-1 S/W	S	Oct-23-08 16:25		315760-005
N-2 S/W	S	Oct-23-08 16:30		315760-006
S-2 S/W	S	Oct-23-08 16:34		315760-007
W-2 S/W	S	Oct-23-08 16:38		315760-008



Certificate of Analysis Summary 315760

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Daniel Bryant

Project Name: EK Queen Pearce 6"

Date Received in Lab: Fri Oct-24-08 05:25 pm

Report Date: 31-OCT-08

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	315760-001	315760-002	315760-003	315760-004	315760-005	315760-006
	<i>Field Id:</i>	N-1 S/W	E-1 S/W	W-1 S/W	E-2 S/W	S-1 S/W	N-2 S/W
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-23-08 16:00	Oct-23-08 16:04	Oct-23-08 16:11	Oct-23-08 16:20	Oct-23-08 16:25	Oct-23-08 16:30
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-30-08 16:15			Oct-30-08 16:15	Oct-30-08 16:15	Oct-30-08 16:15
	<i>Analyzed:</i>	Oct-30-08 21:51			Oct-30-08 22:13	Oct-30-08 22:35	Oct-30-08 22:57
	<i>Units/RL:</i>	mg/kg RL			mg/kg RL	mg/kg RL	mg/kg RL
Benzene		ND 0.0051			ND 0.0052	ND 0.0052	ND 0.0051
Toluene		ND 0.0102			ND 0.0104	ND 0.0104	ND 0.0101
Ethylbenzene		ND 0.0051			ND 0.0052	ND 0.0052	ND 0.0051
m,p-Xylenes		ND 0.0102			ND 0.0104	ND 0.0104	ND 0.0101
o-Xylene		ND 0.0051			ND 0.0052	ND 0.0052	ND 0.0051
Total Xylenes		ND			ND	ND	ND
Total BTEX		ND			ND	ND	ND
Percent Moisture	<i>Extracted:</i>	Oct-27-08 17:00	Oct-27-08 17:00	Oct-27-08 17:00	Oct-27-08 17:00	Oct-27-08 17:00	Oct-27-08 17:00
	<i>Analyzed:</i>	Oct-27-08 17:00	Oct-27-08 17:00	Oct-27-08 17:00	Oct-27-08 17:00	Oct-27-08 17:00	Oct-27-08 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		1.56 1.00	7.75 1.00	8.82 1.00	3.67 1.00	3.73 1.00	1.30 1.00
TPH By SW8015 Mod	<i>Extracted:</i>	Oct-27-08 14:30	Oct-27-08 14:30	Oct-27-08 14:30	Oct-27-08 14:30	Oct-27-08 14:30	Oct-27-08 14:30
	<i>Analyzed:</i>	Oct-28-08 07:14	Oct-28-08 07:40	Oct-28-08 08:06	Oct-28-08 08:32	Oct-28-08 08:59	Oct-28-08 16:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		ND 15.2	33.1 16.3	16.6 16.5	ND 15.6	ND 15.6	ND 15.2
C12-C28 Diesel Range Hydrocarbons		ND 15.2	771 16.3	1160 16.5	21.8 15.6	ND 15.6	ND 15.2
C28-C35 Oil Range Hydrocarbons		ND 15.2	117 16.3	279 16.5	21.9 15.6	ND 15.6	ND 15.2
Total TPH		ND	921.1	1455.6	43.7	ND	ND

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

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Brent Barron
Odessa Laboratory Director



Certificate of Analysis Summary 315760
PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113
Contact: Daniel Bryant
Project Location: Lea County, NM

Project Name: EK Queen Pearce 6"

Date Received in Lab: Fri Oct-24-08 05:25 pm
Report Date: 31-OCT-08
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	315760-007	315760-008				
	Field Id:	S-2 S/W	W-2 S/W				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Oct-23-08 16:34	Oct-23-08 16:38				
BTEX by EPA 8021B	Extracted:	Oct-30-08 16:15					
	Analyzed:	Oct-30-08 23:19					
	Units/RL:	mg/kg RL					
Benzene		ND 0.0053					
Toluene		ND 0.0106					
Ethylbenzene		ND 0.0053					
m,p-Xylenes		ND 0.0106					
o-Xylene		ND 0.0053					
Total Xylenes		ND					
Total BTEX		ND					
Percent Moisture	Extracted:	Oct-27-08 17:00	Oct-27-08 17:00				
	Analyzed:						
	Units/RL:	% RL	% RL				
Percent Moisture		5.74 1.00	1.88 1.00				
TPH By SW8015 Mod	Extracted:	Oct-27-08 14:30	Oct-27-08 14:30				
	Analyzed:	Oct-28-08 09:53	Oct-28-08 10:18				
	Units/RL:	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 15.9	ND 15.3				
C12-C28 Diesel Range Hydrocarbons		ND 15.9	396 15.3				
C28-C35 Oil Range Hydrocarbons		ND 15.9	86.6 15.3				
Total TPH		ND	482.6				

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.

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(PQL) and above the SQL(MDL).
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.

* Outside XENCO'S scope of NELAC Accreditation

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Certified and approved by numerous States and Agencies.

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2505 N. Falkenburg Rd., Tampa, FL 33619
5757 NW 158th St, Miami Lakes, FL 33014
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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 315760,

Project ID: 2008-113

Lab Batch #: 738706

Sample: 315760-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0234	0.0300	78	80-120	**

Lab Batch #: 738706

Sample: 315760-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0250	0.0300	83	80-120	

Lab Batch #: 738706

Sample: 315760-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0212	0.0300	71	80-120	**

Lab Batch #: 738706

Sample: 315760-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0230	0.0300	77	80-120	**

Lab Batch #: 738706

Sample: 315760-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0387	0.0300	129	80-120	**

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 315760,

Project ID: 2008-113

Lab Batch #: 738706

Sample: 315760-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

Lab Batch #: 738706

Sample: 315760-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0210	0.0300	70	80-120	**

Lab Batch #: 738706

Sample: 518351-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 738706

Sample: 518351-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0213	0.0300	71	80-120	**

Lab Batch #: 738706

Sample: 518351-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 315760,

Project ID: 2008-113

Lab Batch #: 738479

Sample: 315760-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	54.3	50.0	109	70-135	

Lab Batch #: 738479

Sample: 315760-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	59.5	50.0	119	70-135	

Lab Batch #: 738479

Sample: 315760-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	60.9	50.0	122	70-135	

Lab Batch #: 738479

Sample: 315760-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	63.0	50.0	126	70-135	

Lab Batch #: 738479

Sample: 315760-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	131	100	131	70-135	
o-Terphenyl	77.6	50.0	155	70-135	**

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 315760,

Project ID: 2008-113

Lab Batch #: 738479

Sample: 315760-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	132	100	132	70-135	
o-Terphenyl	64.5	50.0	129	70-135	

Lab Batch #: 738479

Sample: 315760-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	55.8	50.0	112	70-135	

Lab Batch #: 738479

Sample: 315760-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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	55.6	50.0	111	70-135	

Lab Batch #: 738479

Sample: 315760-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	54.7	50.0	109	70-135	

Lab Batch #: 738479

Sample: 315760-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	59.0	50.0	118	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 315760,

Project ID: 2008-113

Lab Batch #: 738479

Sample: 518217-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	59.2	50.0	118	70-135	

Lab Batch #: 738479

Sample: 518217-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	58.8	50.0	118	70-135	

Lab Batch #: 738479

Sample: 518217-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	65.0	50.0	130	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: EK Queen Pearce 6"

Work Order #: 315760

Analyst: ASA

Date Prepared: 10/30/2008

Project ID: 2008-113

Date Analyzed: 10/30/2008

Lab Batch ID: 738706

Sample: 518351-1-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 [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											
Benzene	ND	0.5000	0.4784	96	0.5	0.4682	94	2	70-130	35	
Toluene	ND	0.5000	0.4916	98	0.5	0.4755	95	3	70-130	35	
Ethylbenzene	ND	0.5000	0.4873	97	0.5	0.4575	92	6	71-129	35	
m,p-Xylenes	ND	1.000	1.100	110	1	1.023	102	7	70-135	35	
o-Xylene	ND	0.5000	0.5111	102	0.5	0.4732	95	8	71-133	35	

Analyst: ASA

Date Prepared: 10/27/2008

Date Analyzed: 10/28/2008

Lab Batch ID: 738479

Sample: 518217-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	849	85	1000	839	84	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	897	90	1000	881	88	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: EK Queen Pearce 6"

Work Order #: 315760

Project ID: 2008-113

Lab Batch ID: 738706

QC- Sample ID: 315760-006 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/31/2008

Date Prepared: 10/30/2008

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.5066	0.0923	18	0.5066	0.1567	31	53	70-130	35	XF
Toluene	ND	0.5066	0.2428	48	0.5066	0.2280	45	6	70-130	35	X
Ethylbenzene	ND	0.5066	0.2900	57	0.5066	0.2664	53	7	71-129	35	X
m,p-Xylenes	ND	1.013	0.9000	89	1.013	0.7311	72	21	70-135	35	
o-Xylene	ND	0.5066	0.4241	84	0.5066	0.3403	67	23	71-133	35	X

Lab Batch ID: 738479

QC- Sample ID: 315760-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/28/2008

Date Prepared: 10/27/2008

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1020	813	80	1020	809	79	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1020	889	87	1020	885	87	0	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Sample Duplicate Recovery



Project Name: EK Queen Pearce 6"

Work Order #: 315760

Lab Batch #: 738311

Project ID: 2008-113

Date Analyzed: 10/27/2008

Date Prepared: 10/27/2008

Analyst: BEV

QC- Sample ID: 738311-1 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	7.28	7.28	NC	20	

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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

Project Name: **EK Queen Pearce 6"**

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA - D. Bryant

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: cjbryant@basin-consulting.com

[illegible]

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Plains / Basin Env.
 Date/ Time: 10-24-08 17:27
 Lab ID #: 315740
 Initials: AL

Sample Receipt Checklist

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

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 322297

for

PLAINS ALL AMERICAN EH&S

Project Manager: Daniel Bryant

EK Queen Pearce 6"

2008-113

15-JAN-09



12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:

Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:

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

South Carolina certification numbers:

Norcross(Atlanta), GA 98015

North Carolina certification numbers:

Norcross(Atlanta), GA 483

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



15-JAN-09

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

Reference: XENCO Report No: **322297**
EK Queen Pearce 6"
Project Address: Lea County, NM

Daniel 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 322297. 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. 322297 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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Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America

PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce 6"

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1 10'	S	Jan-06-09 10:00		322297-001
MW-1 30'	S	Jan-06-09 10:10		322297-002
MW-1 50'	S	Jan-06-09 10:30		322297-003
MW-1 70'	S	Jan-06-09 10:55		322297-004
MW-1 90'	S	Jan-06-09 11:20		322297-005
MW-1 110'	S	Jan-06-09 11:50		322297-006
MW-1 127'	S	Jan-06-09 12:35		322297-007
MW-2 10'	S	Jan-07-09 11:00		322297-008
MW-2 30'	S	Jan-07-09 11:10		322297-009
MW-2 50'	S	Jan-07-09 11:30		322297-010
MW-2 70'	S	Jan-07-09 11:50		322297-011
MW-2 95'	S	Jan-07-09 12:15		322297-012
MW-2 110'	S	Jan-07-09 12:40		322297-013
MW-2 120'	S	Jan-07-09 13:15		322297-014
MW-3 10'	S	Jan-08-09 09:30		322297-015
MW-3 35'	S	Jan-08-09 09:40		322297-016
MW-3 50'	S	Jan-08-09 09:55		322297-017
MW-3 70'	S	Jan-08-09 10:15		322297-018
MW-3 90'	S	Jan-08-09 10:40		322297-019
MW-3 110'	S	Jan-08-09 11:10		322297-020
MW-3 113'	S	Jan-08-09 11:50		322297-021
SB-5 10'	S	Jan-09-09 10:20		322297-022
SB-5 20'	S	Jan-09-09 10:25		322297-023
SB-5 30'	S	Jan-09-09 10:35		322297-024
SB-5 40'	S	Jan-09-09 10:45		322297-025
SB-5 50'	S	Jan-09-09 11:00		322297-026
SB-5 60'	S	Jan-09-09 11:20		322297-027



Certificate of Analysis Summary 322297

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Daniel Bryant

Project Name: EK Queen Pearce 6"

Date Received in Lab: Tue Jan-13-09 10:36 am

Report Date: 15-JAN-09

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	322297-001	322297-002	322297-003	322297-004	322297-005	322297-006
	<i>Field Id:</i>	MW-1 10'	MW-1 30'	MW-1 50'	MW-1 70'	MW-1 90'	MW-1 110'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-06-09 10:00	Jan-06-09 10:10	Jan-06-09 10:30	Jan-06-09 10:55	Jan-06-09 11:20	Jan-06-09 11:50
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15
	<i>Analyzed:</i>	Jan-14-09 04:46	Jan-14-09 05:07	Jan-14-09 05:28	Jan-14-09 05:48	Jan-14-09 06:09	Jan-14-09 06:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011
Toluene		ND 0.0021	ND 0.0021	ND 0.0020	ND 0.0020	ND 0.0021	ND 0.0021
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011
m,p-Xylenes		ND 0.0021	ND 0.0021	ND 0.0020	ND 0.0020	ND 0.0021	ND 0.0021
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011
Total Xylenes		ND 0.0021	ND 0.0021	ND 0.0020	ND 0.0020	ND 0.0021	ND 0.0021
Total BTEX		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011
Percent Moisture	<i>Extracted:</i>	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00
	<i>Analyzed:</i>						
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		3.56 1.00	2.43 1.00	1.18 1.00	1.42 1.00	2.84 1.00	6.79 1.00
TPH By SW8015 Mod	<i>Extracted:</i>	Jan-13-09 13:30	Jan-13-09 13:30	Jan-13-09 13:30	Jan-13-09 13:30	Jan-13-09 13:30	Jan-13-09 13:30
	<i>Analyzed:</i>	Jan-13-09 21:50	Jan-13-09 22:15	Jan-13-09 22:40	Jan-13-09 23:05	Jan-13-09 23:30	Jan-13-09 23:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		ND 15.6	ND 15.4	ND 15.2	ND 15.2	ND 15.4	ND 16.1
C12-C28 Diesel Range Hydrocarbons		ND 15.6	ND 15.4	ND 15.2	ND 15.2	ND 15.4	36.0 16.1
C28-C35 Oil Range Hydrocarbons		ND 15.6	ND 15.4	ND 15.2	ND 15.2	ND 15.4	ND 16.1
Total TPH		ND 15.6	ND 15.4	ND 15.2	ND 15.2	ND 15.4	36 16.1

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Brent Barron
Odessa Laboratory Director



Certificate of Analysis Summary 322297
PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113
Contact: Daniel Bryant
Project Location: Lea County, NM

Project Name: EK Queen Pearce 6"

Date Received in Lab: Tue Jan-13-09 10:36 am
Report Date: 15-JAN-09
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	322297-007	322297-008	322297-009	322297-010	322297-011	322297-012
	Field Id:	MW-1 127'	MW-2 10'	MW-2 30'	MW-2 50'	MW-2 70'	MW-2 95'
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jan-06-09 12:35	Jan-07-09 11:00	Jan-07-09 11:10	Jan-07-09 11:30	Jan-07-09 11:50	Jan-07-09 12:15
TPH By SW8015 Mod	Extracted:	Jan-13-09 13:30	Jan-14-09 14:30	Jan-14-09 14:30	Jan-14-09 14:30	Jan-14-09 14:30	Jan-14-09 14:30
	Analyzed:	Jan-14-09 00:20	Jan-14-09 16:24	Jan-14-09 16:46	Jan-14-09 17:08	Jan-14-09 17:31	Jan-14-09 17:54
	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 15.3	ND 15.3	ND 15.2	ND 15.3	ND 16.0
C12-C28 Diesel Range Hydrocarbons		17.7 16.2	ND 15.3	ND 15.3	ND 15.2	ND 15.3	ND 16.0
C28-C35 Oil Range Hydrocarbons		ND 16.2	ND 15.3	ND 15.3	ND 15.2	ND 15.3	ND 16.0
Total TPH		17.7 16.2	ND 15.3	ND 15.3	ND 15.2	ND 15.3	ND 16.0

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Date Received in Lab: Tue Jan-13-09 10:36 am

Report Date: 15-JAN-09

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	322297-007	322297-008	322297-009	322297-010	322297-011	322297-012
	<i>Field Id:</i>	MW-1 127'	MW-2 10'	MW-2 30'	MW-2 50'	MW-2 70'	MW-2 95'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-06-09 12:35	Jan-07-09 11:00	Jan-07-09 11:10	Jan-07-09 11:30	Jan-07-09 11:50	Jan-07-09 12:15
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15
	<i>Analyzed:</i>	Jan-14-09 06:50	Jan-14-09 07:11	Jan-14-09 07:31	Jan-14-09 07:52	Jan-14-09 08:54	Jan-14-09 09:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011
Toluene		ND 0.0022	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0021
Ethylbenzene		ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011
m,p-Xylenes		ND 0.0022	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0021
o-Xylene		ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011
Total Xylenes		ND 0.0022	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0021
Total BTEX		ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011
Percent Moisture	<i>Extracted:</i>	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00
	<i>Analyzed:</i>	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		7.14 1.00	2.22 1.00	1.91 1.00	1.13 1.00	1.91 1.00	6.10 1.00

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Brent Barron
Odessa Laboratory Director



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Project Id: 2008-113

Contact: Daniel Bryant

Project Name: EK Queen Pearce 6"

Date Received in Lab: Tue Jan-13-09 10:36 am

Report Date: 15-JAN-09

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	322297-013	322297-014	322297-015	322297-016	322297-017	322297-018
	<i>Field Id:</i>	MW-2 110'	MW-2 120'	MW-3 10'	MW-3 35'	MW-3 50'	MW-3 70'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-07-09 12:40	Jan-07-09 13:15	Jan-08-09 09:30	Jan-08-09 09:40	Jan-08-09 09:55	Jan-08-09 10:15
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:15
	<i>Analyzed:</i>	Jan-14-09 09:36	Jan-14-09 09:57	Jan-14-09 10:39	Jan-14-09 11:00	Jan-14-09 11:21	Jan-14-09 11:43
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
Toluene		ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
m,p-Xylenes		ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
Total Xylenes		ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021
Total BTEX		ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
Percent Moisture	<i>Extracted:</i>	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00
	<i>Analyzed:</i>						
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		3.74 1.00	4.61 1.00	4.90 1.00	2.89 1.00	3.75 1.00	3.73 1.00
TPH By SW8015 Mod	<i>Extracted:</i>	Jan-14-09 14:30	Jan-14-09 14:30	Jan-14-09 14:30	Jan-14-09 14:30	Jan-14-09 14:30	Jan-14-09 14:30
	<i>Analyzed:</i>	Jan-14-09 18:17	Jan-14-09 19:03	Jan-14-09 19:27	Jan-14-09 19:50	Jan-14-09 20:13	Jan-14-09 20:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		ND 15.6	ND 15.7	ND 15.8	ND 15.4	ND 15.6	ND 15.6
C12-C28 Diesel Range Hydrocarbons		ND 15.6	ND 15.7	ND 15.8	ND 15.4	ND 15.6	ND 15.6
C28-C35 Oil Range Hydrocarbons		ND 15.6	ND 15.7	ND 15.8	ND 15.4	ND 15.6	ND 15.6
Total TPH		ND 15.6	ND 15.7	ND 15.8	ND 15.4	ND 15.6	ND 15.6

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Brent Barron
Odessa Laboratory Director



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PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Daniel Bryant

Project Name: EK Queen Pearce 6"

Date Received in Lab: Tue Jan-13-09 10:36 am

Report Date: 15-JAN-09

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	322297-019	322297-020	322297-021	322297-022	322297-023	322297-024
	<i>Field Id:</i>	MW-3 90'	MW-3 110'	MW-3 113'	SB-5 10'	SB-5 20'	SB-5 30'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-08-09 10:40	Jan-08-09 11:10	Jan-08-09 11:50	Jan-09-09 10:20	Jan-09-09 10:25	Jan-09-09 10:35
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-13-09 13:15	Jan-13-09 13:15	Jan-13-09 13:00	Jan-13-09 13:00	Jan-13-09 13:00	Jan-13-09 13:00
	<i>Analyzed:</i>	Jan-14-09 12:04	Jan-14-09 12:25	Jan-13-09 22:07	Jan-13-09 22:28	Jan-13-09 22:49	Jan-13-09 23:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0011
Toluene		ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0022	ND 0.0021	ND 0.0021
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0011
m,p-Xylenes		ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0022	ND 0.0021	ND 0.0021
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0011
Total Xylenes		ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0022	ND 0.0021	ND 0.0021
Total BTEX		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0011
Percent Moisture	<i>Extracted:</i>	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00
	<i>Analyzed:</i>	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		4.33 1.00	3.09 1.00	3.61 1.00	9.75 1.00	4.67 1.00	5.99 1.00
TPH By SW8015 Mod	<i>Extracted:</i>	Jan-14-09 14:30	Jan-14-09 14:30	Jan-14-09 14:30	Jan-14-09 14:30	Jan-14-09 14:30	Jan-14-09 15:00
	<i>Analyzed:</i>	Jan-14-09 21:00	Jan-14-09 21:23	Jan-14-09 21:46	Jan-14-09 22:10	Jan-14-09 22:33	Jan-15-09 02:47
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		ND 15.7	ND 15.5	ND 15.6	ND 16.6	ND 15.7	ND 16.0
C12-C28 Diesel Range Hydrocarbons		ND 15.7	ND 15.5	ND 15.6	ND 16.6	ND 15.7	ND 16.0
C28-C35 Oil Range Hydrocarbons		ND 15.7	ND 15.5	ND 15.6	ND 16.6	ND 15.7	ND 16.0
Total TPH		ND 15.7	ND 15.5	ND 15.6	ND 16.6	ND 15.7	ND 16.0

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Brent Barron
Odessa Laboratory Director



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Project Id: 2008-113

Contact: Daniel Bryant

Project Name: EK Queen Pearce 6"

Date Received in Lab: Tue Jan-13-09 10:36 am

Report Date: 15-JAN-09

Project Location: Lea County, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	322297-025	322297-026	322297-027			
	Field Id:	SB-5 40'	SB-5 50'	SB-5 60'			
	Depth:						
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Jan-09-09 10:45	Jan-09-09 11:00	Jan-09-09 11:20			
BTEX by EPA 8021B	Extracted:	Jan-13-09 13:00	Jan-13-09 13:00	Jan-13-09 13:00			
	Analyzed:	Jan-13-09 23:32	Jan-13-09 23:53	Jan-14-09 00:14			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		ND 0.0010	ND 0.0011	ND 0.0011			
Toluene		ND 0.0021	ND 0.0021	ND 0.0022			
Ethylbenzene		ND 0.0010	ND 0.0011	ND 0.0011			
m,p-Xylenes		ND 0.0021	ND 0.0021	ND 0.0022			
o-Xylene		ND 0.0010	ND 0.0011	ND 0.0011			
Total Xylenes		ND 0.0021	ND 0.0021	ND 0.0022			
Total BTEX		ND 0.0010	ND 0.0011	ND 0.0011			
Percent Moisture	Extracted:						
	Analyzed:	Jan-13-09 17:00	Jan-13-09 17:00	Jan-13-09 17:00			
	Units/RL:	% RL	% RL	% RL			
Percent Moisture		3.79 1.00	5.63 1.00	8.76 1.00			
TPH By SW8015 Mod	Extracted:	Jan-14-09 15:00	Jan-14-09 15:00	Jan-14-09 15:00			
	Analyzed:	Jan-15-09 03:10	Jan-15-09 03:33	Jan-15-09 03:56			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
C6-C12 Gasoline Range Hydrocarbons		ND 15.6	ND 15.9	ND 16.4			
C12-C28 Diesel Range Hydrocarbons		ND 15.6	ND 15.9	ND 16.4			
C28-C35 Oil Range Hydrocarbons		ND 15.6	ND 15.9	ND 16.4			
Total TPH		ND 15.6	ND 15.9	ND 16.4			

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Brent Barron
Odessa Laboratory Director

- 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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746367

Sample: 322296-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 746367

Sample: 322296-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 746367

Sample: 322297-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 746367

Sample: 322297-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0336	0.0300	112	80-120	

Lab Batch #: 746367

Sample: 322297-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0324	0.0300	108	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746367

Sample: 322297-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 746367

Sample: 322297-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 746367

Sample: 322297-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 746367

Sample: 322297-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 746367

Sample: 522852-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746367

Sample: 522852-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 746367

Sample: 522852-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 746371

Sample: 322297-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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

Lab Batch #: 746371

Sample: 322297-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 746371

Sample: 322297-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746371

Sample: 322297-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 746371

Sample: 322297-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 746371

Sample: 322297-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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

Lab Batch #: 746371

Sample: 322297-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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

Lab Batch #: 746371

Sample: 322297-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746371

Sample: 322297-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 746371

Sample: 322297-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 746371

Sample: 322297-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 746371

Sample: 322297-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 746371

Sample: 322297-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746371

Sample: 322297-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 746371

Sample: 322297-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 746371

Sample: 322297-015 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 746371

Sample: 322297-015 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 746371

Sample: 322297-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746371

Sample: 322297-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 746371

Sample: 322297-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 746371

Sample: 322297-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 746371

Sample: 322297-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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

Lab Batch #: 746371

Sample: 522855-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746371

Sample: 522855-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

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

Lab Batch #: 746371

Sample: 522855-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 746422

Sample: 322296-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	48.9	50.0	98	70-135	

Lab Batch #: 746422

Sample: 322296-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	48.4	50.0	97	70-135	

Lab Batch #: 746422

Sample: 322297-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	54.5	50.0	109	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746422

Sample: 322297-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.8	100	97	70-135	
o-Terphenyl	51.4	50.0	103	70-135	

Lab Batch #: 746422

Sample: 322297-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	97.6	100	98	70-135	
o-Terphenyl	51.5	50.0	103	70-135	

Lab Batch #: 746422

Sample: 322297-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.8	100	99	70-135	
o-Terphenyl	52.4	50.0	105	70-135	

Lab Batch #: 746422

Sample: 322297-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.0	100	99	70-135	
o-Terphenyl	53.0	50.0	106	70-135	

Lab Batch #: 746422

Sample: 322297-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.3	100	99	70-135	
o-Terphenyl	53.7	50.0	107	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746422

Sample: 322297-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	93.5	100	94	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

Lab Batch #: 746422

Sample: 522884-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	51.6	50.0	103	70-135	

Lab Batch #: 746422

Sample: 522884-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.4	100	98	70-135	
o-Terphenyl	54.6	50.0	109	70-135	

Lab Batch #: 746422

Sample: 522884-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	52.5	50.0	105	70-135	

Lab Batch #: 746545

Sample: 322297-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY 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	54.6	50.0	109	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746545

Sample: 322297-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	53.5	50.0	107	70-135	

Lab Batch #: 746545

Sample: 322297-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

Lab Batch #: 746545

Sample: 322297-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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	51.6	50.0	103	70-135	

Lab Batch #: 746545

Sample: 322297-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	52.7	50.0	105	70-135	

Lab Batch #: 746545

Sample: 322297-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	53.8	50.0	108	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746545

Sample: 322297-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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

Lab Batch #: 746545

Sample: 322297-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.6	100	100	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

Lab Batch #: 746545

Sample: 322297-015 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	56.9	50.0	114	70-135	

Lab Batch #: 746545

Sample: 322297-015 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	57.9	50.0	116	70-135	

Lab Batch #: 746545

Sample: 322297-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.8	100	100	70-135	
o-Terphenyl	50.4	50.0	101	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746545

Sample: 322297-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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	51.7	50.0	103	70-135	

Lab Batch #: 746545

Sample: 322297-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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 #: 746545

Sample: 322297-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.4	100	99	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

Lab Batch #: 746545

Sample: 322297-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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	51.7	50.0	103	70-135	

Lab Batch #: 746545

Sample: 322297-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746545

Sample: 322297-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	51.4	50.0	103	70-135	

Lab Batch #: 746545

Sample: 322297-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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

Lab Batch #: 746545

Sample: 522939-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	60.6	50.0	121	70-135	

Lab Batch #: 746545

Sample: 522939-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY 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	56.0	50.0	112	70-135	

Lab Batch #: 746545

Sample: 522939-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	58.5	50.0	117	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746564

Sample: 322297-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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

Lab Batch #: 746564

Sample: 322297-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

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	51.5	50.0	103	70-135	

Lab Batch #: 746564

Sample: 322297-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	52.4	50.0	105	70-135	

Lab Batch #: 746564

Sample: 322297-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	53.5	50.0	107	70-135	

Lab Batch #: 746564

Sample: 322381-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	60.0	50.0	120	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 322297,

Project ID: 2008-113

Lab Batch #: 746564

Sample: 322381-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	63.0	50.0	126	70-135	

Lab Batch #: 746564

Sample: 522946-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	57.4	50.0	115	70-135	

Lab Batch #: 746564

Sample: 522946-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

Lab Batch #: 746564

Sample: 522946-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	62.9	50.0	126	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: EK Queen Pearce 6"

Work Order #: 322297

Analyst: ASA

Date Prepared: 01/13/2009

Project ID: 2008-113

Date Analyzed: 01/13/2009

Lab Batch ID: 746367

Sample: 522852-1-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 [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											
Benzene	ND	0.1000	0.0988	99	0.1	0.0978	98	1	70-130	35	
Toluene	ND	0.1000	0.0965	97	0.1	0.0958	96	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1028	103	0.1	0.1022	102	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2038	102	0.2	0.2025	101	1	70-135	35	
o-Xylene	ND	0.1000	0.0985	99	0.1	0.0978	98	1	71-133	35	

Analyst: ASA

Date Prepared: 01/13/2009

Date Analyzed: 01/14/2009

Lab Batch ID: 746371

Sample: 522855-1-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 [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											
Benzene	ND	0.1000	0.0923	92	0.1	0.0939	94	2	70-130	35	
Toluene	ND	0.1000	0.0880	88	0.1	0.0899	90	2	70-130	35	
Ethylbenzene	ND	0.1000	0.0910	91	0.1	0.0927	93	2	71-129	35	
m,p-Xylenes	ND	0.2000	0.1791	90	0.2	0.1820	91	2	70-135	35	
o-Xylene	ND	0.1000	0.0874	87	0.1	0.0891	89	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: EK Queen Pearce 6"

Work Order #: 322297

Analyst: BHW

Date Prepared: 01/13/2009

Project ID: 2008-113

Date Analyzed: 01/13/2009

Lab Batch ID: 746422

Sample: 522884-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1110	111	1000	1110	111	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1090	109	1000	1070	107	2	70-135	35	

Analyst: BHW

Date Prepared: 01/14/2009

Date Analyzed: 01/14/2009

Lab Batch ID: 746545

Sample: 522939-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1020	102	1000	999	100	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1110	111	1000	1060	106	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



BS / BSD Recoveries



Project Name: EK Queen Pearce 6"

Work Order #: 322297

Analyst: BHW

Date Prepared: 01/14/2009

Project ID: 2008-113

Date Analyzed: 01/15/2009

Lab Batch ID: 746564

Sample: 522946-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	945	95	1000	925	93	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	997	100	1000	968	97	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce 6"

Work Order # : 322297

Project ID: 2008-113

Lab Batch ID: 746367

QC- Sample ID: 322296-001 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 01/14/2009

Date Prepared: 01/13/2009

Analyst: ASA

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1088	0.0666	61	0.1088	0.0689	63	3	70-130	35	X
Toluene	ND	0.1088	0.0647	59	0.1088	0.0665	61	3	70-130	35	X
Ethylbenzene	ND	0.1088	0.0674	62	0.1088	0.0690	63	2	71-129	35	X
m,p-Xylenes	ND	0.2176	0.1332	61	0.2176	0.1359	62	2	70-135	35	X
o-Xylene	ND	0.1088	0.0612	56	0.1088	0.0629	58	4	71-133	35	X

Lab Batch ID: 746371

QC- Sample ID: 322297-015 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 01/14/2009

Date Prepared: 01/13/2009

Analyst: ASA

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1052	0.0710	67	0.1052	0.0727	69	3	70-130	35	X
Toluene	ND	0.1052	0.0702	67	0.1052	0.0723	69	3	70-130	35	X
Ethylbenzene	ND	0.1052	0.0743	71	0.1052	0.0768	73	3	71-129	35	
m,p-Xylenes	ND	0.2103	0.1464	70	0.2103	0.1514	72	3	70-135	35	
o-Xylene	ND	0.1052	0.0661	63	0.1052	0.0692	66	5	71-133	35	X

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce 6"

Work Order # : 322297

Project ID: 2008-113

Lab Batch ID: 746422

QC- Sample ID: 322296-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/14/2009

Date Prepared: 01/13/2009

Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1090	1160	106	1090	1180	108	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1090	1120	103	1090	1140	105	2	70-135	35	

Lab Batch ID: 746545

QC- Sample ID: 322297-015 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/14/2009

Date Prepared: 01/14/2009

Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1050	996	95	1050	999	95	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1050	1060	101	1050	1060	101	0	70-135	35	

Lab Batch ID: 746564

QC- Sample ID: 322381-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/15/2009

Date Prepared: 01/14/2009

Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1110	1030	93	1110	1020	92	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	70.1	1110	1070	90	1110	1060	89	1	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Sample Duplicate Recovery



Project Name: EK Queen Pearce 6"

Work Order #: 322297

Lab Batch #: 746380

Date Analyzed: 01/13/2009

QC- Sample ID: 322296-001 D

Reporting Units: %

Project ID: 2008-113

Analyst: BEV

Date Prepared: 01/13/2009

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	8.07	10.4	25	20	F

Lab Batch #: 746383

Date Analyzed: 01/13/2009

QC- Sample ID: 322297-015 D

Reporting Units: %

Date Prepared: 01/13/2009

Batch #: 1

Analyst: BEV

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	4.90	7.07	36	20	F

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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

Project Name: EK Queen Pearce 6"

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA - D. Bryant

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: cjbryant@basin-consulting.com

[illegible]

2 of 3

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

Project Manager: Camille Bryant

Project Name: EK Queen Pearce 6"

Company Name **Basin Environmental Service Technologies, LLC**

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - D. Bryant

Telephone No: (575) 605-7210

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: _____

e-mail: cjbryant@basin-consulting.com

(lab use only)

ORDER #: 322297

[illegible]

Special Instructions:

Laboratory Comments:

Relinquished by:

Date _____

Time

Received by:

Date _____

Time

Sample Containers Intact?

VOCs Free of Headspace?

Labels on container(s)

- Custody seals on container(s)

Custody seals on cooler(s)

Sample Hand Delivered

by Sampler/Client Rep. ?

by Courier? UPS

4029/955

Temperature Upon Receipt

FedEx Lone Star
-70 °C

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

3 of 3

Project Manager: Camille Bryant

Project Name: EK Queen Pearce 6"

Company Name: Basin Environmental Service Technologies, LLC

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - D. Bryant

Telephone No: (515) 605-7210

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

e-mail: cjbryant@basin-consulting.com

LAB # (lab use only)		FIELD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers										Matrix	Analyze For:										RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY			
LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW - Drinking Water SL - Sludge GW - Groundwater S - Solid Sol NP - Non-Potable Specify Other	TPH: 418 1 8015M 8015B TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	NORM									
																																	TCLP:	TOTAL:	
21	MW-3 113'			8-Jan-09	1150	1	X									SOIL	X							X											X
22	SB-5 10'			9-Jan-09	1020	1	X									SOIL	X							X										X	
23	SB-5 20'			9-Jan-09	1025	1	X									SOIL	X							X										X	
24	SB-5 30'			9-Jan-09	1035	1	X									SOIL	X							X										X	
25	SB-5 40'			9-Jan-09	1045	1	X									SOIL	X							X										X	
26	SB-5 50'			9-Jan-09	1100	1	X									SOIL	X							X										X	
27	SB-5 60'			9-Jan-09	1120	1	X									SOIL	X							X										X	

Special Instructions:				Laboratory Comments:			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Sample Containers Intact?	
<u>Camille Bryant</u>	<u>1/13/09</u>	<u>7:15</u>	<u>LEP</u>	<u>1/13/09</u>	<u>7:15</u>	VOCs Free of Headspace?	
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Labels on container(s)	
<u>LEP</u>	<u>1/13/09</u>	<u>10:36</u>				Custody seals on container(s)	
Relinquished by:	Date:	Time:	Received by ELOT:	Date:	Time:	Custody seals on cooler(s)	
			<u>Andrea Lam</u>	<u>1-13-09</u>	<u>10:36</u>	Sample Hand Delivered	
						by Sampler/Client Rep.?	
						by Courier? UPS DHL FedEx Lone Star	
						Temperature Upon Receipt: <u>40.2 g/55</u>	
						<u>7.0 °C</u>	

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin Env. / Plains
 Date/ Time: 1-13-09 10:36
 Lab ID #: 322297
 Initials: AL

Sample Receipt Checklist

Client Initials

#1 Temperature of container/ cooler?	<u>Yes</u>	No	<u>-2.0 °C</u>	
#2 Shipping container in good condition?	<u>Yes</u>	No		
#3 Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	<u>Not Present</u>	
#4 Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	<u>Not Present</u>	
#5 Chain of Custody present?	<u>Yes</u>	No		
#6 Sample instructions complete of Chain of Custody?	<u>Yes</u>	No		
#7 Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No		
#8 Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid	
#9 Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable	
#10 Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No		
#11 Containers supplied by ELOT?	<u>Yes</u>	No		
#12 Samples in proper container/ bottle?	<u>Yes</u>	No	See Below	
#13 Samples properly preserved?	<u>Yes</u>	No	See Below	
#14 Sample bottles intact?	<u>Yes</u>	No		
#15 Preservations documented on Chain of Custody?	<u>Yes</u>	No		
#16 Containers documented on Chain of Custody?	<u>Yes</u>	No		
#17 Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below	
#18 All samples received within sufficient hold time?	<u>Yes</u>	No	See Below	
#19 Subcontract of sample(s)?	<u>Yes</u>	No	<u>Not Applicable</u>	
#20 VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

☐ See attached e-mail/ fax

☐ Client understands and would like to proceed with analysis

☐ Cooling process had begun shortly after sampling event

Analytical Report 335951

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

E K Queen 6" Pearce

2008-113

26-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



26-JUN-09

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

Reference: XENCO Report No: **335951**
E K Queen 6" Pearce
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 335951. 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. 335951 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 335951



PLAINS ALL AMERICAN EH&S, Midland, TX

E K Queen 6" Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP # 1	S	Jun-17-09 15:00		335951-001
SP # 2	S	Jun-17-09 15:10		335951-002
SP # 3	S	Jun-18-09 14:00		335951-003



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: E K Queen 6" Pearce

Project ID: 2008-113

Work Order Number: 335951

Report Date: 26-JUN-09

Date Received: 06/19/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-763001 Percent Moisture

None

Batch: LBA-763323 TPH by SW8015 Mod

None

Batch: LBA-763558 BTEX-MTBE EPA 8021B

SW8021BM

Batch 763558, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 532559-1-BLK, 335951-001, 335951-002. Matrix interference is suspected in sample surrogate failures.

Batch: LBA-763672 BTEX-MTBE EPA 8021B

SW8021BM

Batch 763672, 1,4-Difluorobenzene recovered below QC limits. Data confirmed by re-analysis
Samples affected are: 335951-003.

4-Bromofluorobenzene recovered below QC limits. Data confirmed by re-analysis. Samples
affected are: 532618-1-BLK, 335951-003.



Certificate of Analysis Summary 335951

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: E K Queen 6" Pearce

Date Received in Lab: Fri Jun-19-09 08:40 am

Report Date: 26-JUN-09

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	335951-001	335951-002	335951-003			
	<i>Field Id:</i>	SP # 1	SP # 2	SP # 3			
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Jun-17-09 15:00	Jun-17-09 15:10	Jun-18-09 14:00			
BTEX by EPA 8021B	<i>Extracted:</i>	Jun-24-09 17:00	Jun-24-09 17:00	Jun-25-09 17:00			
	<i>Analyzed:</i>	Jun-24-09 23:35	Jun-24-09 23:56	Jun-26-09 01:02			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		ND 0.0010	ND 0.0010	ND 0.0510			
Toluene		ND 0.0020	ND 0.0020	4.358 0.1020			
Ethylbenzene		0.0012 0.0010	0.0012 0.0010	6.690 0.0510			
m,p-Xylenes		0.0056 0.0020	0.0064 0.0020	14.34 0.1020			
o-Xylene		0.0047 0.0010	0.0051 0.0010	7.838 0.0510			
Total Xylenes		0.0103 0.0010	0.0115 0.0010	22.178 0.0510			
Total BTEX		0.0115 0.0010	0.0127 0.0010	33.226 0.0510			
Percent Moisture	<i>Extracted:</i>	Jun-22-09 10:23	Jun-22-09 10:23	Jun-22-09 10:23			
	<i>Analyzed:</i>	Jun-22-09 10:23	Jun-22-09 10:23	Jun-22-09 10:23			
	<i>Units/RL:</i>	% RL	% RL	% RL			
Percent Moisture		ND 1.00	ND 1.00	1.94 1.00			
TPH By SW8015 Mod	<i>Extracted:</i>	Jun-22-09 08:57	Jun-22-09 08:57	Jun-22-09 08:57			
	<i>Analyzed:</i>	Jun-23-09 08:34	Jun-23-09 09:00	Jun-23-09 09:25			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
C6-C12 Gasoline Range Hydrocarbons		56.8 15.0	47.6 15.1	731 15.3			
C12-C28 Diesel Range Hydrocarbons		603 15.0	412 15.1	2540 15.3			
C28-C35 Oil Range Hydrocarbons		63.7 15.0	51.7 15.1	267 15.3			
Total TPH		723.5 15.0	511.3 15.1	3538 15.3			

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.

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Brent Barron
Odessa Laboratory Director

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

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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 842 Cantwell Lane, Corpus Christi, TX 78408

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



Form 2 - Surrogate Recoveries

Project Name: E K Queen 6" Pearce

Work Orders : 335951,

Project ID: 2008-113

Lab Batch #: 763558

Sample: 532559-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/24/09 21:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 763558

Sample: 532559-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/24/09 21:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 763558

Sample: 532559-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/24/09 22:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0214	0.0300	71	80-120	*

Lab Batch #: 763558

Sample: 335951-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/24/09 23:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0420	0.0300	140	80-120	*

Lab Batch #: 763558

Sample: 335951-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/24/09 23:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0426	0.0300	142	80-120	*

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E K Queen 6" Pearce

Work Orders : 335951,

Project ID: 2008-113

Lab Batch #: 763672

Sample: 532618-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/25/09 22:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 763672

Sample: 532618-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/25/09 22:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 763672

Sample: 532618-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/25/09 23:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0157	0.0300	52	80-120	*

Lab Batch #: 763672

Sample: 335951-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/26/09 01:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0211	0.0300	70	80-120	**
4-Bromofluorobenzene	0.1145	0.0300	382	80-120	**

Lab Batch #: 763323

Sample: 532416-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/23/09 07:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.8	100	81	70-135	
o-Terphenyl	39.0	50.0	78	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E K Queen 6" Pearce

Work Orders : 335951,

Project ID: 2008-113

Lab Batch #: 763323

Sample: 532416-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/23/09 07:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.8	100	81	70-135	
o-Terphenyl	37.5	50.0	75	70-135	

Lab Batch #: 763323

Sample: 532416-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/23/09 08:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.9	100	76	70-135	
o-Terphenyl	39.1	50.0	78	70-135	

Lab Batch #: 763323

Sample: 335951-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/23/09 08:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.7	99.5	90	70-135	
o-Terphenyl	48.3	49.8	97	70-135	

Lab Batch #: 763323

Sample: 335951-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/23/09 09:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.5	99.7	87	70-135	
o-Terphenyl	47.1	49.9	94	70-135	

Lab Batch #: 763323

Sample: 335951-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/23/09 09:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.7	106	70-135	
o-Terphenyl	56.4	49.9	113	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E K Queen 6" Pearce

Work Orders : 335951,

Project ID: 2008-113

Lab Batch #: 763323

Sample: 335951-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/23/09 17:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.6	119	70-135	
o-Terphenyl	53.7	49.8	108	70-135	

Lab Batch #: 763323

Sample: 335951-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/23/09 18:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.6	99.7	88	70-135	
o-Terphenyl	38.9	49.9	78	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: E K Queen 6" Pearce

Work Order #: 335951

Analyst: ASA

Date Prepared: 06/24/2009

Project ID: 2008-113

Date Analyzed: 06/24/2009

Lab Batch ID: 763558

Sample: 532559-1-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 [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											
Benzene	ND	0.0996	0.0994	100	0.099	0.0987	100	1	70-130	35	
Toluene	ND	0.0996	0.0972	98	0.099	0.0964	97	1	70-130	35	
Ethylbenzene	ND	0.0996	0.1029	103	0.099	0.1024	103	0	71-129	35	
m,p-Xylenes	ND	0.1992	0.2067	104	0.198	0.2055	104	1	70-135	35	
o-Xylene	ND	0.0996	0.0972	98	0.099	0.0974	98	0	71-133	35	

Analyst: ASA

Date Prepared: 06/25/2009

Date Analyzed: 06/25/2009

Lab Batch ID: 763672

Sample: 532618-1-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 [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											
Benzene	ND	0.1000	0.1077	108	0.1	0.1091	109	1	70-130	35	
Toluene	ND	0.1000	0.1054	105	0.1	0.1069	107	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1112	111	0.1	0.1127	113	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2232	112	0.2	0.2261	113	1	70-135	35	
o-Xylene	ND	0.1000	0.1067	107	0.1	0.1080	108	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: E K Queen 6" Pearce

Work Order #: 335951

Analyst: BHW

Date Prepared: 06/22/2009

Project ID: 2008-113

Date Analyzed: 06/23/2009

Lab Batch ID: 763323

Sample: 532416-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	773	77	1000	736	74	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	715	72	1000	763	76	6	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: E K Queen 6" Pearce

Work Order #: 335951

Project ID: 2008-113

Lab Batch ID: 763323

QC- Sample ID: 335951-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/23/2009

Date Prepared: 06/22/2009

Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	56.8	998	943	89	999	895	84	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	603	998	1600	100	999	1390	79	14	70-135	35	

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

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

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



Sample Duplicate Recovery



Project Name: E K Queen 6" Pearce

Work Order #: 335951

Lab Batch #: 763001

Project ID: 2008-113

Date Analyzed: 06/22/2009

Date Prepared: 06/22/2009

Analyst: BEV

QC- Sample ID: 335900-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.45	10.1	7	20	

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

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Plains / Basin

Date/ Time: 06-19-09 @ 0840

Lab ID #: 335951

Initials: JMF

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<u>Yes</u>	No	1.6 °C	
#2	Shipping container in good condition?	<u>Yes</u>	No		
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	<u>Not Present</u>	
#4	Custody Seals intact on sample bottles/ container? <u>/label</u>	<u>Yes</u>	No	Not Present	
#5	Chain of Custody present?	<u>Yes</u>	No		
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No		
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No		
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No		
#11	Containers supplied by ELOT?	<u>Yes</u>	No		
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below	
#13	Samples properly preserved?	<u>Yes</u>	No	See Below	
#14	Sample bottles intact?	<u>Yes</u>	No		
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No		
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No		
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below	
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below	
#19	Subcontract of sample(s)?	<u>Yes</u>	No	<u>Not Applicable</u>	
#20	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken:

Check all that Apply:

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

Analytical Report 336188

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce 6"

2008-113

29-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



29-JUN-09

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

Reference: XENCO Report No: **336188**
EK Queen Pearce 6"
Project Address: West of Hobbs, 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 336188. 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. 336188 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 336188



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce 6"

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP # 4	S	Jun-22-09 14:10		336188-001
SP # 5	S	Jun-22-09 14:20		336188-002



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce 6"

Project ID: 2008-113

Work Order Number: 336188

Report Date: 29-JUN-09

Date Received: 06/23/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-763345 Percent Moisture

None

Batch: LBA-763477 TX1005

None

Batch: LBA-763727 BTEX-MTBE EPA 8021B

SW8021BM

Batch 763727, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 336188-002,336188-001.

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

Samples affected are: 532647-1-BLK.



Certificate of Analysis Summary 336188

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce 6"

Date Received in Lab: Tue Jun-23-09 09:25 am

Report Date: 29-JUN-09

Project Location: West of Hobbs, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	336188-001	336188-002				
	Field Id:	SP # 4	SP # 5				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Jun-22-09 14:10	Jun-22-09 14:20				
BTEX by EPA 8021B	Extracted:	Jun-26-09 08:30	Jun-26-09 08:30				
	Analyzed:	Jun-26-09 18:08	Jun-26-09 18:30				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		0.0213 0.0207	ND 0.0207				
Toluene		0.4974 0.0415	1.006 0.0414				
Ethylbenzene		1.047 0.0207	1.549 0.0207				
m,p-Xylenes		4.685 0.0415	5.468 0.0414				
o-Xylene		2.965 0.0207	3.003 0.0207				
Total Xylenes		7.65 0.0207	8.471 0.0207				
Total BTEX		9.2157 0.0207	11.026 0.0207				
Percent Moisture	Extracted:	Jun-24-09 10:42	Jun-24-09 10:42				
	Analyzed:						
	Units/RL:	% RL	% RL				
Percent Moisture		3.69 1.00	3.74 1.00				
TPH By SW8015 Mod	Extracted:	Jun-24-09 14:06	Jun-24-09 14:06				
	Analyzed:	Jun-24-09 22:50	Jun-24-09 23:16				
	Units/RL:	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		491 15.6	494 15.5				
C12-C28 Diesel Range Hydrocarbons		2640 15.6	2480 15.5				
C28-C35 Oil Range Hydrocarbons		234 15.6	212 15.5				
Total TPH		3365 15.6	3186 15.5				

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

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Brent Barron
Odessa Laboratory Director

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

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 336188,

Project ID: 2008-113

Lab Batch #: 763727

Sample: 532647-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 06/26/09 09:16		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0294	0.0300	98	80-120
4-Bromofluorobenzene		0.0322	0.0300	107	80-120

Lab Batch #: 763727

Sample: 532647-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 06/26/09 09:37		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0293	0.0300	98	80-120
4-Bromofluorobenzene		0.0332	0.0300	111	80-120

Lab Batch #: 763727

Sample: 532647-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 06/26/09 10:20		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0255	0.0300	85	80-120
4-Bromofluorobenzene		0.0208	0.0300	69	80-120 *

Lab Batch #: 763727

Sample: 336188-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/26/09 18:08		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0212	0.0300	71	80-120 **
4-Bromofluorobenzene		0.0649	0.0300	216	80-120 **

Lab Batch #: 763727

Sample: 336188-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 06/26/09 18:30		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0215	0.0300	72	80-120 **
4-Bromofluorobenzene		0.0585	0.0300	195	80-120 **

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 336188,

Project ID: 2008-113

Lab Batch #: 763477

Sample: 532498-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/24/09 14:37

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	50.3	50.0	101	70-135	

Lab Batch #: 763477

Sample: 532498-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/24/09 15:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	50.8	50.1	101	70-135	

Lab Batch #: 763477

Sample: 532498-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/24/09 15:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	100	98	70-135	
o-Terphenyl	53.0	50.0	106	70-135	

Lab Batch #: 763477

Sample: 336188-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/24/09 22:50

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	63.4	50.0	127	70-135	

Lab Batch #: 763477

Sample: 336188-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/24/09 23:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.5	112	70-135	
o-Terphenyl	60.4	49.8	121	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 336188,

Project ID: 2008-113

Lab Batch #: 763477

Sample: 336111-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/25/09 00:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.6	118	70-135	
o-Terphenyl	51.9	49.8	104	70-135	

Lab Batch #: 763477

Sample: 336111-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/25/09 01:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.6	121	70-135	
o-Terphenyl	53.6	49.8	108	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: EK Queen Pearce 6"

Work Order #: 336188

Analyst: ASA

Date Prepared: 06/26/2009

Project ID: 2008-113

Date Analyzed: 06/26/2009

Lab Batch ID: 763727

Sample: 532647-1-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 [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											
Benzene	ND	0.1000	0.0916	92	0.1	0.0915	92	0	70-130	35	
Toluene	ND	0.1000	0.0897	90	0.1	0.0894	89	0	70-130	35	
Ethylbenzene	ND	0.1000	0.0953	95	0.1	0.0954	95	0	71-129	35	
m,p-Xylenes	ND	0.2000	0.1918	96	0.2	0.1916	96	0	70-135	35	
o-Xylene	ND	0.1000	0.0915	92	0.1	0.0919	92	0	71-133	35	

Analyst: BHW

Date Prepared: 06/24/2009

Date Analyzed: 06/24/2009

Lab Batch ID: 763477

Sample: 532498-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	817	82	1000	844	84	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	873	87	1000	898	90	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce 6"

Work Order # : 336188

Project ID: 2008-113

Lab Batch ID: 763477

QC- Sample ID: 336111-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/25/2009

Date Prepared: 06/24/2009

Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1240	1110	90	1240	1130	91	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1240	1220	98	1240	1220	98	0	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Sample Duplicate Recovery



Project Name: EK Queen Pearce 6"

Work Order #: 336188

Lab Batch #: 763345

Date Analyzed: 06/24/2009

QC- Sample ID: 336189-001 D

Reporting Units: %

Project ID: 2008-113

Analyst: BEV

Date Prepared: 06/24/2009

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	8.76	7.66	13	20	

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

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin / Plains
 Date/ Time: 06/23/09 9:25
 Lab ID #: 336188
 Initials: gnot

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<u>Yes</u>	No	<u>4.1</u> °C	
#2	Shipping container in good condition?	<u>Yes</u>	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	<u>Not Present</u>	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	<u>Not Present</u>	
#5	Chain of Custody present?	<u>Yes</u>	No		
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No		
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No		
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No		
#11	Containers supplied by ELDT?	<u>Yes</u>	No		
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below	
#13	Samples properly preserved?	<u>Yes</u>	No	See Below	
#14	Sample bottles intact?	<u>Yes</u>	No		
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No		
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No		
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below	
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	<u>Not Applicable</u>	
#20	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

☐

See attached e-mail/ fax

☐

Client understands and would like to proceed with analysis

☐

Cooling process had begun shortly after sampling event

Analytical Report 336676

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce 6"

2008-113

07-JUL-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

Arizona certification numbers:

Houston, TX AZ0738

South Carolina certification numbers:

Norcross(Atlanta), GA 98015

North Carolina certification numbers:

Norcross(Atlanta), GA 483

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Midland - Corpus Christi - Atlanta



07-JUL-09

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

Reference: XENCO Report No: **336676**
EK Queen Pearce 6"
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 336676. 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. 336676 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 336676



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce 6"

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP # 6	S	Jun-25-09 13:30		336676-001
SP # 7	S	Jun-25-09 13:45		336676-002



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce 6"

Project ID: 2008-113

Work Order Number: 336676

Report Date: 07-JUL-09

Date Received: 06/29/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-763938 Percent Moisture

AD2216A

Batch 763938, Percent Moisture RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 336676-002, -001.

Batch: LBA-764121 TPH by SW8015 Mod

None



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce 6"

Project ID: 2008-113

Work Order Number: 336676

Report Date: 07-JUL-09

Date Received: 06/29/2009

Batch: LBA-764550 BTEX-MTBE EPA 8021B
SW8021BM

Batch 764550, Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 336676-001.

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

SW8021BM

Batch 764550, Benzene, Toluene recovered below QC limits in the laboratory control sample these compounds were within QC limits in the CCVs as well as the Laboratory Control Sample Duplicate, analyst spiking error is suspected, there should be no appreciable affect to the sample data..

Samples affected are: 336676-001.

SW8021BM

Batch 764550, 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 336676-001.

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

Samples affected are: 533130-1-BLK.

SW8021BM

Batch 764550, Benzene RPD was outside laboratory control limits In the LCS. The RPD was within limits for the Matrix Spike and Matrix Spike duplicate. Analyst spiking error suspected.

Samples affected are: 336676-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce 6"

Project ID: 2008-113

Work Order Number: 336676

Report Date: 07-JUL-09

Date Received: 06/29/2009

*Batch: LBA-764617 BTEX-MTBE EPA 8021B
SW8021BM*

Batch 764617, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 336676-002.

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

Samples affected are: 533185-1-BLK.



Certificate of Analysis Summary 336676

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce 6"

Date Received in Lab: Mon Jun-29-09 11:46 am

Report Date: 07-JUL-09

Project Location: Lea County, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	336676-001	336676-002				
	Field Id:	SP # 6	SP # 7				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Jun-25-09 13:30	Jun-25-09 13:45				
BTEX by EPA 8021B	Extracted:	Jul-01-09 15:30	Jul-06-09 10:00				
	Analyzed:	Jul-03-09 03:20	Jul-06-09 12:07				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		0.0068 0.0010	0.0082 0.0052				
Toluene		0.1090 0.0021	0.3025 0.0105				
Ethylbenzene		0.0334 0.0010	0.1636 0.0052				
m,p-Xylenes		0.1183 0.0021	0.7755 0.0105				
o-Xylene		0.1528 0.0010	0.4720 0.0052				
Total Xylenes		0.2711 0.0010	1.2475 0.0052				
Total BTEX		0.4203 0.0010	1.7218 0.0052				
Percent Moisture	Extracted:	Jun-30-09 08:43	Jun-30-09 08:43				
	Analyzed:						
	Units/RL:	% RL	% RL				
Percent Moisture		3.40 1.00	4.62 1.00				
TPH By SW8015 Mod	Extracted:	Jun-30-09 11:01	Jun-30-09 11:01				
	Analyzed:	Jun-30-09 21:11	Jun-30-09 21:36				
	Units/RL:	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		362 77.6	473 78.4				
C12-C28 Diesel Range Hydrocarbons		2360 77.6	2450 78.4				
C28-C35 Oil Range Hydrocarbons		210 77.6	234 78.4				
Total TPH		2932 77.6	3157 78.4				

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

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Brent Barron
Odessa Laboratory Director

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

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 336676,

Project ID: 2008-113

Lab Batch #: 764550

Sample: 533130-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/02/09 22:40		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0284	0.0300	95	80-120
4-Bromofluorobenzene		0.0306	0.0300	102	80-120

Lab Batch #: 764550

Sample: 533130-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/02/09 23:02		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0290	0.0300	97	80-120
4-Bromofluorobenzene		0.0317	0.0300	106	80-120

Lab Batch #: 764550

Sample: 533130-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/02/09 23:45		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0263	0.0300	88	80-120
4-Bromofluorobenzene		0.0146	0.0300	49	80-120 **

Lab Batch #: 764550

Sample: 336676-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/03/09 03:20		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0218	0.0300	73	80-120 **
4-Bromofluorobenzene		0.0809	0.0300	270	80-120 **

Lab Batch #: 764550

Sample: 336622-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/03/09 07:36		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0292	0.0300	97	80-120
4-Bromofluorobenzene		0.0305	0.0300	102	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 336676,

Project ID: 2008-113

Lab Batch #: 764550

Sample: 336622-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/03/09 07:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 764617

Sample: 533185-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/06/09 10:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	

Lab Batch #: 764617

Sample: 533185-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/06/09 11:02

SURROGATE RECOVERY STUDY

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

Lab Batch #: 764617

Sample: 533185-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/06/09 11:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0163	0.0300	54	80-120	*

Lab Batch #: 764617

Sample: 336676-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/06/09 12:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0217	0.0300	72	80-120	**
4-Bromofluorobenzene	0.0882	0.0300	294	80-120	**

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 336676,

Project ID: 2008-113

Lab Batch #: 764121

Sample: 532892-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/30/09 19:53

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	50.8	50.0	102	70-135	

Lab Batch #: 764121

Sample: 532892-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/30/09 20:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	49.9	50.0	100	70-135	

Lab Batch #: 764121

Sample: 532892-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/30/09 20:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.6	100	99	70-135	
o-Terphenyl	53.0	50.0	106	70-135	

Lab Batch #: 764121

Sample: 336676-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/30/09 21:11

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	56.1	50.0	112	70-135	

Lab Batch #: 764121

Sample: 336676-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/30/09 21:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.7	119	70-135	
o-Terphenyl	57.3	49.9	115	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 336676,

Project ID: 2008-113

Lab Batch #: 764121

Sample: 336676-001 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/30/09 23:19

SURROGATE RECOVERY 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	56.7	50.0	113	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: EK Queen Pearce 6"

Work Order #: 336676

Analyst: ASA

Date Prepared: 07/01/2009

Project ID: 2008-113

Date Analyzed: 07/02/2009

Lab Batch ID: 764550

Sample: 533130-1-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 [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											
Benzene	ND	0.1000	0.0534	53	0.1	0.0802	80	40	70-130	35	LF
Toluene	ND	0.1000	0.0608	61	0.1	0.0841	84	32	70-130	35	L
Ethylbenzene	ND	0.1000	0.0722	72	0.1	0.0922	92	24	71-129	35	
m,p-Xylenes	ND	0.2000	0.1470	74	0.2	0.1844	92	23	70-135	35	
o-Xylene	ND	0.1000	0.0719	72	0.1	0.0880	88	20	71-133	35	

Analyst: ASA

Date Prepared: 07/06/2009

Date Analyzed: 07/06/2009

Lab Batch ID: 764617

Sample: 533185-1-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 [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											
Benzene	ND	0.1000	0.0905	91	0.1	0.0940	94	4	70-130	35	
Toluene	ND	0.1000	0.0872	87	0.1	0.0910	91	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0978	98	0.1	0.1017	102	4	71-129	35	
m,p-Xylenes	ND	0.2000	0.2006	100	0.2	0.2085	104	4	70-135	35	
o-Xylene	ND	0.1000	0.0949	95	0.1	0.0987	99	4	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: EK Queen Pearce 6"

Work Order #: 336676

Analyst: BHW

Date Prepared: 06/30/2009

Project ID: 2008-113

Date Analyzed: 06/30/2009

Lab Batch ID: 764121

Sample: 532892-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	846	85	1000	832	83	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	897	90	1000	877	88	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: EK Queen Pearce 6"

Work Order # : 336676

Project ID: 2008-113

Lab Batch ID: 764550

QC- Sample ID: 336622-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/03/2009

Date Prepared: 07/01/2009

Analyst: ASA

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1006	0.0873	87	0.1006	0.0879	87	1	70-130	35	
Toluene	ND	0.1006	0.0712	71	0.1006	0.0719	71	1	70-130	35	
Ethylbenzene	ND	0.1006	0.0399	40	0.1006	0.0394	39	1	71-129	35	X
m,p-Xylenes	ND	0.2013	0.0793	39	0.2013	0.0840	42	6	70-135	35	X
o-Xylene	ND	0.1006	0.0538	53	0.1006	0.0526	52	2	71-133	35	X

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Project Name: EK Queen Pearce 6"

Work Order #: 336676

Lab Batch #: 763938

Date Analyzed: 06/30/2009

QC- Sample ID: 336431-004 D

Reporting Units: %

Project ID: 2008-113

Analyst: BEV

Date Prepared: 06/30/2009

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.04	7.97	154	20	F

Lab Batch #: 764121

Date Analyzed: 06/30/2009

QC- Sample ID: 336676-001 D

Reporting Units: mg/kg

Date Prepared: 06/30/2009

Batch #: 1

Analyst: BHW

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	362	370	2	35	
C12-C28 Diesel Range Hydrocarbons	2360	2400	2	35	
C28-C35 Oil Range Hydrocarbons	210	212	1	35	

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

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin Env / Plains
 Date/ Time: 6-29-09 11:46
 Lab ID #: 336676
 Initials: AL

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<u>Yes</u>	No	3.1 °C	
#2	Shipping container in good condition?	<u>Yes</u>	No		
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	<u>Not Present</u>	
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present	
#5	Chain of Custody present?	<u>Yes</u>	No		
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No		
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No		
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No		
#11	Containers supplied by ELOT?	<u>Yes</u>	No		
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below	
#13	Samples properly preserved?	<u>Yes</u>	No	See Below	
#14	Sample bottles intact?	<u>Yes</u>	No		
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No		
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No		
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below	
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below	
#19	Subcontract of sample(s)?	<u>Yes</u>	No	<u>Not Applicable</u>	
#20	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 337166

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

E.K. Queen 6" Pearce

2008-113

09-JUL-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

Arizona certification numbers:

Houston, TX AZ0738

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



09-JUL-09

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

Reference: XENCO Report No: **337166**
E.K. Queen 6" Pearce
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 337166. 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. 337166 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 337166



PLAINS ALL AMERICAN EH&S, Midland, TX

E.K. Queen 6" Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Over Burden-2	S	Jul-02-09 13:05		337166-001
SP # 8	S	Jul-02-09 15:00		337166-002



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: E.K. Queen 6" Pearce

Project ID: 2008-113

Work Order Number: 337166

Report Date: 09-JUL-09

Date Received: 07/02/2009

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-764775 TX1005

None

Batch: LBA-764887 BTEX-MTBE EPA 8021B

SW8021BM

Batch 764887, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; sample data confirmed by re-analysis

Samples affected are: 337166-002.

4-Bromofluorobenzene recovered below QC limits; QC data not confirmed by re-analyses.

Samples affected are: 533308-1-BLK.

Surrogates that fail high in QC samples but all other QC is passing are not re-analyzed.

4-Bromofluorobenzene recovered above QC limits; Sample Data confirmed by re-analysis.

Samples affected are: 337166-002



Certificate of Analysis Summary 337166

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: E.K. Queen 6" Pearce

Date Received in Lab: Thu Jul-02-09 04:34 pm

Report Date: 09-JUL-09

Project Location: Lea Co., NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	337166-001	337166-002				
	Field Id:	Over Burden-2	SP # 8				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Jul-02-09 13:05	Jul-02-09 15:00				
BTEX by EPA 8021B	Extracted:	Jul-06-09 18:00	Jul-06-09 18:00				
	Analyzed:	Jul-08-09 12:27	Jul-08-09 13:53				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		0.0031 0.0010	ND 0.0011				
Toluene		0.0466 0.0021	0.0168 0.0021				
Ethylbenzene		0.0143 0.0010	0.0084 0.0011				
m,p-Xylenes		0.0381 0.0021	0.0386 0.0021				
o-Xylene		0.0150 0.0010	0.0274 0.0011				
Total Xylenes		0.0531 0.0010	0.066 0.0011				
Total BTEX		0.1171 0.0010	0.0912 0.0011				
Percent Moisture	Extracted:	Jul-06-09 12:45	Jul-06-09 12:45				
	Analyzed:						
	Units/RL:	% RL	% RL				
Percent Moisture		3.72 1.00	6.75 1.00				
TPH By SW8015 Mod	Extracted:	Jul-07-09 12:24	Jul-07-09 12:24				
	Analyzed:	Jul-07-09 13:05	Jul-07-09 13:31				
	Units/RL:	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		50.9 15.5	289 16.1				
C12-C28 Diesel Range Hydrocarbons		66.1 15.5	2620 16.1				
C28-C35 Oil Range Hydrocarbons		ND 15.5	153 16.1				
Total TPH		117 15.5	3062 16.1				

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

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

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6" Pearce

Work Orders : 337166,

Project ID: 2008-113

Lab Batch #: 764887

Sample: 533308-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 08:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0353	0.0300	118	80-120	

Lab Batch #: 764887

Sample: 533308-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 08:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0380	0.0300	127	80-120	*

Lab Batch #: 764887

Sample: 533308-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 09:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0166	0.0300	55	80-120	*

Lab Batch #: 764887

Sample: 337166-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 12:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0353	0.0300	118	80-120	

Lab Batch #: 764887

Sample: 337166-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 13:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0232	0.0300	77	80-120	**
4-Bromofluorobenzene	0.0532	0.0300	177	80-120	**

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6" Pearce

Work Orders : 337166,

Project ID: 2008-113

Lab Batch #: 764887

Sample: 337016-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 20:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0404	0.0300	135	80-120	*

Lab Batch #: 764887

Sample: 337016-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 20:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0378	0.0300	126	80-120	*

Lab Batch #: 764775

Sample: 533254-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/07/09 11:21

SURROGATE RECOVERY STUDY

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

Lab Batch #: 764775

Sample: 533254-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/07/09 11:46

SURROGATE RECOVERY STUDY

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

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	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6" Pearce

Work Orders : 337166,

Project ID: 2008-113

Lab Batch #: 764775

Sample: 337166-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 13:05

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	47.1	49.9	94	70-135	

Lab Batch #: 764775

Sample: 337166-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 13:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	52.3	50.0	105	70-135	

Lab Batch #: 764775

Sample: 337224-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 21:26

SURROGATE RECOVERY STUDY

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

Lab Batch #: 764775

Sample: 337224-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 21:51

SURROGATE RECOVERY STUDY

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

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: E.K. Queen 6" Pearce

Work Order #: 337166

Analyst: BRB

Date Prepared: 07/06/2009

Project ID: 2008-113

Date Analyzed: 07/08/2009

Lab Batch ID: 764887

Sample: 533308-1-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 [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											
Benzene	ND	0.1000	0.0885	89	0.5	0.4494	90	134	70-130	35	
Toluene	ND	0.1000	0.0836	84	0.5	0.4291	86	135	70-130	35	
Ethylbenzene	ND	0.1000	0.0935	94	0.5	0.4909	98	136	71-129	35	
m,p-Xylenes	ND	0.2000	0.1901	95	1	1.002	100	136	70-135	35	
o-Xylene	ND	0.1000	0.0904	90	0.5	0.4748	95	136	71-133	35	

Analyst: BHW

Date Prepared: 07/07/2009

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	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											
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	

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: E.K. Queen 6" Pearce

Work Order #: 337166

Project ID: 2008-113

Lab Batch ID: 764887

QC- Sample ID: 337016-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/08/2009

Date Prepared: 07/06/2009

Analyst: BRB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1015	0.0824	81	0.1015	0.0767	76	7	70-130	35	
Toluene	ND	0.1015	0.0884	87	0.1015	0.0787	78	12	70-130	35	
Ethylbenzene	ND	0.1015	0.0922	91	0.1015	0.0846	83	9	71-129	35	
m,p-Xylenes	ND	0.2029	0.1928	95	0.2029	0.1733	85	11	70-135	35	
o-Xylene	ND	0.1015	0.0914	90	0.1015	0.0819	81	11	71-133	35	

Lab Batch ID: 764775

QC- Sample ID: 337224-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/07/2009

Date Prepared: 07/07/2009

Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	729	1130	1840	98	1130	1870	101	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	3940	1130	5230	114	1130	5440	133	4	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Sample Duplicate Recovery



Project Name: E.K. Queen 6" Pearce

Work Order #: 337166

Lab Batch #: 764625

Date Analyzed: 07/06/2009

QC- Sample ID: 337166-001 D

Reporting Units: %

Project ID: 2008-113

Analyst: LATCOR

Date Prepared: 07/06/2009

Batch #: 1

Matrix: Soil

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

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

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin Env / Plains
 Date/ Time: 7.2.09 16:34
 Lab ID #: 337166
 Initials: al

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<u>Yes</u>	No	<u>2.6</u> °C	
#2	Shipping container in good condition?	<u>Yes</u>	No		
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	<u>Not Present</u>	
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present	
#5	Chain of Custody present?	<u>Yes</u>	No		
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No		
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No		
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No		
#11	Containers supplied by ELOT?	<u>Yes</u>	No		
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below	
#13	Samples properly preserved?	<u>Yes</u>	No	See Below	
#14	Sample bottles intact?	<u>Yes</u>	No		
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No		
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No		
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below	
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below	
#19	Subcontract of sample(s)?	<u>Yes</u>	No	<u>Not Applicable</u>	
#20	VOC samples have zero headspace?	<u>Yes</u>	No	<u>Not Applicable</u>	<u>al</u>

Variance Documentation

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

Regarding: _____

Corrective Action Taken:

Check all that Apply:

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

Analytical Report 337283

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

E.K. Queen 6" Pearce

2008-113

13-JUL-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

Arizona certification numbers: Houston, TX AZ0738

New Jersey certification numbers: Houston, TX TX007

Pennsylvania certification numbers: Houston, TX 68-03610

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

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

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13-JUL-09

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

Reference: XENCO Report No: **337283**
E.K. Queen 6" Pearce
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 337283. 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. 337283 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 337283



PLAINS ALL AMERICAN EH&S, Midland, TX

E.K. Queen 6" Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Over Burden - 1	S	Jul-06-09 15:00		337283-001
Over Burden - 3	S	Jul-06-09 15:05		337283-002



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: E.K. Queen 6" Pearce

Project ID: 2008-113

Work Order Number: 337283

Report Date: 13-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-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 below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 337283-002,337283-001, 533433-1-BKS



Certificate of Analysis Summary 337283

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: E.K. Queen 6" Pearce

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

Report Date: 13-JUL-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: Field Id: Depth: Matrix: Sampled:	337283-001 Over Burden - 1 SOIL Jul-06-09 15:00	337283-002 Over Burden - 3 SOIL Jul-06-09 15:05				
BTEX by EPA 8021B	Extracted: Analyzed: Units/RL:	Jul-09-09 17:00 Jul-10-09 10:47 mg/kg RL	Jul-09-09 17:00 Jul-10-09 11:09 mg/kg RL				
Benzene		ND 0.0011	ND 0.0011				
Toluene		ND 0.0022	ND 0.0022				
Ethylbenzene		ND 0.0011	ND 0.0011				
m,p-Xylenes		ND 0.0022	ND 0.0022				
o-Xylene		ND 0.0011	ND 0.0011				
Total Xylenes		ND 0.0011	ND 0.0011				
Total BTEX		ND 0.0011	ND 0.0011				
Percent Moisture	Extracted: Analyzed: Units/RL:	Jul-07-09 16:00 Jul-07-09 16:00 % RL	Jul-07-09 16:00 Jul-07-09 16:00 % RL				
Percent Moisture		9.13 1.00	9.34 1.00				
TPH By SW8015 Mod	Extracted: Analyzed: Units/RL:	Jul-08-09 13:39 Jul-08-09 18:33 mg/kg RL	Jul-08-09 13:39 Jul-08-09 18:59 mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 16.5	ND 16.5				
C12-C28 Diesel Range Hydrocarbons		16.7 16.5	22.6 16.5				
C28-C35 Oil Range Hydrocarbons		ND 16.5	ND 16.5				
Total TPH		16.7 16.5	22.6 16.5				

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

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Brent Barron
Odessa Laboratory Director

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

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6" Pearce

Work Orders : 337283,

Project ID: 2008-113

Lab Batch #: 765081

Sample: 533433-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/10/09 09:22

SURROGATE RECOVERY STUDY

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

Lab Batch #: 765081

Sample: 533433-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/10/09 09:43

SURROGATE RECOVERY STUDY

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

Lab Batch #: 765081

Sample: 533433-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/10/09 10:26

SURROGATE RECOVERY STUDY

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

Lab Batch #: 765081

Sample: 337283-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 10:47

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	0.0190	0.0300	63	80-120	*

Lab Batch #: 765081

Sample: 337283-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 11:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0226	0.0300	75	80-120	*

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6" Pearce

Work Orders : 337283,

Project ID: 2008-113

Lab Batch #: 764867

Sample: 533304-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 15:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod 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	

Lab Batch #: 764867

Sample: 533304-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 15:30

SURROGATE RECOVERY STUDY

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

Lab Batch #: 764867

Sample: 533304-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 15:56

SURROGATE RECOVERY STUDY

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

Lab Batch #: 764867

Sample: 337283-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 18:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.9	107	70-135	
o-Terphenyl	55.8	50.0	112	70-135	

Lab Batch #: 764867

Sample: 337283-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 18:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.8	110	70-135	
o-Terphenyl	56.6	49.9	113	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6" Pearce

Work Orders : 337283,

Project ID: 2008-113

Lab Batch #: 764867

Sample: 337279-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 19:25

SURROGATE RECOVERY STUDY

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

Lab Batch #: 764867

Sample: 337279-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 19:51

SURROGATE RECOVERY STUDY

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

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: E.K. Queen 6" Pearce

Work Order #: 337283

Analyst: BRB

Date Prepared: 07/09/2009

Project ID: 2008-113

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 [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											
Benzene	ND	0.1000	0.0787	79	0.1	0.0802	80	2	70-130	35	
Toluene	ND	0.1000	0.0751	75	0.1	0.0766	77	2	70-130	35	
Ethylbenzene	ND	0.1000	0.0845	85	0.1	0.0859	86	2	71-129	35	
m,p-Xylenes	ND	0.2000	0.1724	86	0.2	0.1751	88	2	70-135	35	
o-Xylene	ND	0.1000	0.0813	81	0.1	0.0827	83	2	71-133	35	

Analyst: BHW

Date Prepared: 07/08/2009

Date Analyzed: 07/08/2009

Lab Batch ID: 764867

Sample: 533304-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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											
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 / MSD Recoveries



Project Name: E.K. Queen 6" Pearce

Work Order #: 337283

Project ID: 2008-113

Lab Batch ID: 764867

QC- Sample ID: 337279-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/08/2009

Date Prepared: 07/08/2009

Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	23.7	1030	872	82	1020	891	85	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	126	1030	1040	89	1020	1060	92	2	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Sample Duplicate Recovery



Project Name: E.K. Queen 6" Pearce

Work Order #: 337283

Lab Batch #: 764742

Project ID: 2008-113

Date Analyzed: 07/07/2009

Date Prepared: 07/07/2009

Analyst: BEV

QC- Sample ID: 337200-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

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

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

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin / Plains

Date/ Time: 07/07/09 10:15

Lab ID #: 337283

Initials: gms

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<u>Yes</u>	No	0.4 °C	
#2	Shipping container in good condition?	<u>Yes</u>	No		
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	<u>Not Present</u>	
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present	
#5	Chain of Custody present?	<u>Yes</u>	No		
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No		
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No		
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No		
#11	Containers supplied by ELOT?	<u>Yes</u>	No		
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below	
#13	Samples properly preserved?	<u>Yes</u>	No	See Below	
#14	Sample bottles intact?	<u>Yes</u>	No		
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No		
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No		
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below	
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below	
#19	Subcontract of sample(s)?	<u>Yes</u>	No	<u>Not Applicable</u>	
#20	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken:

Check all that Apply:

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

Analytical Report 346220

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen 6-Inch Pearce

2008-113

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 (AAL11), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

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

Xenco-Boca Raton (EPA Lab Code: FL00449): Florida(E86240),

South Carolina(96031001), Louisiana(04154), Georgia(917)



06-OCT-09

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

Reference: XENCO Report No: **346220**
EK Queen 6-Inch Pearce
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 346220. 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. 346220 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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PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen 6-Inch Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Deep # 2 @ 35'	S	Sep-24-09 14:30		346220-001
SVE Deep # 2 @ 43'	S	Sep-24-09 14:45		346220-002
SVE Shallow "A" @ 20'	S	Sep-24-09 15:50		346220-003
SVE Shallow "A" @ 25'	S	Sep-24-09 16:10		346220-004
SVE Shallow "A" @ 30'	S	Sep-24-09 16:40		346220-005
SVE Deep # 5 @ 35'	S	Sep-25-09 08:10		346220-006
SVE Deep # 5 @ 40'	S	Sep-25-09 08:40		346220-007
SVE Deep # 1 @ 35'	S	Sep-25-09 09:30		346220-008
SVE Deep # 1 @ 40'	S	Sep-25-09 09:50		346220-009
SVE Shallow "B" @ 20'	S	Sep-25-09 11:00		346220-010
SVE Shallow "B" @ 25'	S	Sep-25-09 11:20		346220-011
SVE Shallow "B" @ 30'	S	Sep-25-09 11:50		346220-012
SVE Deep # 3 @ 35'	S	Sep-25-09 13:40		346220-013
SVE Deep # 3 @ 40'	S	Sep-24-09 13:55		346220-014
SVE Deep # 4 @ 35'	S	Sep-24-09 14:50		346220-015
SVE Deep # 4 @ 40'	S	Sep-25-09 15:30		346220-016



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen 6-Inch Pearce

Project ID: 2008-113

Work Order Number: 346220

Report Date: 06-OCT-09

Date Received: 09/28/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-774613 Percent Moisture

None

Batch: LBA-774616 Percent Moisture

AD2216A

Batch 774616, Percent Moisture RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 346220-009, -011, -006, -013, -016, -007, -012, -005, -015, -008, -010, -014.

Batch: LBA-774858 BTEX-MTBE EPA 8021B

SW8021BM

Batch 774858, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 346220-010.



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen 6-Inch Pearce

Project ID: 2008-113

Work Order Number: 346220

Report Date: 06-OCT-09

Date Received: 09/28/2009

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: 346220-004,346220-009,346220-008.

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

Samples affected are: 346220-005.

SW8021BM

Batch 774935, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 346220-009, -004, -013, -016, -012, -005, -015, -008, -014.

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

Batch: LBA-775029 TPH by SW8015 Mod

None



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen 6-Inch Pearce

Project ID: 2008-113

Work Order Number: 346220

Report Date: 06-OCT-09

Date Received: 09/28/2009

Batch: LBA-775688 BTEX-MTBE EPA 8021B
SW8021BM

Batch 775688, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 346220-003, -011.

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

SW8021BM

Batch 775688, 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 346220-003, 346220-011.

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

Samples affected are: 346220-011, 346220-003.



Certificate of Analysis Summary 346220

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen 6-Inch Pearce

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

Report Date: 06-OCT-09

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i> <i>Field Id:</i> <i>Depth:</i> <i>Matrix:</i> <i>Sampled:</i>	346220-001 SVE Deep # 2 @ 35'	346220-002 SVE Deep # 2 @ 43'	346220-003 SVE Shallow "A" @ 20'	346220-004 SVE Shallow "A" @ 25'	346220-005 SVE Shallow "A" @ 30'	346220-006 SVE Deep # 5 @ 35'
BTEX by EPA 8021B	<i>Extracted:</i> <i>Analyzed:</i> <i>Units/RL:</i>	Sep-29-09 15:50 Sep-29-09 23:07 mg/kg RL	Sep-29-09 15:50 Sep-29-09 23:27 mg/kg RL	Oct-05-09 11:34 Oct-05-09 13:58 mg/kg RL	Sep-30-09 10:00 Sep-30-09 17:45 mg/kg RL	Sep-30-09 10:00 Sep-30-09 18:06 mg/kg RL	Sep-29-09 15:50 Sep-30-09 00:47 mg/kg RL
Benzene		ND 0.0010	ND 0.0010	ND 0.0505	3.225 0.2004	ND 0.0512	0.0051 0.0010
Toluene		ND 0.0020	ND 0.0020	4.508 0.1010	71.12 0.4009	3.009 0.1024	0.0421 0.0020
Ethylbenzene		ND 0.0010	ND 0.0010	10.04 0.0505	53.67 0.2004	9.162 0.0512	0.0196 0.0010
m,p-Xylenes		ND 0.0020	ND 0.0020	13.58 0.1010	60.85 0.4009	12.64 0.1024	0.0209 0.0020
o-Xylene		ND 0.0010	ND 0.0010	5.902 0.0505	25.12 0.2004	5.810 0.0512	0.0085 0.0010
Total Xylenes		ND 0.0010	ND 0.0010	19.48 0.0505	85.97 0.2004	18.45 0.0512	0.0294 0.0010
Total BTEX		ND 0.0010	ND 0.0010	34.03 0.0505	213.99 0.2004	30.62 0.0512	0.0962 0.0010
TPH By SW8015 Mod	<i>Extracted:</i> <i>Analyzed:</i> <i>Units/RL:</i>	Sep-30-09 12:25 Sep-30-09 14:59 mg/kg RL	Sep-30-09 12:25 Sep-30-09 15:26 mg/kg RL	Sep-30-09 12:25 Sep-30-09 15:53 mg/kg RL	Sep-30-09 12:25 Sep-30-09 16:20 mg/kg RL	Sep-30-09 12:25 Sep-30-09 16:46 mg/kg RL	Sep-30-09 12:25 Sep-30-09 17:13 mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		ND 15.3	ND 15.1	611 75.7	2000 75.8	768 15.4	ND 15.3
C12-C28 Diesel Range Hydrocarbons		ND 15.3	ND 15.1	1740 75.7	4330 75.8	2560 15.4	ND 15.3
C28-C35 Oil Range Hydrocarbons		ND 15.3	ND 15.1	235 75.7	914 75.8	695 15.4	ND 15.3
Total TPH		ND 15.3	ND 15.1	2586 75.7	7244 75.8	4023 15.4	ND 15.3

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The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
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Brent Barron, II
Odessa Laboratory Manager



Certificate of Analysis Summary 346220

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen 6-Inch Pearce

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

Report Date: 06-OCT-09

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	346220-001	346220-002	346220-003	346220-004	346220-005	346220-006
	<i>Field Id:</i>	SVE Deep # 2 @ 35'	SVE Deep # 2 @ 43'	SVE Shallow "A" @ 20'	SVE Shallow "A" @ 25'	SVE Shallow "A" @ 30'	SVE Deep # 5 @ 35'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Percent Moisture	<i>Sampled:</i>	Sep-24-09 14:30	Sep-24-09 14:45	Sep-24-09 15:50	Sep-24-09 16:10	Sep-24-09 16:40	Sep-25-09 08:10
	<i>Extracted:</i>						
	<i>Analyzed:</i>	Sep-29-09 09:07	Sep-29-09 09:07	Sep-29-09 09:07	Sep-29-09 09:07	Sep-29-09 09:15	Sep-29-09 09:15
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		1.89 1.00	ND 1.00	ND 1.00	1.01 1.00	2.31 1.00	1.78 1.00

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Brent Barron, II
Odessa Laboratory Manager



Certificate of Analysis Summary 346220

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: EK Queen 6-Inch Pearce

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

Report Date: 06-OCT-09

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	346220-007	346220-008	346220-009	346220-010	346220-011	346220-012
	<i>Field Id:</i>	SVE Deep # 5 @ 40'	SVE Deep # 1 @ 35'	SVE Deep # 1 @ 40'	SVE Shallow "B" @ 20'	SVE Shallow "B" @ 25'	SVE Shallow "B" @ 30'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-25-09 08:40	Sep-25-09 09:30	Sep-25-09 09:50	Sep-25-09 11:00	Sep-25-09 11:20	Sep-25-09 11:50
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-29-09 15:50	Sep-30-09 10:00	Sep-30-09 10:00	Sep-29-09 15:50	Oct-05-09 11:34	Sep-30-09 10:00
	<i>Analyzed:</i>	Sep-30-09 01:07	Sep-30-09 18:27	Sep-30-09 18:49	Sep-30-09 02:07	Oct-05-09 18:14	Oct-01-09 12:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.0031 0.0010	3.931 0.5047	5.105 0.2531	0.0205 0.0010	0.0584 0.0508	0.3639 0.2545
Toluene		0.0251 0.0020	79.46 1.009	100.4 0.5062	0.1283 0.0021	17.10 0.1016	17.05 0.5090
Ethylbenzene		0.0122 0.0010	76.44 0.5047	81.54 0.2531	0.0490 0.0010	16.71 D 0.2540	23.14 0.2545
m,p-Xylenes		0.0127 0.0020	93.77 1.009	96.10 0.5062	0.1109 0.0021	24.91 0.1016	30.93 0.5090
o-Xylene		0.0052 0.0010	36.50 0.5047	40.16 0.2531	0.0615 0.0010	11.09 0.0508	12.08 0.2545
Total Xylenes		0.0179 0.0010	130.27 0.5047	136.26 0.2531	0.1724 0.0010	36.00 0.0508	43.01 0.2545
Total BTEX		0.0583 0.0010	290.10 0.5047	323.3 0.2531	0.3702 0.0010	69.87 0.0508	83.56 0.2545
Percent Moisture	<i>Extracted:</i>	Sep-29-09 09:15	Sep-29-09 09:15	Sep-29-09 09:15	Sep-29-09 09:15	Sep-29-09 09:15	Sep-29-09 09:15
	<i>Analyzed:</i>	Sep-29-09 09:15	Sep-29-09 09:15	Sep-29-09 09:15	Sep-29-09 09:15	Sep-29-09 09:15	Sep-29-09 09:15
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		ND 1.00	1.12 1.00	1.61 1.00	4.55 1.00	1.59 1.00	1.76 1.00
TPH By SW8015 Mod	<i>Extracted:</i>	Sep-30-09 12:25	Sep-30-09 12:25	Sep-30-09 12:25	Sep-30-09 12:25	Sep-30-09 12:25	Sep-30-09 12:25
	<i>Analyzed:</i>	Sep-30-09 17:40	Sep-30-09 18:07	Sep-30-09 18:34	Sep-30-09 22:06	Sep-30-09 22:59	Sep-30-09 23:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		ND 15.1	2370 75.8	3050 76.2	49.5 15.7	1280 15.2	1160 15.3
C12-C28 Diesel Range Hydrocarbons		ND 15.1	5070 75.8	5610 76.2	367 15.7	2700 15.2	2700 15.3
C28-C35 Oil Range Hydrocarbons		ND 15.1	1210 75.8	1370 76.2	67.9 15.7	730 15.2	730 15.3
Total TPH		ND 15.1	8650 75.8	10030 76.2	484 15.7	4710 15.2	4590 15.3

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.
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Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II
Odessa Laboratory Manager



Certificate of Analysis Summary 346220

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen 6-Inch Pearce

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

Report Date: 06-OCT-09

Project Location: Lea County, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	346220-013	346220-014	346220-015	346220-016		
	Field Id:	SVE Deep # 3 @ 35'	SVE Deep # 3 @ 40'	SVE Deep # 4 @ 35'	SVE Deep # 4 @ 40'		
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Sep-25-09 13:40	Sep-24-09 13:55	Sep-24-09 14:50	Sep-25-09 15:30		
BTEX by EPA 8021B	Extracted:	Sep-30-09 10:00	Sep-30-09 10:00	Sep-30-09 10:00	Sep-30-09 10:00		
	Analyzed:	Oct-01-09 10:29	Oct-01-09 10:50	Oct-01-09 11:11	Oct-01-09 11:33		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010		
Toluene		ND 0.0020	ND 0.0020	ND 0.0021	ND 0.0020		
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010		
m,p-Xylenes		ND 0.0020	ND 0.0020	ND 0.0021	ND 0.0020		
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010		
Total Xylenes		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010		
Total BTEX		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010		
Percent Moisture	Extracted:	Sep-29-09 09:15	Sep-29-09 09:15	Sep-29-09 09:15	Sep-29-09 09:15		
	Analyzed:						
	Units/RL:	% RL	% RL	% RL	% RL		
Percent Moisture		ND 1.00	ND 1.00	3.21 1.00	ND 1.00		
TPH By SW8015 Mod	Extracted:	Sep-30-09 12:25	Sep-30-09 12:25	Sep-30-09 12:25	Sep-30-09 12:25		
	Analyzed:	Sep-30-09 23:51	Oct-01-09 00:17	Oct-01-09 00:43	Oct-01-09 01:09		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 15.1	ND 15.1	ND 15.5	ND 15.1		
C12-C28 Diesel Range Hydrocarbons		ND 15.1	ND 15.1	ND 15.5	ND 15.1		
C28-C35 Oil Range Hydrocarbons		ND 15.1	ND 15.1	ND 15.5	ND 15.1		
Total TPH		ND 15.1	ND 15.1	ND 15.5	ND 15.1		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
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Brent Barron, II
Odessa Laboratory Manager

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

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Form 2 - Surrogate Recoveries

Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220,

Project ID: 2008-113

Lab Batch #: 774858

Sample: 539196-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/29/09 21:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 774858

Sample: 539196-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/29/09 22:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 774858

Sample: 539196-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/29/09 22:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 774858

Sample: 346220-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/29/09 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	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 774858

Sample: 346220-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/29/09 23:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220,

Project ID: 2008-113

Lab Batch #: 774858

Sample: 346220-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 00:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 774858

Sample: 346220-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 01:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 774858

Sample: 346220-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 02:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0226	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 774858

Sample: 346220-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 06:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 774858

Sample: 346220-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 06:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220,

Project ID: 2008-113

Lab Batch #: 774935

Sample: 539231-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/09 13:14

SURROGATE RECOVERY STUDY

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

Lab Batch #: 774935

Sample: 539231-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/09 13:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.0302	0.0300	101	80-120	

Lab Batch #: 774935

Sample: 346220-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 17:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0214	0.0300	71	80-120	**
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 774935

Sample: 346220-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 18:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0240	0.0300	80	80-120	
4-Bromofluorobenzene	0.0393	0.0300	131	80-120	**

Lab Batch #: 774935

Sample: 346220-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 18:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0234	0.0300	78	80-120	**
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220,

Project ID: 2008-113

Lab Batch #: 774935

Sample: 346220-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 18:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0218	0.0300	73	80-120	**
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 774935

Sample: 346220-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 10:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 774935

Sample: 346220-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 10:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 774935

Sample: 346220-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 11:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 774935

Sample: 346220-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 11:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220,

Project ID: 2008-113

Lab Batch #: 774935

Sample: 346220-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 12:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0239	0.0300	80	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

Lab Batch #: 774935

Sample: 346186-005 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 12:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0347	0.0300	116	80-120	

Lab Batch #: 774935

Sample: 346186-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 12:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 775688

Sample: 539649-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/05/09 09:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 775688

Sample: 539649-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/05/09 10:04

SURROGATE RECOVERY STUDY

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

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220,

Project ID: 2008-113

Lab Batch #: 775688

Sample: 539649-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/05/09 10:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 775688

Sample: 346220-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/09 13:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0233	0.0300	78	80-120	**
4-Bromofluorobenzene	0.0370	0.0300	123	80-120	**

Lab Batch #: 775688

Sample: 346220-011 / DL

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/09 14:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 775688

Sample: 346220-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/09 18:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0236	0.0300	79	80-120	**
4-Bromofluorobenzene	0.0365	0.0300	122	80-120	**

Lab Batch #: 775688

Sample: 346401-002 S / MS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/05/09 18:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220,

Project ID: 2008-113

Lab Batch #: 775688

Sample: 346401-002 SD / MSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/05/09 18:56

SURROGATE RECOVERY STUDY

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

Lab Batch #: 775029

Sample: 539272-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/09 13:38

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	47.3	50.0	95	70-135	

Lab Batch #: 775029

Sample: 539272-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/09 14:05

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	47.2	50.0	94	70-135	

Lab Batch #: 775029

Sample: 539272-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/09 14:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.1	100	91	70-135	
o-Terphenyl	48.9	50.0	98	70-135	

Lab Batch #: 775029

Sample: 346220-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 14:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	86.5	100	87	70-135	
o-Terphenyl	47.0	50.0	94	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220,

Project ID: 2008-113

Lab Batch #: 775029

Sample: 346220-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 15:26

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	56.9	50.0	114	70-135	

Lab Batch #: 775029

Sample: 346220-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 15:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	47.9	50.0	96	70-135	

Lab Batch #: 775029

Sample: 346220-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 16:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	54.8	50.0	110	70-135	

Lab Batch #: 775029

Sample: 346220-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 16:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	56.2	50.0	112	70-135	

Lab Batch #: 775029

Sample: 346220-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 17:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.7	100	87	70-135	
o-Terphenyl	46.1	50.0	92	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220,

Project ID: 2008-113

Lab Batch #: 775029

Sample: 346220-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 17:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.7	100	86	70-135	
o-Terphenyl	45.3	50.0	91	70-135	

Lab Batch #: 775029

Sample: 346220-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 18:07

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	54.7	50.0	109	70-135	

Lab Batch #: 775029

Sample: 346220-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 18:34

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	50.9	50.0	102	70-135	

Lab Batch #: 775029

Sample: 346220-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 22:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.1	100	91	70-135	
o-Terphenyl	47.6	50.0	95	70-135	

Lab Batch #: 775029

Sample: 346220-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 22:59

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	57.9	50.0	116	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220,

Project ID: 2008-113

Lab Batch #: 775029

Sample: 346220-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 23:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

Lab Batch #: 775029

Sample: 346220-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 23:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.1	100	87	70-135	
o-Terphenyl	45.5	50.0	91	70-135	

Lab Batch #: 775029

Sample: 346220-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 00:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.9	100	86	70-135	
o-Terphenyl	44.9	50.0	90	70-135	

Lab Batch #: 775029

Sample: 346220-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 00:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.8	100	89	70-135	
o-Terphenyl	46.7	50.0	93	70-135	

Lab Batch #: 775029

Sample: 346220-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 01:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.2	100	89	70-135	
o-Terphenyl	47.0	50.0	94	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220,

Project ID: 2008-113

Lab Batch #: 775029

Sample: 346220-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 03:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	45.5	50.0	91	70-135	

Lab Batch #: 775029

Sample: 346220-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/09 03:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	43.7	50.0	87	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen 6-Inch Pearce

Work Order #: 346220

Project ID: 2008-113

Lab Batch #: 774935

Sample: 539231-1-BKS

Matrix: Solid

Date Analyzed: 09/30/2009

Date Prepared: 09/30/2009

Analyst: ASA

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

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

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

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

BRL - Below Reporting Limit



BS / BSD Recoveries



Project Name: EK Queen 6-Inch Pearce

Work Order #: 346220

Analyst: ASA

Date Prepared: 09/29/2009

Project ID: 2008-113

Date Analyzed: 09/29/2009

Lab Batch ID: 774858

Sample: 539196-1-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 [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											
Benzene	ND	0.1000	0.0924	92	0.1	0.0945	95	2	70-130	35	
Toluene	ND	0.1000	0.0911	91	0.1	0.0937	94	3	70-130	35	
Ethylbenzene	ND	0.1000	0.0919	92	0.1	0.0949	95	3	71-129	35	
m,p-Xylenes	ND	0.2000	0.2002	100	0.2	0.2070	104	3	70-135	35	
o-Xylene	ND	0.1000	0.0978	98	0.1	0.1011	101	3	71-133	35	

Analyst: ASA

Date Prepared: 10/05/2009

Date Analyzed: 10/05/2009

Lab Batch ID: 775688

Sample: 539649-1-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 [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											
Benzene	ND	0.1000	0.1016	102	0.1	0.0988	99	3	70-130	35	
Toluene	ND	0.1000	0.1000	100	0.1	0.0969	97	3	70-130	35	
Ethylbenzene	ND	0.1000	0.1014	101	0.1	0.0979	98	4	71-129	35	
m,p-Xylenes	ND	0.2000	0.2220	111	0.2	0.2148	107	3	70-135	35	
o-Xylene	ND	0.1000	0.1063	106	0.1	0.1029	103	3	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: EK Queen 6-Inch Pearce

Work Order #: 346220

Analyst: BHW

Date Prepared: 09/30/2009

Project ID: 2008-113

Date Analyzed: 09/30/2009

Lab Batch ID: 775029

Sample: 539272-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	874	87	1000	876	88	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	999	100	1000	1000	100	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: EK Queen 6-Inch Pearce

Work Order #: 346220

Project ID: 2008-113

Lab Batch ID: 774858

QC- Sample ID: 346220-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/30/2009

Date Prepared: 09/29/2009

Analyst: ASA

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1013	0.0769	76	0.1019	0.0770	76	0	70-130	35	
Toluene	ND	0.1013	0.0779	77	0.1019	0.0773	76	1	70-130	35	
Ethylbenzene	ND	0.1013	0.0751	74	0.1019	0.0750	74	0	71-129	35	
m,p-Xylenes	ND	0.2026	0.1634	81	0.2039	0.1621	79	1	70-135	35	
o-Xylene	ND	0.1013	0.0794	78	0.1019	0.0794	78	0	71-133	35	

Lab Batch ID: 774935

QC- Sample ID: 346186-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/01/2009

Date Prepared: 09/30/2009

Analyst: ASA

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1262	0.0663	53	0.1262	0.0669	53	1	70-130	35	X
Toluene	ND	0.1262	0.0673	53	0.1262	0.0678	54	1	70-130	35	X
Ethylbenzene	ND	0.1262	0.0685	54	0.1262	0.0689	55	1	71-129	35	X
m,p-Xylenes	ND	0.2523	0.1479	59	0.2523	0.1498	59	1	70-135	35	X
o-Xylene	ND	0.1262	0.0700	55	0.1262	0.0694	55	1	71-133	35	X

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen 6-Inch Pearce

Work Order # : 346220

Project ID: 2008-113

Lab Batch ID: 775688

QC- Sample ID: 346401-002 S

Batch #: 1 Matrix: Solid

Date Analyzed: 10/05/2009

Date Prepared: 10/05/2009

Analyst: ASA

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1040	0.0561	54	0.1040	0.0576	55	3	70-130	35	X
Toluene	ND	0.1040	0.0426	41	0.1040	0.0435	42	2	70-130	35	X
Ethylbenzene	ND	0.1040	0.0283	27	0.1040	0.0277	27	2	71-129	35	X
m,p-Xylenes	ND	0.2079	0.0564	27	0.2079	0.0541	26	4	70-135	35	X
o-Xylene	ND	0.1040	0.0291	28	0.1040	0.0264	25	10	71-133	35	X

Lab Batch ID: 775029

QC- Sample ID: 346220-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/01/2009

Date Prepared: 09/30/2009

Analyst: BHW

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	836	84	1000	824	82	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	968	97	1000	945	95	2	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Project Name: EK Queen 6-Inch Pearce

Work Order #: 346220

Lab Batch #: 774613

Project ID: 2008-113

Date Analyzed: 09/29/2009

Date Prepared: 09/29/2009

Analyst: BEV

QC- Sample ID: 346186-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

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

Lab Batch #: 774616

Date Analyzed: 09/29/2009

Date Prepared: 09/29/2009

Analyst: BEV

QC- Sample ID: 346220-005 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.31	6.95	100	20	F

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

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

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

PAGE 01 OF 02

Project Manager: Curt Stanley

Project Name: EK Queen 6-Inch Pearce

Company Name Basin Environmental Service Technologies, LLC

Project #: 2008-113

Company Address: 2800 Plains Hwy

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No: (575) 441-2244

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: 

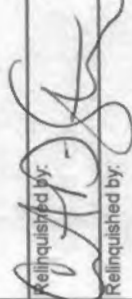
e-mail: cstanley@basinenv.com

(lab use only)

ORDER #: 346220

LAB # (lab use only)	ORDER #:	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers										Matrix	Analyze For:														
									Ice	HNO ₃	HCl (VOA X 2)	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None (PAH)	Other (Specify)	DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid		NP=Non-Potable Specify Other	TPH: 418.1 8015M	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/8030 or BTEX 8260	RCI	N.O.R.M.	PAH	EPA Paint Filter Test	Chlorides E 300
01		SVE Deep #2 @ 35'			9/24/2009	1430		1	X							Soil			X	X														X
02		SVE Deep #2 @ 43'			9/24/2009	1445		1	X							Soil			X	X														X
03		SVE Shallow "A" @ 20'			9/24/2009	1550		1	X							Soil			X	X														X
04		SVE Shallow "A" @ 25'			9/24/2009	1610		1	X							Soil			X	X														X
05		SVE Shallow "A" @ 30'			9/25/2009	1640		1	X							Soil			X	X														X
06		SVE Deep #5 @ 35'			9/25/2009	0810		1	X							Soil			X	X														X
07		SVE Deep #5 @ 40'			9/25/2009	0840		1	X							Soil			X	X														X
08		SVE Deep #1 @ 35'			9/25/2009	0930		1	X							Soil			X	X														X
09		SVE Deep #1 @ 40'			9/25/2009	0950		1	X							Soil			X	X														X
10		SVE Shallow "B" @ 20'			9/25/2009	1100		1	X							Soil			X	X														X

Special Instructions:

Relinquished by: 

Date: 9/24/09

Time: 0935

Relinquished by: 

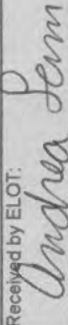
Date:

Time:

Relinquished by:

Date:

Time:

Received by: 

Received by ELOT: Andrea Lem

Date: 9-28-09

Time: 9:35

Laboratory Comments:

Sample Containers Intact? ☒ N
VOCs Free of Headspace? ☒ N
Labels on container(s) ☒ N
Custody seals on container(s) ☒ N
Custody seals on cooler(s) ☒ N
Sample Hand Delivered by Sampler/Client Rep. ? ☒ N
by Courier? ☒ UPS
DHL
FedEx
Lone Star
Temperature Upon Receipt: 3.6 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin Env. / Akins
 Date/ Time: 9-28-09 9:35
 Lab ID #: 346220
 Initials: AL

Sample Receipt Checklist

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

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Gracie Avalos

From: Camille J. Bryant [cjbryant@basin-consulting.com]
Sent: Wednesday, September 30, 2009 8:11 AM
To: Gracie Avalos
Subject: Re: WO 346220 / EK Queen 6-Inch Pearce

Gracie,

The sample SVE Shallow "A" was indeed collected on the 24th as per the container, thanks for catching our mistake.

Camille

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

From: Gracie Avalos
To: cdstanley@basin-consulting.com ; 'Camille J. Bryant'
Sent: Wednesday, September 30, 2009 7:08 AM
Subject: WO 346220 / EK Queen 6-Inch Pearce

Mr. Stanley / Ms. Bryant,

Please confirm that sample SVE Shallow "A" @ 30' (lab id -005) was indeed sampled on 09/24/09 @ 16:40, per your label on the sample container. I ask as your chain of custody reflects being sampled on the 25th. Let me know.

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

CONFIDENTIALITY STATEMENT

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 Please consider the environment before printing this email.

9/30/2009

Analytical Report 405302

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

04-FEB-11



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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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 (AAL11), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

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

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

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

Xenco Phoenix (EPA Lab Code: AZ00901):

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

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

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



04-FEB-11

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

Reference: XENCO Report No: **405302**
EK Queen Pearce
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 405302. 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. 405302 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 405302

PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-6 @ 20'	S	Jan-28-11 09:45		405302-001
SB-6 @ 25'	S	Jan-28-11 09:50		405302-002
SB-6 @ 30'	S	Jan-28-11 09:55		405302-003
SB-6 @ 35'	S	Jan-28-11 10:00		405302-004
SB-6 @ 40'	S	Jan-28-11 10:05		405302-005
SB-6 @ 45'	S	Jan-28-11 10:10		405302-006



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 405302

Report Date: 04-FEB-11

Date Received: 01/31/2011

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-842121 BTEX by EPA 8021

SW8021BM

Batch 842121, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Ethylbenzene recovered below QC limits in the Matrix Spike Duplicate.

Samples affected are: 405302-005, -001, -006, -004, -002, -003.

The Laboratory Control Sample for m_p-Xylenes , o-Xylene, Ethylbenzene is within laboratory Control Limits

SW8021BM

Batch 842121, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 405302-003.

Batch 842121, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 405302-002.

Batch: LBA-842208 TPH by SW8015 Mod

Batch: LBA-842217 Inorganic Anions In Soil by E300

RPD is outside QC limits for Chloride.

Samples affected 405302-001 thru 405302-006.



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 405302

Report Date: 04-FEB-11

Date Received: 01/31/2011

*Batch: LBA-842370 BTEX by EPA 8021
SW8021BM*

Batch 842370, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 405302-002,405600-001 D.

Batch 840062, RPD is outside QC limits for compounds m_p-xylene, ethylbenzene and o-xylene between sample and sample duplicate, samples affected are: 405302-002 .

Certificate of Analysis Summary 405302

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Mon Jan-31-11 04:40 pm

Report Date: 04-FEB-11

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	405302-001	405302-002	405302-003	405302-004	405302-005	405302-006
	<i>Field Id:</i>	SB-6 @ 20'	SB-6 @ 25'	SB-6 @ 30'	SB-6 @ 35'	SB-6 @ 40'	SB-6 @ 45'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-28-11 09:45	Jan-28-11 09:50	Jan-28-11 09:55	Jan-28-11 10:00	Jan-28-11 10:05	Jan-28-11 10:10
BTEX by EPA 8021	<i>Extracted:</i>	Feb-01-11 16:15	Feb-01-11 16:15	Feb-01-11 16:15	Feb-01-11 16:15	Feb-01-11 16:15	Feb-01-11 16:15
	<i>Analyzed:</i>	Feb-01-11 20:19	Feb-01-11 21:04	Feb-01-11 21:49	Feb-01-11 18:49	Feb-01-11 19:11	Feb-01-11 19:34
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.0069 0.0011	ND 0.0011	0.0093 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Toluene		0.0684 0.0022	0.0465 0.0021	0.0623 0.0021	0.0042 0.0020	ND 0.0021	ND 0.0020
Ethylbenzene		0.1594 0.0011	0.3581 0.0011	0.1858 0.0010	0.0263 0.0010	0.0121 0.0010	0.0163 0.0010
m_p-Xylenes		0.2629 0.0022	3.649 D 0.0212	0.2929 0.0021	0.0398 0.0020	0.0298 0.0021	0.0276 0.0020
o-Xylene		0.0490 0.0011	0.2607 0.0011	0.0847 0.0010	0.0235 0.0010	0.0232 0.0010	0.0173 0.0010
Xylenes, Total		0.3119 0.0011	1.270 0.0011	0.3776 0.0010	0.0633 0.0010	0.0530 0.0010	0.0449 0.0010
Total BTEX		0.5466 0.0011	1.674 0.0011	0.6350 0.0010	0.0938 0.0010	0.0651 0.0010	0.0612 0.0010
Inorganic Anions In Soil by E300	<i>Extracted:</i>	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30
	<i>Analyzed:</i>	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		23.1 5.43	11.5 5.29	12.6 5.28	10.6 5.11	9.38 5.15	10.9 5.12
Percent Moisture	<i>Extracted:</i>	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00
	<i>Analyzed:</i>	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		7.89 1.00	5.46 1.00	5.24 1.00	2.20 1.00	2.93 1.00	2.26 1.00
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-02-11 10:15	Feb-02-11 10:15	Feb-02-11 10:15	Feb-02-11 10:15	Feb-02-11 10:15	Feb-02-11 10:15
	<i>Analyzed:</i>	Feb-02-11 14:40	Feb-02-11 14:58	Feb-02-11 15:16	Feb-02-11 15:35	Feb-02-11 15:53	Feb-02-11 16:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		515 16.3	2030 15.9	1270 15.8	113 15.3	40.1 15.4	51.6 15.3
C12-C28 Diesel Range Hydrocarbons		2690 16.3	3060 15.9	3750 15.8	920 15.3	307 15.4	492 15.3
C28-C35 Oil Range Hydrocarbons		70.5 16.3	127 15.9	178 15.8	27.4 15.3	ND 15.4	ND 15.3
Total TPH		3280 16.3	5220 15.9	5200 15.8	1060 15.3	347 15.4	544 15.3

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.

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 405302,

Project ID: 2008-113

Lab Batch #: 842121

Sample: 594720-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/01/11 16:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 842121

Sample: 594720-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/01/11 17:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 842121

Sample: 594720-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/01/11 18:26

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	0.0276	0.0300	92	80-120	

Lab Batch #: 842121

Sample: 405302-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/01/11 18:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 842121

Sample: 405302-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/01/11 19:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 405302,

Project ID: 2008-113

Lab Batch #: 842121

Sample: 405302-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/01/11 19:34

SURROGATE RECOVERY STUDY

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

Lab Batch #: 842121

Sample: 405302-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/01/11 20:19

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	0.0327	0.0300	109	80-120	

Lab Batch #: 842121

Sample: 405302-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/01/11 21:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.3875	0.0300	1292	80-120	**

Lab Batch #: 842121

Sample: 405302-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/01/11 21:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.1155	0.0300	385	80-120	*

Lab Batch #: 842121

Sample: 405302-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/11 06:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 405302,

Project ID: 2008-113

Lab Batch #: 842121

Sample: 405302-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 07:05		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0280	0.0300	93	80-120
4-Bromofluorobenzene		0.0294	0.0300	98	80-120

Lab Batch #: 842370

Sample: 594857-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 02/03/11 10:17		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0299	0.0300	100	80-120
4-Bromofluorobenzene		0.0299	0.0300	100	80-120

Lab Batch #: 842370

Sample: 594857-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 02/03/11 11:23		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0298	0.0300	99	80-120
4-Bromofluorobenzene		0.0271	0.0300	90	80-120

Lab Batch #: 842370

Sample: 594857-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 02/03/11 12:07		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0283	0.0300	94	80-120
4-Bromofluorobenzene		0.0267	0.0300	89	80-120

Lab Batch #: 842370

Sample: 405302-002 / DL

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/03/11 12:30		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0278	0.0300	93	80-120
4-Bromofluorobenzene		0.0999	0.0300	333	80-120 **

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 405302,

Project ID: 2008-113

Lab Batch #: 842370

Sample: 405600-001 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/03/11 16:02		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0266	0.0300	89	80-120
4-Bromofluorobenzene		0.6522	0.0300	2174	80-120 **

Lab Batch #: 842208

Sample: 594767-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 02/02/11 12:50		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		85.6	101	85	70-135
o-Terphenyl		39.6	50.3	79	70-135

Lab Batch #: 842208

Sample: 594767-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 02/02/11 13:09		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		86.7	100	87	70-135
o-Terphenyl		38.3	50.0	77	70-135

Lab Batch #: 842208

Sample: 594767-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 02/02/11 13:27		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		72.6	100	73	70-135
o-Terphenyl		36.3	50.1	72	70-135

Lab Batch #: 842208

Sample: 405302-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 14:40		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		89.1	99.9	89	70-135
o-Terphenyl		37.9	50.0	76	70-135

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 405302,

Project ID: 2008-113

Lab Batch #: 842208

Sample: 405302-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 14:58		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	99.9	102	70-135	
o-Terphenyl	38.6	50.0	77	70-135	

Lab Batch #: 842208

Sample: 405302-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 15:16		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	37.5	50.0	75	70-135	

Lab Batch #: 842208

Sample: 405302-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 15:35		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	74.2	99.6	74	70-135	
o-Terphenyl	48.9	49.8	98	70-135	

Lab Batch #: 842208

Sample: 405302-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 15:53		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.8	99.8	76	70-135	
o-Terphenyl	39.2	49.9	79	70-135	

Lab Batch #: 842208

Sample: 405302-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 16:11		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.1	99.9	75	70-135	
o-Terphenyl	41.6	50.0	83	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 405302

Analyst: ASA

Date Prepared: 02/01/2011

Project ID: 2008-113

Date Analyzed: 02/01/2011

Lab Batch ID: 842121

Sample: 594720-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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											
Benzene	<0.0010	0.1000	0.1015	102	0.1000	0.1042	104	3	70-130	35	
Toluene	<0.0020	0.1000	0.0976	98	0.1000	0.0998	100	2	70-130	35	
Ethylbenzene	<0.0010	0.1000	0.0974	97	0.1000	0.0990	99	2	71-129	35	
m_p-Xylenes	<0.0020	0.2000	0.1999	100	0.2000	0.2038	102	2	70-135	35	
o-Xylene	<0.0010	0.1000	0.0975	98	0.1000	0.0999	100	2	71-133	35	

Analyst: ASA

Date Prepared: 02/03/2011

Date Analyzed: 02/03/2011

Lab Batch ID: 842370

Sample: 594857-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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											
Benzene	<0.0010	0.0998	0.0861	86	0.1000	0.0959	96	11	70-130	35	
Toluene	<0.0020	0.0998	0.0840	84	0.1000	0.0925	93	10	70-130	35	
Ethylbenzene	<0.0010	0.0998	0.0822	82	0.1000	0.0886	89	7	71-129	35	
m_p-Xylenes	<0.0020	0.1996	0.1607	81	0.2000	0.1740	87	8	70-135	35	
o-Xylene	<0.0010	0.0998	0.0850	85	0.1000	0.0914	91	7	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: EK Queen Pearce

Work Order #: 405302

Analyst: LATCOR

Date Prepared: 02/02/2011

Project ID: 2008-113

Date Analyzed: 02/02/2011

Lab Batch ID: 842217

Sample: 842217-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions In Soil by E300	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											
Chloride	<0.420	10.0	11.2	112	10.0	11.3	113	1	75-125	20	

Analyst: BEV

Date Prepared: 02/02/2011

Date Analyzed: 02/02/2011

Lab Batch ID: 842208

Sample: 594767-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	<50.1	1010	890	88	1000	932	93	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<50.1	1010	794	79	1000	882	88	11	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: EK Queen Pearce

Work Order #: 405302

Lab Batch #: 842217

Date Analyzed: 02/02/2011

QC- Sample ID: 405302-001 S

Reporting Units: mg/kg

Date Prepared: 02/02/2011

Batch #: 1

Project ID: 2008-113

Analyst: LATCOR

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	23.1	109	125	93	75-125	

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

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 405302

Project ID: 2008-113

Lab Batch ID: 842121

QC- Sample ID: 405302-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/02/2011

Date Prepared: 02/01/2011

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.0010	0.1025	0.0902	88	0.1022	0.0863	84	4	70-130	35	
Toluene	0.0042	0.1025	0.0850	79	0.1022	0.0791	73	7	70-130	35	
Ethylbenzene	0.0263	0.1025	0.1011	73	0.1022	0.0895	62	12	71-129	35	X
m_p-Xylenes	0.0398	0.2049	0.1808	69	0.2045	0.1550	56	15	70-135	35	X
o-Xylene	0.0235	0.1025	0.0856	61	0.1022	0.0747	50	14	71-133	35	X

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Project Name: EK Queen Pearce

Work Order #: 405302

Lab Batch #: 842370

Project ID: 2008-113

Date Analyzed: 02/03/2011 16:02

Date Prepared: 02/03/2011

Analyst: ASA

QC- Sample ID: 405600-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	0.0730	0.0907	22	35	
Toluene	1.477	1.619	9	35	
Ethylbenzene	2.667	4.106	42	35	F
m_p-Xylenes	8.190	12.60	42	35	F
o-Xylene	4.532	7.107	44	35	F

Lab Batch #: 842217

Date Analyzed: 02/02/2011 09:30

Date Prepared: 02/02/2011

Analyst: LATCOR

QC- Sample ID: 405302-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY

Inorganic Anions In Soil by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	23.1	17.0	30	20	F

Lab Batch #: 842042

Date Analyzed: 02/01/2011 17:00

Date Prepared: 02/01/2011

Analyst: WRU

QC- Sample ID: 405302-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	7.89	7.60	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



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: Basin Env. / Plains
Date/Time: 1-31-11 16:40
Lab ID #: 405302
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 1.6 °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 405303

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

04-FEB-11



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

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

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

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

Xenco Phoenix (EPA Lab Code: AZ00901):

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

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

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



04-FEB-11

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

Reference: XENCO Report No: **405303**
EK Queen Pearce
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 405303. 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. 405303 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 405303

PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-7 @ 22'	S	Jan-28-11 10:30		405303-001
SB-7 @ 27'	S	Jan-28-11 10:35		405303-002
SB-7 @ 32'	S	Jan-28-11 10:40		405303-003
SB-7 @ 37'	S	Jan-28-11 10:45		405303-004
SB-7 @ 42'	S	Jan-28-11 10:50		405303-005
SB-7 @ 47'	S	Jan-28-11 10:55		405303-006
SB-7 @ 52'	S	Jan-28-11 11:00		405303-007



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 405303

Report Date: 04-FEB-11

Date Received: 01/31/2011

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-842121 BTEX by EPA 8021

SW8021BM

Batch 842121, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 405303-007.

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

Samples affected are: 405303-002,405303-003,405303-007,405303-006.

4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 405303-004,405303-005.

SW8021BM

Batch 842121, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Ethylbenzene recovered below QC limits in the Matrix Spike Duplicate.

Samples affected are: 405303-004, -003, -006, -007, -001, -005, -002.

The Laboratory Control Sample for m_p-Xylenes , o-Xylene, Ethylbenzene is within laboratory Control Limits

Batch: LBA-842208 TPH by SW8015 Mod

Batch: LBA-842217 Inorganic Anions In Soil by E300



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 405303

Report Date: 04-FEB-11

Date Received: 01/31/2011

*Batch: LBA-842370 BTEX by EPA 8021
SW8021BM*

Batch 842370, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 405600-001 D.

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

Samples affected are: 405303-002,405303-003,405303-006,405303-007,405600-001 D.

Batch 840062, RPD is outside QC limits for compounds m_p-xylene, ethylbenzene and o-xylene between sample and sample duplicate, samples affected are: 405303-002, 405303-003, 405303-006, 405303-007 .

Certificate of Analysis Summary 405303

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Mon Jan-31-11 04:40 pm

Report Date: 04-FEB-11

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	405303-001	405303-002	405303-003	405303-004	405303-005	405303-006
	<i>Field Id:</i>	SB-7 @ 22'	SB-7 @ 27'	SB-7 @ 32'	SB-7 @ 37'	SB-7 @ 42'	SB-7 @ 47'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-28-11 10:30	Jan-28-11 10:35	Jan-28-11 10:40	Jan-28-11 10:45	Jan-28-11 10:50	Jan-28-11 10:55
BTEX by EPA 8021	<i>Extracted:</i>	Feb-01-11 16:15	Feb-01-11 16:15	Feb-01-11 16:15	Feb-01-11 16:15	Feb-01-11 16:15	Feb-01-11 16:15
	<i>Analyzed:</i>	Feb-01-11 19:57	Feb-01-11 22:35	Feb-01-11 23:20	Feb-02-11 00:05	Feb-02-11 01:34	Feb-02-11 02:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.0096 0.0011	0.0011 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	0.0018 0.0010
Toluene		0.2052 0.0021	0.0560 0.0021	0.2217 0.0021	0.0499 0.0021	0.0811 0.0020	1.105 D 0.0413
Ethylbenzene		0.3484 0.0011	0.3173 0.0010	0.9494 D 0.0052	0.0864 0.0010	0.2919 0.0010	8.011 D 0.0207
m_p-Xylenes		0.4304 0.0021	2.914 D 0.0208	0.5347 0.0021	0.1364 0.0021	0.5180 0.0020	12.16 D 0.0413
o-Xylene		0.1863 0.0011	2.815 D 0.0104	0.2561 0.0010	0.0871 0.0010	0.4076 0.0010	7.596 D 0.0207
Xylenes, Total		0.6167 0.0011	1.736 0.0010	0.7908 0.0010	0.2235 0.0010	0.9256 0.0010	4.253 0.0010
Total BTEX		1.180 0.0011	2.110 0.0010	1.438 0.0010	0.3598 0.0010	1.299 0.0010	6.510 0.0010
Inorganic Anions In Soil by E300	<i>Extracted:</i>	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30
	<i>Analyzed:</i>	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30	Feb-02-11 09:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		11.2 5.35	9.54 5.21	9.25 5.17	10.9 5.16	8.93 5.14	9.52 5.17
Percent Moisture	<i>Extracted:</i>	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00
	<i>Analyzed:</i>	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00	Feb-01-11 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		6.51 1.00	4.00 1.00	3.38 1.00	3.16 1.00	2.69 1.00	3.24 1.00
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-02-11 10:15	Feb-02-11 10:15	Feb-02-11 10:15	Feb-02-11 10:15	Feb-02-11 10:15	Feb-02-11 10:15
	<i>Analyzed:</i>	Feb-02-11 16:30	Feb-02-11 17:07	Feb-02-11 17:25	Feb-02-11 17:43	Feb-02-11 18:01	Feb-02-11 18:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		584 16.0	3270 78.0	1650 77.5	2290 77.2	2460 77.1	3510 77.3
C12-C28 Diesel Range Hydrocarbons		4020 16.0	8960 78.0	7450 77.5	8780 77.2	8590 77.1	9660 77.3
C28-C35 Oil Range Hydrocarbons		94.3 16.0	215 78.0	139 77.5	152 77.2	192 77.1	220 77.3
Total TPH		4700 16.0	12400 78.0	9240 77.5	11200 77.2	11200 77.1	13400 77.3

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.

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Brent Barron, II
Odessa Laboratory Manager

Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Jan-31-11 04:40 pm

Report Date: 04-FEB-11

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 405303-007 Field Id: SB-7 @ 52' Depth: Matrix: SOIL Sampled: Jan-28-11 11:00					
BTEX by EPA 8021	Extracted: Feb-01-11 16:15 Analyzed: Feb-02-11 03:03 Units/RL: mg/kg RL					
Benzene	ND 0.0010					
Toluene	0.0265 0.0021					
Ethylbenzene	0.0163 0.0010					
m_p-Xylenes	0.2199 0.0021					
o-Xylene	0.0337 0.0010					
Xylenes, Total	0.2536 0.0010					
Total BTEX	0.2964 0.0010					
Inorganic Anions In Soil by E300	Extracted: Analyzed: Feb-02-11 09:30 Units/RL: mg/kg RL					
Chloride	11.3 5.17					
Percent Moisture	Extracted: Analyzed: Feb-01-11 17:00 Units/RL: % RL					
Percent Moisture	3.23 1.00					
TPH by SW8015 Mod	Extracted: Feb-02-11 10:15 Analyzed: Feb-02-11 18:38 Units/RL: mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	2960 77.4					
C12-C28 Diesel Range Hydrocarbons	7950 77.4					
C28-C35 Oil Range Hydrocarbons	145 77.4					
Total TPH	11100 77.4					

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 405303,

Project ID: 2008-113

Lab Batch #: 842121

Sample: 594720-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/01/11 16:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 842121

Sample: 594720-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/01/11 17:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 842121

Sample: 594720-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/01/11 18:26

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	0.0276	0.0300	92	80-120	

Lab Batch #: 842121

Sample: 405303-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/01/11 19:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 842121

Sample: 405303-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/01/11 22:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.2709	0.0300	903	80-120	**

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 405303,

Project ID: 2008-113

Lab Batch #: 842121

Sample: 405303-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/01/11 23:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0247	0.0300	82	80-120	
4-Bromofluorobenzene	0.0628	0.0300	209	80-120	**

Lab Batch #: 842121

Sample: 405303-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/11 00:05

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	0.1346	0.0300	449	80-120	*

Lab Batch #: 842121

Sample: 405303-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/11 01:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.2212	0.0300	737	80-120	*

Lab Batch #: 842121

Sample: 405303-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/11 02:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.1742	0.0300	581	80-120	**

Lab Batch #: 842121

Sample: 405303-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/11 03:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0005	0.0300	2	80-120	**
4-Bromofluorobenzene	0.1220	0.0300	407	80-120	**

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 405303,

Project ID: 2008-113

Lab Batch #: 842121

Sample: 405302-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/11 06:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 842121

Sample: 405302-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/11 07:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 842370

Sample: 594857-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/03/11 10:17

SURROGATE RECOVERY STUDY

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

Lab Batch #: 842370

Sample: 594857-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/03/11 11:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 842370

Sample: 594857-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/03/11 12:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 405303,

Project ID: 2008-113

Lab Batch #: 842370

Sample: 405303-002 / DL

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/11 12:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.1199	0.0300	400	80-120	**

Lab Batch #: 842370

Sample: 405303-003 / DL

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/11 13:14

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	0.0392	0.0300	131	80-120	**

Lab Batch #: 842370

Sample: 405303-006 / DL

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/11 13:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0693	0.0300	231	80-120	**

Lab Batch #: 842370

Sample: 405303-007 / DL

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/11 13:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0621	0.0300	207	80-120	**

Lab Batch #: 842370

Sample: 405600-001 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/11 16:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.6522	0.0300	2174	80-120	**

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 405303,

Project ID: 2008-113

Lab Batch #: 842208

Sample: 594767-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/02/11 12:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.6	101	85	70-135	
o-Terphenyl	39.6	50.3	79	70-135	

Lab Batch #: 842208

Sample: 594767-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/02/11 13:09

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.7	100	87	70-135	
o-Terphenyl	38.3	50.0	77	70-135	

Lab Batch #: 842208

Sample: 594767-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/02/11 13:27

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.6	100	73	70-135	
o-Terphenyl	36.3	50.1	72	70-135	

Lab Batch #: 842208

Sample: 405303-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/11 16:30

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.8	100	90	70-135	
o-Terphenyl	45.1	50.0	90	70-135	

Lab Batch #: 842208

Sample: 405303-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/11 17:07

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	54.6	50.0	109	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 405303,

Project ID: 2008-113

Lab Batch #: 842208

Sample: 405303-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 17:25		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		98.4	99.8	99	70-135
o-Terphenyl		52.3	49.9	105	70-135

Lab Batch #: 842208

Sample: 405303-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 17:43		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		113	99.7	113	70-135
o-Terphenyl		59.6	49.9	119	70-135

Lab Batch #: 842208

Sample: 405303-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 18:01		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		118	100	118	70-135
o-Terphenyl		58.6	50.0	117	70-135

Lab Batch #: 842208

Sample: 405303-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 18:20		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		117	99.7	117	70-135
o-Terphenyl		59.1	49.9	118	70-135

Lab Batch #: 842208

Sample: 405303-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/02/11 18:38		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		101	99.9	101	70-135
o-Terphenyl		51.9	50.0	104	70-135

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 405303

Analyst: ASA

Date Prepared: 02/01/2011

Project ID: 2008-113

Date Analyzed: 02/01/2011

Lab Batch ID: 842121

Sample: 594720-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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											
Benzene	<0.0010	0.1000	0.1015	102	0.1000	0.1042	104	3	70-130	35	
Toluene	<0.0020	0.1000	0.0976	98	0.1000	0.0998	100	2	70-130	35	
Ethylbenzene	<0.0010	0.1000	0.0974	97	0.1000	0.0990	99	2	71-129	35	
m_p-Xylenes	<0.0020	0.2000	0.1999	100	0.2000	0.2038	102	2	70-135	35	
o-Xylene	<0.0010	0.1000	0.0975	98	0.1000	0.0999	100	2	71-133	35	

Analyst: ASA

Date Prepared: 02/03/2011

Date Analyzed: 02/03/2011

Lab Batch ID: 842370

Sample: 594857-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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											
Benzene	<0.0010	0.0998	0.0861	86	0.1000	0.0959	96	11	70-130	35	
Toluene	<0.0020	0.0998	0.0840	84	0.1000	0.0925	93	10	70-130	35	
Ethylbenzene	<0.0010	0.0998	0.0822	82	0.1000	0.0886	89	7	71-129	35	
m_p-Xylenes	<0.0020	0.1996	0.1607	81	0.2000	0.1740	87	8	70-135	35	
o-Xylene	<0.0010	0.0998	0.0850	85	0.1000	0.0914	91	7	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: EK Queen Pearce

Work Order #: 405303

Analyst: LATCOR

Date Prepared: 02/02/2011

Project ID: 2008-113

Date Analyzed: 02/02/2011

Lab Batch ID: 842217

Sample: 842217-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions In Soil by E300	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											
Chloride	<0.420	10.0	11.2	112	10.0	11.3	113	1	75-125	20	

Analyst: BEV

Date Prepared: 02/02/2011

Date Analyzed: 02/02/2011

Lab Batch ID: 842208

Sample: 594767-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	<50.1	1010	890	88	1000	932	93	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<50.1	1010	794	79	1000	882	88	11	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: EK Queen Pearce

Work Order #: 405303

Lab Batch #: 842217

Date Analyzed: 02/02/2011

QC- Sample ID: 405302-001 S

Reporting Units: mg/kg

Date Prepared: 02/02/2011

Batch #: 1

Project ID: 2008-113

Analyst: LATCOR

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	23.1	109	125	93	75-125	

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

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 405303

Project ID: 2008-113

Lab Batch ID: 842121

QC- Sample ID: 405302-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/02/2011

Date Prepared: 02/01/2011

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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	<0.0010	0.1025	0.0902	88	0.1022	0.0863	84	4	70-130	35	
Toluene	0.0042	0.1025	0.0850	79	0.1022	0.0791	73	7	70-130	35	
Ethylbenzene	0.0263	0.1025	0.1011	73	0.1022	0.0895	62	12	71-129	35	X
m_p-Xylenes	0.0398	0.2049	0.1808	69	0.2045	0.1550	56	15	70-135	35	X
o-Xylene	0.0235	0.1025	0.0856	61	0.1022	0.0747	50	14	71-133	35	X

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Project Name: EK Queen Pearce

Work Order #: 405303

Lab Batch #: 842370

Project ID: 2008-113

Date Analyzed: 02/03/2011 16:02

Date Prepared: 02/03/2011

Analyst: ASA

QC- Sample ID: 405600-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	0.0730	0.0907	22	35	
Toluene	1.477	1.619	9	35	
Ethylbenzene	2.667	4.106	42	35	F
m_p-Xylenes	8.190	12.60	42	35	F
o-Xylene	4.532	7.107	44	35	F

Lab Batch #: 842217

Date Analyzed: 02/02/2011 09:30

Date Prepared: 02/02/2011

Analyst: LATCOR

QC- Sample ID: 405302-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY

Inorganic Anions In Soil by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	23.1	17.0	30	20	F

Lab Batch #: 842042

Date Analyzed: 02/01/2011 17:00

Date Prepared: 02/01/2011

Analyst: WRU

QC- Sample ID: 405302-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	7.89	7.60	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



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: Basin Env. / Plains
Date/Time: 1-31-11 16:40
Lab ID #: 405303
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 1.6 °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 435671

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

01-FEB-12

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

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

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



01-FEB-12

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

Reference: XENCO Report No: **435671**
EK Queen Pearce
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 435671. 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. 435671 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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Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America

Sample Cross Reference 435671



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-8 @ 20'	S	01-20-12 13:55		435671-001
SB-8 @ 25'	S	01-20-12 14:00		435671-002
SB-8 @ 30'	S	01-20-12 14:05		435671-003
SB-8 @ 35'	S	01-20-12 14:10		435671-004
SB-8 @ 40'	S	01-20-12 14:45		435671-005
SB-8 @ 45'	S	01-20-12 14:50		435671-006
SB-8 @ 50'	S	01-20-12 15:00		435671-007
SB-8 @ 55"	S	01-20-12 15:05		435671-008
SB-8 @ 60'	S	01-20-12 15:25		435671-009
SB-8 @ 65'	S	01-20-12 15:30		435671-010



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 435671

Report Date: 01-FEB-12

Date Received: 01/25/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-879921 BTEX by EPA 8021B

SW8021BM

Batch 879921, o-Xylene recovered below QC limits in the Matrix Spike.

Samples affected are: 435671-001.

The Laboratory Control Sample for o-Xylene is within laboratory Control Limits

Batch: LBA-880037 BTEX by EPA 8021B

SW8021BM

Batch 880037, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 435671-007.

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

Samples affected are: 435671-007,435671-010,435671-009,435671-008.

SW8021BM

Batch 880037, Benzene, Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 435671-008, -007, -009, -010.

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



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113
Work Order Number: 435671

Report Date: 01-FEB-12
Date Received: 01/25/2012

Batch: LBA-880041 BTEX by EPA 8021B
SW8021BM

Batch 880041, Benzene, Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 435671-004.

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

SW8021BM

Batch 880041, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 435671-004.

Batch: LBA-880133 TPH By SW8015 Mod
SW8015MOD_NM

Batch 880133, 1-Chlorooctane recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 435671-002,435671-004,435671-007,435671-008,435671-009,435671-010.

o-Terphenyl recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 435671-010.



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 435671

Report Date: 01-FEB-12

Date Received: 01/25/2012

Batch: LBA-880171 BTEX by EPA 8021B
SW8021BM

Batch 880171, Benzene recovered below QC limits in the Matrix Spike. Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 435671-003, -005, -006, -002.

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

SW8021BM

Batch 880171, 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 435671-002, 435671-003, 435671-005, 435671-006.

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

Samples affected are: 435671-002.

Certificate of Analysis Summary 435671

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Wed Jan-25-12 03:15 pm

Report Date: 01-FEB-12

Project Location: Lea County, NM

Project Manager: Brent Barron II

<i>Analysis Requested</i>	<i>Lab Id:</i>	435671-001	435671-002	435671-003	435671-004	435671-005	435671-006
	<i>Field Id:</i>	SB-8 @ 20'	SB-8 @ 25'	SB-8 @ 30'	SB-8 @ 35'	SB-8 @ 40'	SB-8 @ 45'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-20-12 13:55	Jan-20-12 14:00	Jan-20-12 14:05	Jan-20-12 14:10	Jan-20-12 14:45	Jan-20-12 14:50
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-26-12 16:25	Jan-31-12 08:50	Jan-31-12 08:50	Jan-27-12 15:15	Jan-31-12 08:50	Jan-31-12 08:50
	<i>Analyzed:</i>	Jan-26-12 21:28	Jan-31-12 20:15	Jan-31-12 21:01	Jan-28-12 08:55	Jan-31-12 21:24	Jan-31-12 21:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		ND 0.00100	0.00671 0.00524	0.00643 0.00523	ND 0.00103	0.00577 0.00520	0.00693 0.00525
Toluene		ND 0.00200	0.0325 0.0105	0.192 0.0105	0.00909 0.00206	0.0137 0.0104	0.0801 0.0105
Ethylbenzene		0.00970 0.00100	0.534 0.00524	0.778 0.00523	0.0328 0.00103	0.0426 0.00520	0.362 0.00525
m_p-Xylenes		0.0260 0.00200	2.64 0.0105	1.16 0.0105	0.0750 0.00206	0.113 0.0104	0.578 0.0105
o-Xylene		0.0128 0.00100	5.00 D 0.0210	0.561 0.00523	0.0533 0.00103	0.0731 0.00520	0.272 0.00525
Total Xylenes		0.0388 0.00100	7.64 0.0105	1.72 0.00523	0.128 0.00103	0.186 0.00520	0.850 0.00525
Total BTEX		0.0485 0.00100	8.21 0.00524	2.70 0.00523	0.170 0.00103	0.248 0.00520	1.30 0.00525
Percent Moisture	<i>Extracted:</i>	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30
	<i>Analyzed:</i>	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		5.87 1.00	4.22 1.00	4.16 1.00	3.13 1.00	3.30 1.00	5.28 1.00
TPH By SW8015 Mod	<i>Extracted:</i>	Jan-26-12 13:35	Jan-26-12 13:35	Jan-26-12 13:35	Jan-26-12 13:35	Jan-26-12 13:35	Jan-26-12 13:35
	<i>Analyzed:</i>	Jan-28-12 14:42	Jan-30-12 16:43	Jan-30-12 17:10	Jan-30-12 17:37	Jan-30-12 18:04	Jan-30-12 18:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		20.7 15.9	2030 78.6	1250 156	1750 77.3	486 77.9	911 79.1
C12-C28 Diesel Range Hydrocarbons		460 15.9	7720 78.6	10300 156	9360 77.3	6910 77.9	7330 79.1
C28-C35 Oil Range Hydrocarbons		53.6 15.9	561 78.6	947 156	608 77.3	467 77.9	495 79.1
Total TPH		534 15.9	10300 78.6	12500 156	11700 77.3	7860 77.9	8740 79.1

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

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Brent Barron II
Odessa Laboratory Manager

Certificate of Analysis Summary 435671

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Wed Jan-25-12 03:15 pm

Report Date: 01-FEB-12

Project Location: Lea County, NM

Project Manager: Brent Barron II

<i>Analysis Requested</i>	<i>Lab Id:</i>	435671-007	435671-008	435671-009	435671-010		
	<i>Field Id:</i>	SB-8 @ 50'	SB-8 @ 55"	SB-8 @ 60'	SB-8 @ 65'		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Jan-20-12 15:00	Jan-20-12 15:05	Jan-20-12 15:25	Jan-20-12 15:30		
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-27-12 16:00	Jan-27-12 16:00	Jan-27-12 16:00	Jan-27-12 16:00		
	<i>Analyzed:</i>	Jan-28-12 18:27	Jan-28-12 19:13	Jan-28-12 19:35	Jan-28-12 20:44		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		ND 0.0207	ND 0.0209	ND 0.268	ND 0.0210		
Toluene		0.254 0.0414	0.273 0.0418	4.65 0.535	0.798 0.0421		
Ethylbenzene		5.46 0.0207	7.27 0.0209	22.3 0.268	7.91 0.0210		
m_p-Xylenes		10.4 0.0414	11.9 0.0418	30.8 0.535	11.8 0.0421		
o-Xylene		7.08 0.0207	7.60 0.0209	15.1 0.268	2.60 0.0210		
Total Xylenes		17.5 0.0207	19.5 0.0209	45.9 0.268	14.4 0.0210		
Total BTEX		23.2 0.0207	27.0 0.0209	72.9 0.268	23.1 0.0210		
Percent Moisture	<i>Extracted:</i>	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30		
	<i>Analyzed:</i>						
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL		
Percent Moisture		3.10 1.00	4.26 1.00	6.73 1.00	4.96 1.00		
TPH By SW8015 Mod	<i>Extracted:</i>	Jan-26-12 13:35	Jan-26-12 13:35	Jan-26-12 13:35	Jan-26-12 13:35		
	<i>Analyzed:</i>	Jan-30-12 18:58	Jan-30-12 19:25	Jan-30-12 19:51	Jan-30-12 20:18		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		1620 77.6	2260 156	2270 80.4	1960 78.9		
C12-C28 Diesel Range Hydrocarbons		5750 77.6	10100 156	6990 80.4	9610 78.9		
C28-C35 Oil Range Hydrocarbons		474 77.6	851 156	427 80.4	709 78.9		
Total TPH		7840 77.6	13200 156	9690 80.4	12300 78.9		

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.

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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 affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

^ NELAC or State program does not offer Accreditation at this time.

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Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435671,

Project ID: 2008-113

Lab Batch #: 879921

Sample: 435671-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/26/12 21:28		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0292	0.0300	97	80-120
4-Bromofluorobenzene		0.0295	0.0300	98	80-120

Lab Batch #: 880041

Sample: 435671-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 08:55		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0297	0.0300	99	80-120
4-Bromofluorobenzene		0.186	0.0300	620	80-120 *

Lab Batch #: 880133

Sample: 435671-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 14:42		SURROGATE RECOVERY STUDY			
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		89.4	100	89	70-135
o-Terphenyl		47.7	50.0	95	70-135

Lab Batch #: 880037

Sample: 435671-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 18:27		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0231	0.0300	77	80-120 **
4-Bromofluorobenzene		0.150	0.0300	500	80-120 **

Lab Batch #: 880037

Sample: 435671-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 19:13		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0250	0.0300	83	80-120
4-Bromofluorobenzene		0.350	0.0300	1167	80-120 **

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435671,

Project ID: 2008-113

Lab Batch #: 880037

Sample: 435671-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/28/12 19:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0364	0.0300	121	80-120	**

Lab Batch #: 880037

Sample: 435671-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/28/12 20:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	80-120	
4-Bromofluorobenzene	0.0695	0.0300	232	80-120	**

Lab Batch #: 880133

Sample: 435671-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/30/12 16:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	166	100	166	70-135	**
o-Terphenyl	58.8	50.2	117	70-135	

Lab Batch #: 880133

Sample: 435671-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/30/12 17:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.5	129	70-135	
o-Terphenyl	49.1	49.8	99	70-135	

Lab Batch #: 880133

Sample: 435671-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/30/12 17:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	176	99.9	176	70-135	**
o-Terphenyl	58.7	50.0	117	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435671,

Project ID: 2008-113

Lab Batch #: 880133

Sample: 435671-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/30/12 18:04		SURROGATE RECOVERY STUDY			
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		107	100	107	70-135
o-Terphenyl		53.7	50.2	107	70-135

Lab Batch #: 880133

Sample: 435671-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/30/12 18:31		SURROGATE RECOVERY STUDY			
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		127	99.9	127	70-135
o-Terphenyl		54.7	50.0	109	70-135

Lab Batch #: 880133

Sample: 435671-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/30/12 18:58		SURROGATE RECOVERY STUDY			
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		165	100	165	70-135
o-Terphenyl		59.0	50.1	118	70-135

Lab Batch #: 880133

Sample: 435671-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/30/12 19:25		SURROGATE RECOVERY STUDY			
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		171	99.5	172	70-135
o-Terphenyl		65.8	49.8	132	70-135

Lab Batch #: 880133

Sample: 435671-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/30/12 19:51		SURROGATE RECOVERY STUDY			
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		150	100	150	70-135
o-Terphenyl		57.7	50.0	115	70-135

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435671,

Project ID: 2008-113

Lab Batch #: 880133

Sample: 435671-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/30/12 20:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	181	100	181	70-135	**
o-Terphenyl	68.0	50.0	136	70-135	**

Lab Batch #: 880171

Sample: 435671-002 / DL

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/31/12 19:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0236	0.0300	79	80-120	**
4-Bromofluorobenzene	0.0879	0.0300	293	80-120	**

Lab Batch #: 880171

Sample: 435671-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/31/12 20:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0209	0.0300	70	80-120	**
4-Bromofluorobenzene	0.141	0.0300	470	80-120	**

Lab Batch #: 880171

Sample: 435671-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/31/12 21:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0215	0.0300	72	80-120	**
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 880171

Sample: 435671-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/31/12 21:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0207	0.0300	69	80-120	**
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435671,

Project ID: 2008-113

Lab Batch #: 880171

Sample: 435671-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/31/12 21:46		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0212	0.0300	71	80-120
4-Bromofluorobenzene		0.0310	0.0300	103	80-120

Lab Batch #: 879921

Sample: 617047-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/26/12 19:57		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0288	0.0300	96	80-120
4-Bromofluorobenzene		0.0275	0.0300	92	80-120

Lab Batch #: 880041

Sample: 617121-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/27/12 23:33		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0268	0.0300	89	80-120
4-Bromofluorobenzene		0.0295	0.0300	98	80-120

Lab Batch #: 880133

Sample: 617186-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/28/12 09:02		SURROGATE RECOVERY STUDY			
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		98.7	100	99	70-135
o-Terphenyl		51.5	50.0	103	70-135

Lab Batch #: 880037

Sample: 617120-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/28/12 11:54		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0268	0.0300	89	80-120
4-Bromofluorobenzene		0.0283	0.0300	94	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435671,

Project ID: 2008-113

Lab Batch #: 880171

Sample: 617208-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/31/12 13:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

Lab Batch #: 879921

Sample: 617047-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/26/12 18:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0335	0.0300	112	80-120	

Lab Batch #: 880041

Sample: 617121-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/27/12 22:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 880133

Sample: 617186-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/28/12 08:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.8	100	94	70-135	
o-Terphenyl	39.1	50.0	78	70-135	

Lab Batch #: 880037

Sample: 617120-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/28/12 10:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435671,

Project ID: 2008-113

Lab Batch #: 880171

Sample: 617208-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/31/12 11:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0347	0.0300	116	80-120	

Lab Batch #: 879921

Sample: 617047-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/26/12 18:49

SURROGATE RECOVERY STUDY

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

Lab Batch #: 880041

Sample: 617121-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/27/12 22:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 880133

Sample: 617186-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/28/12 08:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	46.8	50.0	94	70-135	

Lab Batch #: 880037

Sample: 617120-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/28/12 10:47

SURROGATE RECOVERY STUDY

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

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435671,

Project ID: 2008-113

Lab Batch #: 880171

Sample: 617208-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/31/12 12:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 879921

Sample: 435786-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/26/12 22:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 880041

Sample: 435769-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/28/12 03:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 880037

Sample: 435769-007 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/28/12 16:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 880133

Sample: 435520-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/28/12 19:05

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.6	103	70-135	
o-Terphenyl	46.2	49.8	93	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435671,

Project ID: 2008-113

Lab Batch #: 880171

Sample: 435769-010 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/31/12 17:36		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0296	0.0300	99	80-120
4-Bromofluorobenzene		0.0341	0.0300	114	80-120

Lab Batch #: 879921

Sample: 435786-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/26/12 23:22		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0310	0.0300	103	80-120
4-Bromofluorobenzene		0.0311	0.0300	104	80-120

Lab Batch #: 880041

Sample: 435769-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 04:05		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0288	0.0300	96	80-120
4-Bromofluorobenzene		0.0309	0.0300	103	80-120

Lab Batch #: 880037

Sample: 435769-007 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 16:33		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0295	0.0300	98	80-120
4-Bromofluorobenzene		0.0349	0.0300	116	80-120

Lab Batch #: 880133

Sample: 435520-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 19:30		SURROGATE RECOVERY STUDY			
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		97.9	99.5	98	70-135
o-Terphenyl		41.6	49.8	84	70-135

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435671,

Project ID: 2008-113

Lab Batch #: 880171

Sample: 435769-010 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/31/12 17:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 435671

Analyst: ASA

Date Prepared: 01/26/2012

Project ID: 2008-113

Date Analyzed: 01/26/2012

Lab Batch ID: 879921

Sample: 617047-1-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 [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											
Benzene	<0.00100	0.100	0.105	105	0.100	0.0985	99	6	70-130	35	
Toluene	<0.00200	0.100	0.104	104	0.100	0.0977	98	6	70-130	35	
Ethylbenzene	<0.00100	0.100	0.102	102	0.100	0.0954	95	7	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.213	107	0.200	0.200	100	6	70-135	35	
o-Xylene	<0.00100	0.100	0.102	102	0.100	0.0960	96	6	71-133	35	

Analyst: ASA

Date Prepared: 01/27/2012

Date Analyzed: 01/28/2012

Lab Batch ID: 880037

Sample: 617120-1-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 [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											
Benzene	<0.00100	0.100	0.0923	92	0.100	0.0915	92	1	70-130	35	
Toluene	<0.00200	0.100	0.0924	92	0.100	0.0910	91	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0919	92	0.100	0.0899	90	2	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.183	92	0.200	0.179	90	2	70-135	35	
o-Xylene	<0.00100	0.100	0.0913	91	0.100	0.0891	89	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: EK Queen Pearce

Work Order #: 435671

Analyst: ASA

Date Prepared: 01/27/2012

Project ID: 2008-113

Date Analyzed: 01/27/2012

Lab Batch ID: 880041

Sample: 617121-1-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 [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											
Benzene	<0.00100	0.100	0.0924	92	0.100	0.0996	100	8	70-130	35	
Toluene	<0.00200	0.100	0.0927	93	0.100	0.101	101	9	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0923	92	0.100	0.100	100	8	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.187	94	0.200	0.204	102	9	70-135	35	
o-Xylene	<0.00100	0.100	0.0926	93	0.100	0.101	101	9	71-133	35	

Analyst: ASA

Date Prepared: 01/31/2012

Date Analyzed: 01/31/2012

Lab Batch ID: 880171

Sample: 617208-1-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 [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											
Benzene	<0.00100	0.100	0.0922	92	0.100	0.0941	94	2	70-130	35	
Toluene	<0.00200	0.100	0.0919	92	0.100	0.0932	93	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0913	91	0.100	0.0919	92	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.191	96	0.200	0.192	96	1	70-135	35	
o-Xylene	<0.00100	0.100	0.0941	94	0.100	0.0947	95	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

Project Name: EK Queen Pearce

Work Order #: 435671

Analyst: ASA

Date Prepared: 01/26/2012

Project ID: 2008-113

Date Analyzed: 01/28/2012

Lab Batch ID: 880133

Sample: 617186-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	820	82	1000	843	84	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	783	78	1000	916	92	16	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: EK Queen Pearce

Work Order # : 435671

Project ID: 2008-113

Lab Batch ID: 879921

QC- Sample ID: 435786-001 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 01/26/2012

Date Prepared: 01/26/2012

Analyst: ASA

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000994	0.0994	0.0774	78	0.100	0.0809	81	4	70-130	35	
Toluene	<0.00199	0.0994	0.0757	76	0.100	0.0795	80	5	70-130	35	
Ethylbenzene	<0.000994	0.0994	0.0709	71	0.100	0.0748	75	5	71-129	35	
m_p-Xylenes	<0.00199	0.199	0.146	73	0.200	0.154	77	5	70-135	35	
o-Xylene	<0.000994	0.0994	0.0690	69	0.100	0.0729	73	5	71-133	35	X

Lab Batch ID: 880037

QC- Sample ID: 435769-007 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 01/28/2012

Date Prepared: 01/27/2012

Analyst: ASA

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00111	0.111	0.0694	63	0.112	0.0764	68	10	70-130	35	X
Toluene	<0.00223	0.111	0.0672	61	0.112	0.0728	65	8	70-130	35	X
Ethylbenzene	<0.00111	0.111	0.0647	58	0.112	0.0692	62	7	71-129	35	X
m_p-Xylenes	<0.00223	0.223	0.131	59	0.224	0.141	63	7	70-135	35	X
o-Xylene	<0.00111	0.111	0.0655	59	0.112	0.0703	63	7	71-133	35	X

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 435671

Project ID: 2008-113

Lab Batch ID: 880041

QC- Sample ID: 435769-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/28/2012

Date Prepared: 01/27/2012

Analyst: ASA

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00112	0.112	0.0743	66	0.112	0.0733	65	1	70-130	35	X
Toluene	<0.00225	0.112	0.0732	65	0.112	0.0718	64	2	70-130	35	X
Ethylbenzene	<0.00112	0.112	0.0711	63	0.112	0.0695	62	2	71-129	35	X
m_p-Xylenes	<0.00225	0.225	0.142	63	0.224	0.138	62	3	70-135	35	X
o-Xylene	<0.00112	0.112	0.0692	62	0.112	0.0673	60	3	71-133	35	X

Lab Batch ID: 880171

QC- Sample ID: 435769-010 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/31/2012

Date Prepared: 01/31/2012

Analyst: ASA

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00111	0.111	0.0712	64	0.111	0.0773	70	8	70-130	35	X
Toluene	<0.00222	0.111	0.0700	63	0.111	0.0746	67	6	70-130	35	X
Ethylbenzene	<0.00111	0.111	0.0686	62	0.111	0.0716	65	4	71-129	35	X
m_p-Xylenes	<0.00222	0.222	0.140	63	0.223	0.146	65	4	70-135	35	X
o-Xylene	<0.00111	0.111	0.0696	63	0.111	0.0733	66	5	71-133	35	X

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 435671

Project ID: 2008-113

Lab Batch ID: 880133

QC- Sample ID: 435520-006 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/28/2012

Date Prepared: 01/26/2012

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<17.5	1170	1000	85	1170	931	80	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<17.5	1170	1130	97	1170	982	84	14	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Project Name: EK Queen Pearce

Work Order #: 435671

Lab Batch #: 879919

Project ID: 2008-113

Date Analyzed: 01/26/2012 08:30

Date Prepared: 01/26/2012

Analyst: BRB

QC- Sample ID: 435671-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.87	6.31	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



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: Basin / Plains
Date/Time: 1-25-12 15:15
Lab ID #: 435671
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>2.5</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 435675

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

31-JAN-12

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

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

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



31-JAN-12

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

Reference: XENCO Report No: **435675**
EK Queen Pearce
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 435675. 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. 435675 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 435675



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-9 @ 20'	S	01-23-12 14:00		435675-001
SB-9 @ 35'	S	01-23-12 14:15		435675-002



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 435675

Report Date: 31-JAN-12

Date Received: 01/25/2012

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Certificate of Analysis Summary 435675

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Wed Jan-25-12 03:15 pm

Report Date: 31-JAN-12

Project Location: Lea County, NM

Project Manager: Brent Barron II

Analysis Requested	Lab Id:	435675-001	435675-002				
	Field Id:	SB-9 @ 20'	SB-9 @ 35'				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Jan-23-12 14:00	Jan-23-12 14:15				
BTEX by EPA 8021	Extracted:	Jan-26-12 16:25	Jan-26-12 16:25				
	Analyzed:	Jan-26-12 22:14	Jan-26-12 22:36				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		ND 0.00113	ND 0.00110				
Toluene		ND 0.00226	ND 0.00220				
Ethylbenzene		0.00140 0.00113	ND 0.00110				
m_p-Xylenes		0.00297 0.00226	ND 0.00220				
o-Xylene		ND 0.00113	ND 0.00110				
Xylenes, Total		0.00297 0.00113	ND 0.00110				
Total BTEX		0.00437 0.00113	ND 0.00110				
Percent Moisture	Extracted:	Jan-26-12 08:30	Jan-26-12 09:00				
	Analyzed:						
	Units/RL:	% RL	% RL				
Percent Moisture		5.41 1.00	3.19 1.00				
TPH by SW8015 Mod	Extracted:	Jan-26-12 13:35	Jan-26-12 13:35				
	Analyzed:	Jan-28-12 11:36	Jan-28-12 12:02				
	Units/RL:	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		33.3 15.9	ND 15.5				
C12-C28 Diesel Range Hydrocarbons		1160 15.9	29.9 15.5				
C28-C35 Oil Range Hydrocarbons		155 15.9	ND 15.5				
Total TPH		1350 15.9	29.9 15.5				

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

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Brent Barron II
Odessa Laboratory Manager

Flagging Criteria

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

^ NELAC or State program does not offer Accreditation at this time.

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435675,

Project ID: 2008-113

Lab Batch #: 879921

Sample: 435675-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 01/26/12 22:14	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0301	0.0300	100	80-120
4-Bromofluorobenzene		0.0284	0.0300	95	80-120

Lab Batch #: 879921

Sample: 435675-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 01/26/12 22:36	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0294	0.0300	98	80-120
4-Bromofluorobenzene		0.0278	0.0300	93	80-120

Lab Batch #: 880133

Sample: 435675-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 01/28/12 11:36	SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		85.1	100	85	70-135
o-Terphenyl		44.0	50.0	88	70-135

Lab Batch #: 880133

Sample: 435675-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 01/28/12 12:02	SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1-Chlorooctane		81.5	99.8	82	70-135
o-Terphenyl		41.1	49.9	82	70-135

Lab Batch #: 879921

Sample: 617047-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg	Date Analyzed: 01/26/12 19:57	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0288	0.0300	96	80-120
4-Bromofluorobenzene		0.0275	0.0300	92	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435675,

Project ID: 2008-113

Lab Batch #: 880133

Sample: 617186-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/28/12 09:02		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		98.7	100	99	70-135
o-Terphenyl		51.5	50.0	103	70-135

Lab Batch #: 879921

Sample: 617047-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/26/12 18:26		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0321	0.0300	107	80-120
4-Bromofluorobenzene		0.0335	0.0300	112	80-120

Lab Batch #: 880133

Sample: 617186-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/28/12 08:13		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		93.8	100	94	70-135
o-Terphenyl		39.1	50.0	78	70-135

Lab Batch #: 879921

Sample: 617047-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/26/12 18:49		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0308	0.0300	103	80-120
4-Bromofluorobenzene		0.0305	0.0300	102	80-120

Lab Batch #: 880133

Sample: 617186-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/28/12 08:38		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		101	100	101	70-135
o-Terphenyl		46.8	50.0	94	70-135

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435675,

Project ID: 2008-113

Lab Batch #: 879921

Sample: 435786-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/26/12 22:59		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0311	0.0300	104	80-120
4-Bromofluorobenzene		0.0315	0.0300	105	80-120

Lab Batch #: 880133

Sample: 435520-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 19:05		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		103	99.6	103	70-135
o-Terphenyl		46.2	49.8	93	70-135

Lab Batch #: 879921

Sample: 435786-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/26/12 23:22		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0310	0.0300	103	80-120
4-Bromofluorobenzene		0.0311	0.0300	104	80-120

Lab Batch #: 880133

Sample: 435520-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 19:30		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		97.9	99.5	98	70-135
o-Terphenyl		41.6	49.8	84	70-135

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Project Name: EK Queen Pearce

Work Order #: 435675

Analyst: ASA

Date Prepared: 01/26/2012

Project ID: 2008-113

Date Analyzed: 01/26/2012

Lab Batch ID: 879921

Sample: 617047-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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											
Benzene	<0.00100	0.100	0.105	105	0.100	0.0985	99	6	70-130	35	
Toluene	<0.00200	0.100	0.104	104	0.100	0.0977	98	6	70-130	35	
Ethylbenzene	<0.00100	0.100	0.102	102	0.100	0.0954	95	7	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.213	107	0.200	0.200	100	6	70-135	35	
o-Xylene	<0.00100	0.100	0.102	102	0.100	0.0960	96	6	71-133	35	

Analyst: ASA

Date Prepared: 01/26/2012

Date Analyzed: 01/28/2012

Lab Batch ID: 880133

Sample: 617186-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	820	82	1000	843	84	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	783	78	1000	916	92	16	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: EK Queen Pearce

Work Order # : 435675

Project ID: 2008-113

Lab Batch ID: 879921

QC- Sample ID: 435786-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/26/2012

Date Prepared: 01/26/2012

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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	<0.000994	0.0994	0.0774	78	0.100	0.0809	81	4	70-130	35	
Toluene	<0.00199	0.0994	0.0757	76	0.100	0.0795	80	5	70-130	35	
Ethylbenzene	<0.000994	0.0994	0.0709	71	0.100	0.0748	75	5	71-129	35	
m_p-Xylenes	<0.00199	0.199	0.146	73	0.200	0.154	77	5	70-135	35	

Lab Batch ID: 880133

QC- Sample ID: 435520-006 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/28/2012

Date Prepared: 01/26/2012

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<17.5	1170	1000	85	1170	931	80	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<17.5	1170	1130	97	1170	982	84	14	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Project Name: EK Queen Pearce

Work Order #: 435675

Lab Batch #: 879919

Project ID: 2008-113

Date Analyzed: 01/26/2012 08:30

Date Prepared: 01/26/2012

Analyst: BRB

QC- Sample ID: 435671-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.87	6.31	7	20	

Lab Batch #: 879922

Date Analyzed: 01/26/2012 09:00

Date Prepared: 01/26/2012

Analyst: BRB

QC- Sample ID: 435675-002 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	3.19	3.09	3	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

**XENCO Laboratories**

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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: Basin / Plains
Date/Time: 1.25.12 15.15
Lab ID #: 435675
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>2.5</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 435679

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

01-FEB-12

Collected By: Client



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Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

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

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



01-FEB-12

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

Reference: XENCO Report No: **435679**
EK Queen Pearce
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 435679. 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. 435679 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 435679



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-10 @ 20'	S	01-23-12 15:00		435679-001
SB-10 @ 25'	S	01-23-12 15:05		435679-002
SB-10 @ 30'	S	01-23-12 15:10		435679-003
SB-10 @ 35'	S	01-23-12 15:15		435679-004
SB-10 @ 40'	S	01-23-12 15:30		435679-005
SB-10 @ 45'	S	01-23-12 15:35		435679-006
SB-10 @ 50'	S	01-23-12 15:50		435679-007
SB-10 @ 55'	S	01-23-12 15:55		435679-008
SB-10 @ 60'	S	01-23-12 16:05		435679-009



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 435679

Report Date: 01-FEB-12

Date Received: 01/25/2012

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-880041 BTEX by EPA 8021

SW8021BM

Batch 880041, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 435679-004.

SW8021BM

Batch 880041, Benzene, Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 435679-004, -009, -008.

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

Batch: LBA-880171 BTEX by EPA 8021

SW8021BM

Batch 880171, 1,4-Difluorobenzene, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 435679-002.

SW8021BM

Batch 880171, Benzene recovered below QC limits in the Matrix Spike. Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 435679-002, -007, -005, -003, -006.

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

Certificate of Analysis Summary 435679

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Wed Jan-25-12 03:15 pm

Report Date: 01-FEB-12

Project Location: Lea County, NM

Project Manager: Brent Barron II

<i>Analysis Requested</i>	<i>Lab Id:</i>	435679-001	435679-002	435679-003	435679-004	435679-005	435679-006
	<i>Field Id:</i>	SB-10 @ 20'	SB-10 @ 25'	SB-10 @ 30'	SB-10 @ 35'	SB-10 @ 40'	SB-10 @ 45'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-23-12 15:00	Jan-23-12 15:05	Jan-23-12 15:10	Jan-23-12 15:15	Jan-23-12 15:30	Jan-23-12 15:35
BTEX by EPA 8021	<i>Extracted:</i>	Jan-26-12 16:25	Jan-31-12 08:50	Jan-31-12 08:50	Jan-27-12 15:15	Jan-31-12 08:50	Jan-31-12 08:50
	<i>Analyzed:</i>	Jan-26-12 21:51	Jan-31-12 22:09	Jan-31-12 16:28	Jan-28-12 07:26	Jan-31-12 16:51	Jan-31-12 17:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		ND 0.000994	0.00701 0.00535	ND 0.00106	ND 0.00105	ND 0.00103	ND 0.00105
Toluene		ND 0.00199	ND 0.0107	ND 0.00211	ND 0.00209	ND 0.00206	ND 0.00210
Ethylbenzene		0.00169 0.000994	0.0137 0.00535	0.00176 0.00106	0.00219 0.00105	0.00203 0.00103	0.00327 0.00105
m_p-Xylenes		0.00291 0.00199	0.0307 0.0107	0.00395 0.00211	0.00369 0.00209	0.00374 0.00206	0.00603 0.00210
o-Xylene		ND 0.000994	0.0115 0.00535	0.00135 0.00106	0.00135 0.00105	0.00151 0.00103	0.00225 0.00105
Xylenes, Total		0.00291 0.000994	0.0422 0.00535	0.00530 0.00106	0.00504 0.00105	0.00525 0.00103	0.00828 0.00105
Total BTEX		0.00460 0.000994	0.0629 0.00535	0.00706 0.00106	0.00723 0.00105	0.00728 0.00103	0.0116 0.00105
Percent Moisture	<i>Extracted:</i>	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30
	<i>Analyzed:</i>						
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		5.65 1.00	6.75 1.00	5.93 1.00	3.36 1.00	3.53 1.00	3.64 1.00
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-26-12 13:35	Jan-26-12 13:35	Jan-26-12 13:35	Jan-26-12 14:45	Jan-26-12 14:45	Jan-26-12 14:45
	<i>Analyzed:</i>	Jan-28-12 12:30	Jan-30-12 16:18	Jan-28-12 13:22	Jan-30-12 13:36	Jan-30-12 14:04	Jan-27-12 08:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		49.8 15.9	492 80.0	177 15.9	ND 77.8	159 77.4	175 15.6
C12-C28 Diesel Range Hydrocarbons		1050 15.9	6010 80.0	4620 15.9	9630 77.8	8010 77.4	5190 15.6
C28-C35 Oil Range Hydrocarbons		124 15.9	445 80.0	361 15.9	679 77.8	561 77.4	407 15.6
Total TPH		1220 15.9	6950 80.0	5160 15.9	10300 77.8	8730 77.4	5770 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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Brent Barron II
Odessa Laboratory Manager

Certificate of Analysis Summary 435679

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Wed Jan-25-12 03:15 pm

Report Date: 01-FEB-12

Project Location: Lea County, NM

Project Manager: Brent Barron II

Analysis Requested	Lab Id:	435679-007	435679-008	435679-009			
	Field Id:	SB-10 @ 50'	SB-10 @ 55'	SB-10 @ 60'			
	Depth:						
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Jan-23-12 15:50	Jan-23-12 15:55	Jan-23-12 16:05			
BTEX by EPA 8021	Extracted:	Jan-31-12 08:50	Jan-27-12 15:15	Jan-27-12 15:15			
	Analyzed:	Jan-31-12 19:29	Jan-28-12 03:20	Jan-28-12 05:34			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		ND 0.00102	ND 0.00107	ND 0.00100			
Toluene		ND 0.00204	ND 0.00213	ND 0.00200			
Ethylbenzene		0.00232 0.00102	ND 0.00107	0.00220 0.00100			
m_p-Xylenes		0.00414 0.00204	0.00232 0.00213	0.00391 0.00200			
o-Xylene		0.00179 0.00102	0.00147 0.00107	0.00186 0.00100			
Xylenes, Total		0.00593 0.00102	0.00379 0.00107	0.00577 0.00100			
Total BTEX		0.00825 0.00102	0.00379 0.00107	0.00797 0.00100			
Percent Moisture	Extracted:						
	Analyzed:	Jan-26-12 08:30	Jan-26-12 08:30	Jan-26-12 08:30			
	Units/RL:	% RL	% RL	% RL			
Percent Moisture		2.62 1.00	5.45 1.00	ND 1.00			
TPH by SW8015 Mod	Extracted:	Jan-26-12 14:45	Jan-26-12 14:45	Jan-26-12 14:45			
	Analyzed:	Jan-27-12 09:02	Jan-27-12 09:29	Jan-27-12 09:54			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
C6-C12 Gasoline Range Hydrocarbons		150 15.4	41.4 15.8	29.7 15.0			
C12-C28 Diesel Range Hydrocarbons		3860 15.4	2270 15.8	910 15.0			
C28-C35 Oil Range Hydrocarbons		358 15.4	223 15.8	91.8 15.0			
Total TPH		4370 15.4	2530 15.8	1030 15.0			

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

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Brent Barron II
Odessa Laboratory Manager

Flagging Criteria

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

^ NELAC or State program does not offer Accreditation at this time.

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(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435679,

Project ID: 2008-113

Lab Batch #: 879921

Sample: 435679-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/26/12 21:51		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0292	0.0300	97	80-120
4-Bromofluorobenzene		0.0287	0.0300	96	80-120

Lab Batch #: 880123

Sample: 435679-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/27/12 08:35		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		99.0	100	99	70-135
o-Terphenyl		56.3	50.2	112	70-135

Lab Batch #: 880123

Sample: 435679-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/27/12 09:02		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		94.0	99.7	94	70-135
o-Terphenyl		57.1	49.9	114	70-135

Lab Batch #: 880123

Sample: 435679-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/27/12 09:29		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		89.7	99.7	90	70-135
o-Terphenyl		49.9	49.9	100	70-135

Lab Batch #: 880123

Sample: 435679-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/27/12 09:54		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		82.0	99.9	82	70-135
o-Terphenyl		43.4	50.0	87	70-135

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435679,

Project ID: 2008-113

Lab Batch #: 880041

Sample: 435679-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 03:20		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0283	0.0300	94	80-120
4-Bromofluorobenzene		0.0304	0.0300	101	80-120

Lab Batch #: 880041

Sample: 435679-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 05:34		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0273	0.0300	91	80-120
4-Bromofluorobenzene		0.0297	0.0300	99	80-120

Lab Batch #: 880041

Sample: 435679-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 07:26		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0282	0.0300	94	80-120
4-Bromofluorobenzene		0.0224	0.0300	75	80-120 *

Lab Batch #: 880133

Sample: 435679-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 12:30		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		94.4	100	94	70-135
o-Terphenyl		48.7	50.0	97	70-135

Lab Batch #: 880133

Sample: 435679-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/28/12 13:22		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		96.5	99.9	97	70-135
o-Terphenyl		47.8	50.0	96	70-135

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435679,

Project ID: 2008-113

Lab Batch #: 880123

Sample: 435679-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/30/12 13:36		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		125	100	125	70-135
o-Terphenyl		64.4	50.1	129	70-135

Lab Batch #: 880123

Sample: 435679-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/30/12 14:04		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		109	99.5	110	70-135
o-Terphenyl		61.3	49.8	123	70-135

Lab Batch #: 880133

Sample: 435679-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/30/12 16:18		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		96.9	99.5	97	70-135
o-Terphenyl		49.9	49.8	100	70-135

Lab Batch #: 880171

Sample: 435679-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/31/12 16:28		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0286	0.0300	95	80-120
4-Bromofluorobenzene		0.0324	0.0300	108	80-120

Lab Batch #: 880171

Sample: 435679-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/31/12 16:51		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0295	0.0300	98	80-120
4-Bromofluorobenzene		0.0285	0.0300	95	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435679,

Project ID: 2008-113

Lab Batch #: 880171

Sample: 435679-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/31/12 17:13		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0304	0.0300	101	80-120
4-Bromofluorobenzene		0.0284	0.0300	95	80-120

Lab Batch #: 880171

Sample: 435679-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/31/12 19:29		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0288	0.0300	96	80-120
4-Bromofluorobenzene		0.0335	0.0300	112	80-120

Lab Batch #: 880171

Sample: 435679-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 01/31/12 22:09		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0223	0.0300	74	80-120
4-Bromofluorobenzene		0.0176	0.0300	59	80-120

Lab Batch #: 879921

Sample: 617047-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/26/12 19:57		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0288	0.0300	96	80-120
4-Bromofluorobenzene		0.0275	0.0300	92	80-120

Lab Batch #: 880123

Sample: 617180-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/27/12 07:19		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		94.7	100	95	70-135
o-Terphenyl		52.3	50.0	105	70-135

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435679,

Project ID: 2008-113

Lab Batch #: 880041

Sample: 617121-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/27/12 23:33

SURROGATE RECOVERY STUDY

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

Lab Batch #: 880133

Sample: 617186-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/28/12 09:02

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.7	100	99	70-135	
o-Terphenyl	51.5	50.0	103	70-135	

Lab Batch #: 880171

Sample: 617208-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/31/12 13:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

Lab Batch #: 879921

Sample: 617047-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/26/12 18:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0335	0.0300	112	80-120	

Lab Batch #: 880123

Sample: 617180-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/27/12 06:28

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.6	100	94	70-135	
o-Terphenyl	41.6	50.0	83	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435679,

Project ID: 2008-113

Lab Batch #: 880041

Sample: 617121-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/27/12 22:02		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0292	0.0300	97	80-120
4-Bromofluorobenzene		0.0296	0.0300	99	80-120

Lab Batch #: 880133

Sample: 617186-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/28/12 08:13		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		93.8	100	94	70-135
o-Terphenyl		39.1	50.0	78	70-135

Lab Batch #: 880171

Sample: 617208-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/31/12 11:53		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0301	0.0300	100	80-120
4-Bromofluorobenzene		0.0347	0.0300	116	80-120

Lab Batch #: 879921

Sample: 617047-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/26/12 18:49		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0308	0.0300	103	80-120
4-Bromofluorobenzene		0.0305	0.0300	102	80-120

Lab Batch #: 880123

Sample: 617180-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 01/27/12 06:53		SURROGATE RECOVERY STUDY			
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		90.5	100	91	70-135
o-Terphenyl		41.2	50.0	82	70-135

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435679,

Project ID: 2008-113

Lab Batch #: 880041

Sample: 617121-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/27/12 22:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 880133

Sample: 617186-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/28/12 08:38

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	46.8	50.0	94	70-135	

Lab Batch #: 880171

Sample: 617208-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/31/12 12:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 879921

Sample: 435786-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/26/12 22:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 880123

Sample: 435689-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/27/12 16:17

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.7	99.6	96	70-135	
o-Terphenyl	44.7	49.8	90	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435679,

Project ID: 2008-113

Lab Batch #: 880041

Sample: 435769-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/28/12 03:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 880133

Sample: 435520-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/28/12 19:05

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	99.6	103	70-135	
o-Terphenyl	46.2	49.8	93	70-135	

Lab Batch #: 880171

Sample: 435769-010 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/31/12 17:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 879921

Sample: 435786-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/26/12 23:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 880123

Sample: 435689-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/27/12 16:42

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	93.5	99.6	94	70-135	
o-Terphenyl	42.7	49.8	86	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 435679,

Project ID: 2008-113

Lab Batch #: 880041

Sample: 435769-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/28/12 04:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 880133

Sample: 435520-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/28/12 19:30

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	97.9	99.5	98	70-135	
o-Terphenyl	41.6	49.8	84	70-135	

Lab Batch #: 880171

Sample: 435769-010 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/31/12 17:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 435679

Analyst: ASA

Date Prepared: 01/26/2012

Project ID: 2008-113

Date Analyzed: 01/26/2012

Lab Batch ID: 879921

Sample: 617047-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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											
Benzene	<0.00100	0.100	0.105	105	0.100	0.0985	99	6	70-130	35	
Toluene	<0.00200	0.100	0.104	104	0.100	0.0977	98	6	70-130	35	
Ethylbenzene	<0.00100	0.100	0.102	102	0.100	0.0954	95	7	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.213	107	0.200	0.200	100	6	70-135	35	
o-Xylene	<0.00100	0.100	0.102	102	0.100	0.0960	96	6	71-133	35	

Analyst: ASA

Date Prepared: 01/27/2012

Date Analyzed: 01/27/2012

Lab Batch ID: 880041

Sample: 617121-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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											
Benzene	<0.00100	0.100	0.0924	92	0.100	0.0996	100	8	70-130	35	
Toluene	<0.00200	0.100	0.0927	93	0.100	0.101	101	9	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0923	92	0.100	0.100	100	8	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.187	94	0.200	0.204	102	9	70-135	35	
o-Xylene	<0.00100	0.100	0.0926	93	0.100	0.101	101	9	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: EK Queen Pearce

Work Order #: 435679

Analyst: ASA

Date Prepared: 01/31/2012

Project ID: 2008-113

Date Analyzed: 01/31/2012

Lab Batch ID: 880171

Sample: 617208-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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											
Benzene	<0.00100	0.100	0.0922	92	0.100	0.0941	94	2	70-130	35	
Toluene	<0.00200	0.100	0.0919	92	0.100	0.0932	93	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0913	91	0.100	0.0919	92	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.191	96	0.200	0.192	96	1	70-135	35	
o-Xylene	<0.00100	0.100	0.0941	94	0.100	0.0947	95	1	71-133	35	

Analyst: ASA

Date Prepared: 01/26/2012

Date Analyzed: 01/27/2012

Lab Batch ID: 880123

Sample: 617180-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	801	80	1000	807	81	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	832	83	1000	956	96	14	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes

Project Name: EK Queen Pearce

Work Order #: 435679

Analyst: ASA

Date Prepared: 01/26/2012

Project ID: 2008-113

Date Analyzed: 01/28/2012

Lab Batch ID: 880133

Sample: 617186-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	820	82	1000	843	84	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	783	78	1000	916	92	16	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: EK Queen Pearce

Work Order # : 435679

Project ID: 2008-113

Lab Batch ID: 879921

QC- Sample ID: 435786-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/26/2012

Date Prepared: 01/26/2012

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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	<0.000994	0.0994	0.0774	78	0.100	0.0809	81	4	70-130	35	
Toluene	<0.00199	0.0994	0.0757	76	0.100	0.0795	80	5	70-130	35	
Ethylbenzene	<0.000994	0.0994	0.0709	71	0.100	0.0748	75	5	71-129	35	
m_p-Xylenes	<0.00199	0.199	0.146	73	0.200	0.154	77	5	70-135	35	

Lab Batch ID: 880041

QC- Sample ID: 435769-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/28/2012

Date Prepared: 01/27/2012

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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	<0.00112	0.112	0.0743	66	0.112	0.0733	65	1	70-130	35	X
Toluene	<0.00225	0.112	0.0732	65	0.112	0.0718	64	2	70-130	35	X
Ethylbenzene	<0.00112	0.112	0.0711	63	0.112	0.0695	62	2	71-129	35	X
m_p-Xylenes	<0.00225	0.225	0.142	63	0.224	0.138	62	3	70-135	35	X
o-Xylene	<0.00112	0.112	0.0692	62	0.112	0.0673	60	3	71-133	35	X

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 435679

Project ID: 2008-113

Lab Batch ID: 880171

QC- Sample ID: 435769-010 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 01/31/2012

Date Prepared: 01/31/2012

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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	<0.00111	0.111	0.0712	64	0.111	0.0773	70	8	70-130	35	X
Toluene	<0.00222	0.111	0.0700	63	0.111	0.0746	67	6	70-130	35	X
Ethylbenzene	<0.00111	0.111	0.0686	62	0.111	0.0716	65	4	71-129	35	X
m_p-Xylenes	<0.00222	0.222	0.140	63	0.223	0.146	65	4	70-135	35	X
o-Xylene	<0.00111	0.111	0.0696	63	0.111	0.0733	66	5	71-133	35	X

Lab Batch ID: 880123

QC- Sample ID: 435689-001 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 01/27/2012

Date Prepared: 01/26/2012

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.5	1030	857	83	1030	850	83	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.5	1030	996	97	1030	916	89	8	70-135	35	

Lab Batch ID: 880133

QC- Sample ID: 435520-006 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 01/28/2012

Date Prepared: 01/26/2012

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<17.5	1170	1000	85	1170	931	80	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<17.5	1170	1130	97	1170	982	84	14	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Project Name: EK Queen Pearce

Work Order #: 435679

Lab Batch #: 879919

Project ID: 2008-113

Date Analyzed: 01/26/2012 08:30

Date Prepared: 01/26/2012

Analyst: BRB

QC- Sample ID: 435671-001 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	5.87	6.31	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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

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

bjarguijo@basinenv.com

Fax No:

TRRP

NPDES

e-mail:

Final 1.000

**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: Basin / Plains
Date/Time: 1-25-12 15:15
Lab ID #: 435679
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>2.5</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 454259

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

EK Queen Pearce

2008-113

20-DEC-12

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

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

Xenco-Lakeland: Florida (E84098)

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

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

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

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

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



20-DEC-12

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

Reference: XENCO Report No(s): **454259**
EK Queen Pearce
Project Address: Lea County, NM

Ben Arguijo:

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(s) 454259. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 454259 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 454259



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-4@10'	S	12-11-12 11:40		454259-001
MW-4@20'	S	12-11-12 11:50		454259-002
MW-4@30'	S	12-11-12 12:00		454259-003
MW-4@40'	S	12-11-12 12:10		454259-004
MW-4@60'	S	12-11-12 12:30		454259-005



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number(s): 454259

Report Date: 20-DEC-12

Date Received: 12/17/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 454259

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Mon Dec-17-12 09:40 am

Report Date: 20-DEC-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

<i>Analysis Requested</i>	<i>Lab Id:</i>	454259-001	454259-002	454259-003	454259-004	454259-005	
	<i>Field Id:</i>	MW-4@10'	MW-4@20'	MW-4@30'	MW-4@40'	MW-4@60'	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Dec-11-12 11:40	Dec-11-12 11:50	Dec-11-12 12:00	Dec-11-12 12:10	Dec-11-12 12:30	
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-17-12 10:20	Dec-17-12 10:20	Dec-17-12 10:20	Dec-17-12 10:20	Dec-17-12 10:20	
	<i>Analyzed:</i>	Dec-18-12 08:30	Dec-17-12 14:11	Dec-17-12 14:28	Dec-17-12 15:02	Dec-17-12 14:45	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		ND 0.00123	ND 0.00114	ND 0.00110	ND 0.00106	ND 0.00108	
Toluene		ND 0.00245	ND 0.00228	ND 0.00220	ND 0.00211	ND 0.00217	
Ethylbenzene		ND 0.00123	ND 0.00114	ND 0.00110	ND 0.00106	ND 0.00108	
m_p-Xylenes		ND 0.00245	ND 0.00228	ND 0.00220	ND 0.00211	ND 0.00217	
o-Xylene		ND 0.00123	ND 0.00114	ND 0.00110	ND 0.00106	ND 0.00108	
Total Xylenes		ND 0.00123	ND 0.00114	ND 0.00110	ND 0.00106	ND 0.00108	
Total BTEX		ND 0.00123	ND 0.00114	ND 0.00110	ND 0.00106	ND 0.00108	
Percent Moisture	<i>Extracted:</i>	Dec-17-12 15:08	Dec-17-12 15:08	Dec-17-12 15:08	Dec-17-12 15:10	Dec-17-12 15:10	
	<i>Analyzed:</i>						
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		18.0 1.00	11.8 1.00	7.34 1.00	5.65 1.00	8.14 1.00	
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-18-12 14:00	Dec-18-12 14:00	Dec-18-12 14:00	Dec-18-12 14:00	Dec-18-12 14:00	
	<i>Analyzed:</i>	Dec-18-12 19:53	Dec-18-12 20:26	Dec-19-12 09:30	Dec-18-12 21:29	Dec-18-12 22:01	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 18.2	ND 17.0	ND 16.2	ND 15.9	ND 16.2	
C12-C28 Diesel Range Hydrocarbons		ND 18.2	ND 17.0	ND 16.2	ND 15.9	ND 16.2	
C28-C35 Oil Range Hydrocarbons		ND 18.2	ND 17.0	ND 16.2	ND 15.9	ND 16.2	
Total TPH		ND 18.2	ND 17.0	ND 16.2	ND 15.9	ND 16.2	

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



Nicholas Straccione
Project Manager

Flagging Criteria

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 454259,

Project ID: 2008-113

Lab Batch #: 903016

Sample: 454259-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 12/17/12 14:11		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0283	0.0300	94	80-120
4-Bromofluorobenzene		0.0252	0.0300	84	80-120

Lab Batch #: 903016

Sample: 454259-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 12/17/12 14:28		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0284	0.0300	95	80-120
4-Bromofluorobenzene		0.0279	0.0300	93	80-120

Lab Batch #: 903016

Sample: 454259-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 12/17/12 14:45		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0241	0.0300	80	80-120
4-Bromofluorobenzene		0.0283	0.0300	94	80-120

Lab Batch #: 903016

Sample: 454259-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 12/17/12 15:02		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0245	0.0300	82	80-120
4-Bromofluorobenzene		0.0253	0.0300	84	80-120

Lab Batch #: 903016

Sample: 454259-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 12/18/12 08:30		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0310	0.0300	103	80-120
4-Bromofluorobenzene		0.0304	0.0300	101	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 454259,

Project ID: 2008-113

Lab Batch #: 903201

Sample: 454259-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/12 19:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.5	99.7	90	70-135	
o-Terphenyl	44.0	49.9	88	70-135	

Lab Batch #: 903201

Sample: 454259-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/12 20:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.5	100	88	70-135	
o-Terphenyl	42.8	50.1	85	70-135	

Lab Batch #: 903201

Sample: 454259-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/12 21:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	99.7	98	70-135	
o-Terphenyl	46.9	49.9	94	70-135	

Lab Batch #: 903201

Sample: 454259-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/12 22:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.5	99.5	88	70-135	
o-Terphenyl	42.3	49.8	85	70-135	

Lab Batch #: 903201

Sample: 454259-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/12 09:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.2	99.8	87	70-135	
o-Terphenyl	43.1	49.9	86	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 454259,

Project ID: 2008-113

Lab Batch #: 903016

Sample: 631322-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/12 09:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 903201

Sample: 631430-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/18/12 16:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.7	99.8	94	70-135	
o-Terphenyl	45.7	49.9	92	70-135	

Lab Batch #: 903016

Sample: 631322-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/12 09:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 903201

Sample: 631430-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/18/12 15:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.9	99.8	97	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 903016

Sample: 631322-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/12 09:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 454259,

Project ID: 2008-113

Lab Batch #: 903201

Sample: 631430-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 12/18/12 16:15		SURROGATE RECOVERY STUDY			
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		88.9	99.9	89	70-135
o-Terphenyl		52.8	50.0	106	70-135

Lab Batch #: 903016

Sample: 454259-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 12/17/12 15:19		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0322	0.0300	107	80-120
4-Bromofluorobenzene		0.0283	0.0300	94	80-120

Lab Batch #: 903201

Sample: 454258-005 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 12/19/12 02:09		SURROGATE RECOVERY STUDY			
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		94.3	99.8	94	70-135
o-Terphenyl		55.6	49.9	111	70-135

Lab Batch #: 903016

Sample: 454259-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 12/17/12 15:36		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0356	0.0300	119	80-120
4-Bromofluorobenzene		0.0325	0.0300	108	80-120

Lab Batch #: 903201

Sample: 454258-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 12/19/12 02:39		SURROGATE RECOVERY STUDY			
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1-Chlorooctane		95.7	99.9	96	70-135
o-Terphenyl		51.7	50.0	103	70-135

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 454259

Analyst: KEB

Date Prepared: 12/17/2012

Project ID: 2008-113

Date Analyzed: 12/17/2012

Lab Batch ID: 903016

Sample: 631322-1-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 [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											
Benzene	<0.00101	0.101	0.0876	87	0.0996	0.110	110	23	70-130	35	
Toluene	<0.00201	0.101	0.0888	88	0.0996	0.111	111	22	70-130	35	
Ethylbenzene	<0.00101	0.101	0.0872	86	0.0996	0.107	107	20	71-129	35	
m_p-Xylenes	<0.00201	0.201	0.187	93	0.199	0.227	114	19	70-135	35	
o-Xylene	<0.00101	0.101	0.0906	90	0.0996	0.113	113	22	71-133	35	

Analyst: KEB

Date Prepared: 12/18/2012

Date Analyzed: 12/18/2012

Lab Batch ID: 903201

Sample: 631430-1-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 [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											
C6-C12 Gasoline Range Hydrocarbons	<15.0	998	1030	103	999	949	95	8	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	998	999	100	999	930	93	7	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: EK Queen Pearce

Work Order #: 454259

Project ID: 2008-113

Lab Batch ID: 903016

QC- Sample ID: 454259-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/17/2012

Date Prepared: 12/17/2012

Analyst: KEB

Reporting Units: mg/kg

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00114	0.114	0.108	95	0.114	0.111	97	3	70-130	35	
Toluene	<0.00227	0.114	0.109	96	0.114	0.114	100	4	70-130	35	
Ethylbenzene	<0.00114	0.114	0.101	89	0.114	0.107	94	6	71-129	35	
m_p-Xylenes	<0.00227	0.227	0.213	94	0.228	0.223	98	5	70-135	35	
o-Xylene	<0.00114	0.114	0.100	88	0.114	0.118	104	17	71-133	35	

Lab Batch ID: 903201

QC- Sample ID: 454258-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2012

Date Prepared: 12/18/2012

Analyst: KEB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<19.5	1300	1400	108	1300	1320	102	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<19.5	1300	1350	104	1300	1300	100	4	70-135	35	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Project Name: EK Queen Pearce

Work Order #: 454259

Lab Batch #: 903085

Project ID: 2008-113

Date Analyzed: 12/17/2012 11:55

Date Prepared: 12/17/2012

Analyst: WRU

QC- Sample ID: 454205-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.16	1.11	4	20	

Lab Batch #: 903092

Date Analyzed: 12/17/2012 15:10

Date Prepared: 12/17/2012

Analyst: WRU

QC- Sample ID: 454259-004 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.65	5.65	0	20	

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

BRL - Below Reporting Limit

Xenco Laboratories

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 J. Arguijo

Project Name: EK Queen Pearce

Company Name **Basin Environmental Service Technologies, LLC**

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No: (575)396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:

e-mail: bjarguijo@basinenv.com

[illegible]



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 12/17/2012 09:40:00 AM

Work Order #: 454259

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-1.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____

Date: _____

Checklist reviewed by: _____

Date: _____

Appendix F
Laboratory Analytical Reports
(Groundwater)

Analytical Report 308796
for
PLAINS ALL AMERICAN EH&S

Project Manager: Camille Reynolds

E K Queen 6" Pearce

2008-113

31-JUL-08



12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215

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

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

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

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



31-JUL-08

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

Reference: XENCO Report No: **308796**
E K Queen 6" Pearce
Project Address: Lea County, NM

Camille Reynolds:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 308796. 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. 308796 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,

A handwritten signature in black ink, appearing to read "Brent Barron, II", written over a horizontal line.

Brent Barron, II

Odessa Laboratory Manager

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Sample Cross Reference 308796



PLAINS ALL AMERICAN EH&S, Midland, TX

E K Queen 6" Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Prelim GW	W	Jul-25-08 16:45		308796-001



Certificate of Analysis Summary 308796
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2008-113
Contact: Camille Reynolds
Project Location: Lea County, NM

Project Name: E K Queen 6" Pearce

Date Received in Lab: Tue Jul-29-08 08:30 am
Report Date: 31-JUL-08
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	308796-001					
	Field Id:	Prelim GW					
	Depth:						
	Matrix:	WATER					
	Sampled:	Jul-25-08 16:45					
BTEX by EPA 8021B	Extracted:	Jul-30-08 16:02					
	Analyzed:	Jul-31-08 06:24					
	Units/RL:	mg/L RL					
Benzene		0.0016 0.0010					
Toluene		0.0080 0.0020					
Ethylbenzene		0.0074 0.0010					
m,p-Xylenes		0.0091 0.0020					
o-Xylene		0.0049 0.0010					
Total Xylenes		0.014					
Total BTEX		0.031					

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

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


Brent Barron
Odessa Laboratory Director



Flagging Criteria

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

* Outside XENCO'S scope of NELAC Accreditation

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11381 Meadowglen Lane Suite L Houston, Tx 77082-2647
9701 Harry Hines Blvd , Dallas, TX 75220
5332 Blackberry Drive, Suite 104, San Antonio, TX 78238
2505 N. Falkenburg Rd., Tampa, FL 33619
5757 NW 158th St, Miami Lakes, FL 33014
6017 Financial Dr., Norcross, GA 30071

Phone	Fax
(281) 589-0692	(281) 589-0695
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477

Project Name: E K Queen 6" Pearce

Work Order #: 308796

Project ID: 2008-113

Lab Batch #: 729592

Sample: 308660-010 S / MS

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 729592

Sample: 308660-010 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 729592

Sample: 308796-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0369	0.0300	123	80-120	**
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 729592

Sample: 513044-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0340	0.0300	113	80-120	

Lab Batch #: 729592

Sample: 513044-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0350	0.0300	117	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: E K Queen 6" Pearce



Work Order #: 308796

Project ID: 2008-113

Lab Batch #: 729592

Sample: 513044-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: E K Queen 6" Pearce

Work Order #: 308796

Analyst: BRB

Date Prepared: 07/30/2008

Project ID: 2008-113

Date Analyzed: 07/31/2008

Lab Batch ID: 729592

Sample: 513044-1-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 [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											
Benzene	ND	0.0500	0.0553	111	0.05	0.0456	91	19	70-125	25	
Toluene	ND	0.0500	0.0544	109	0.05	0.0434	87	22	70-125	25	
Ethylbenzene	ND	0.0500	0.0583	117	0.05	0.0467	93	22	71-129	25	
m,p-Xylenes	ND	0.1000	0.1213	121	0.1	0.0971	97	22	70-131	25	
o-Xylene	ND	0.0500	0.0598	120	0.05	0.0472	94	24	71-133	25	

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

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

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

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: E K Queen 6" Pearce

Work Order # : 308796

Project ID: 2008-113

Lab Batch ID: 729592

QC- Sample ID: 308660-010 S

Batch #: 1 Matrix: Water

Date Analyzed: 07/31/2008

Date Prepared: 07/30/2008

Analyst: BRB

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.0500	0.0521	104	0.0500	0.0430	86	19	70-125	25	
Toluene	ND	0.0500	0.0497	99	0.0500	0.0397	79	22	70-125	25	
Ethylbenzene	ND	0.0500	0.0538	108	0.0500	0.0432	86	23	71-129	25	
m,p-Xylenes	ND	0.1000	0.1121	112	0.1000	0.0902	90	22	70-131	25	
o-Xylene	ND	0.0500	0.0545	109	0.0500	0.0445	89	20	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

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

Project Manager: **Curt Stanley**

PAGE 01 OF 01

Project Name: E K QUEEN 6" PEARCE

Company Name Basin Environmental Service Technologies, LLC

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - C. J. Reynolds

Telephone No: (505) 441-2244

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:

e-mail: cstanley@basinenv.com

(lab use only)

ORDER #: 308796

[illegible]

Special Instructions:

Laboratory Comments:

Relinquished by: [Signature]

Date	Time

Received by:

Received by:

Date _____

Time

Labels on container(s)

Relinquished by: _____

Date	Time

Received by:

Received by:

Date _____

Time

Sample ~~Hand~~ Delivered

Relinquished by:

Date	Time

Received by

Received by _____

Date _____

Time

Temperature: 100 °C

Temperature Upon Receipt: *VOA 0.5* °C

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

Client: Basin Environmental
Date/ Time: 7/24/08 8:30
Lab ID #: 308796
Initials: JG

Sample Receipt Checklist

	Yes	No	Client Initials
#1 Temperature of container/ cooler?	☒	No	0.5 °C
#2 Shipping container in good condition?	☒	No	
#3 Custody Seals intact on shipping container/ cooler?	☒	No	Not Present
#4 Custody Seals intact on sample bottles/ container?	☒	No	Not Present
#5 Chain of Custody present?	☒	No	
#6 Sample instructions complete of Chain of Custody?	☒	No	
#7 Chain of Custody signed when relinquished/ received?	☒	No	
#8 Chain of Custody agrees with sample label(s)?	☒	No	ID written on Cont / Lid
#9 Container label(s) legible and intact?	☒	No	Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody?	☒	No	
#11 Containers supplied by ELDT?	☒	No	
#12 Samples in proper container/ bottle?	☒	No	See Below
#13 Samples properly preserved?	☒	No	See Below
#14 Sample bottles intact?	☒	No	
#15 Preservations documented on Chain of Custody?	☒	No	
#16 Containers documented on Chain of Custody?	☒	No	
#17 Sufficient sample amount for indicated test(s)?	☒	No	See Below
#18 All samples received within sufficient hold time?	☒	No	See Below
#19 Subcontract of sample(s)?	☒	No	Not Applicable
#20 VOC samples have zero headspace?	☒	No	Not Applicable

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 322927

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

E.K. Queen 6 Inch Pearce

2008-113

22-JAN-09



12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:

Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:

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

South Carolina certification numbers:

Norcross(Atlanta), GA 98015

North Carolina certification numbers:

Norcross(Atlanta), GA 483

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



22-JAN-09

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

Reference: XENCO Report No: **322927**
E.K. Queen 6 Inch Pearce
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 322927. 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. 322927 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 322927



PLAINS ALL AMERICAN EH&S, Midland, TX

E.K. Queen 6 Inch Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Jan-20-09 10:45		322927-001
MW-2	W	Jan-20-09 11:45		322927-002
MW-3	W	Jan-20-09 13:30		322927-003



Certificate of Analysis Summary 322927

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: E.K. Queen 6 Inch Pearce

Date Received in Lab: Wed Jan-21-09 08:32 am

Report Date: 22-JAN-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	322927-001	322927-002	322927-003			
	Field Id:	MW-1	MW-2	MW-3			
	Depth:						
	Matrix:	WATER	WATER	WATER			
	Sampled:	Jan-20-09 10:45	Jan-20-09 11:45	Jan-20-09 13:30			
Anions by EPA 300	Extracted:						
	Analyzed:	Jan-21-09 09:37	Jan-21-09 09:37	Jan-21-09 09:37			
	Units/RL:	mg/L RL	mg/L RL	mg/L RL			
Chloride		200 5.00	206 5.00	126 5.00			
BTEX by EPA 8021B	Extracted:	Jan-21-09 16:00	Jan-21-09 16:00	Jan-21-09 16:00			
	Analyzed:	Jan-22-09 03:36	Jan-22-09 03:58	Jan-22-09 04:19			
	Units/RL:	mg/L RL	mg/L RL	mg/L RL			
Benzene		ND 0.0010	ND 0.0010	ND 0.0010			
Toluene		ND 0.0020	ND 0.0020	ND 0.0020			
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010			
m,p-Xylenes		ND 0.0020	ND 0.0020	ND 0.0020			
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010			
Total Xylenes		ND 0.0010	ND 0.0010	ND 0.0010			
Total BTEX		ND 0.0010	ND 0.0010	ND 0.0010			
TDS by SM2540C	Extracted:						
	Analyzed:	Jan-21-09 16:05	Jan-21-09 16:05	Jan-21-09 16:05			
	Units/RL:	mg/L RL	mg/L RL	mg/L RL			
Total dissolved solids		528 5.00	572 5.00	378 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

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Work Orders : 322927,

Project ID: 2008-113

Lab Batch #: 747222

Sample: 322896-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 747222

Sample: 322896-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 747222

Sample: 322927-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 747222

Sample: 322927-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 747222

Sample: 322927-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Work Orders : 322927,

Project ID: 2008-113

Lab Batch #: 747222

Sample: 523400-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 747222

Sample: 523400-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 747222

Sample: 523400-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Blank Spike Recovery



Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 322927

Project ID: 2008-113

Lab Batch #: 747179

Sample: 747179-1-BKS

Matrix: Water

Date Analyzed: 01/21/2009

Date Prepared: 01/21/2009

Analyst: LATCOR

Reporting Units: mg/L

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Anions by EPA 300	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Chloride	ND	10.0	9.91	99	90-110	

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

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



BS / BSD Recoveries



Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 322927

Analyst: ASA

Date Prepared: 01/21/2009

Project ID: 2008-113

Date Analyzed: 01/21/2009

Lab Batch ID: 747222

Sample: 523400-1-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	0.0891	89	0.1	0.0908	91	2	70-125	25	
Toluene	ND	0.1000	0.0873	87	0.1	0.0891	89	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0968	97	0.1	0.0994	99	3	71-129	25	
m,p-Xylenes	ND	0.2000	0.1912	96	0.2	0.1962	98	3	70-131	25	
o-Xylene	ND	0.1000	0.0929	93	0.1	0.0956	96	3	71-133	25	

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

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

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

All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries



Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 322927

Lab Batch #: 747179

Project ID: 2008-113

Date Analyzed: 01/21/2009

Date Prepared: 01/21/2009

Analyst: LATCOR

QC- Sample ID: 322927-001 S

Batch #: 1

Matrix: Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	200	100	304	104	80-120	

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



Form 3 - MS / MSD Recoveries



Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 322927

Project ID: 2008-113

Lab Batch ID: 747222

QC- Sample ID: 322896-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 01/22/2009

Date Prepared: 01/21/2009

Analyst: ASA

Reporting Units: mg/L

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0826	83	0.1000	0.0858	86	4	70-125	25	
Toluene	ND	0.1000	0.0806	81	0.1000	0.0837	84	4	70-125	25	
Ethylbenzene	ND	0.1000	0.0895	90	0.1000	0.0925	93	3	71-129	25	
m,p-Xylenes	ND	0.2000	0.1770	89	0.2000	0.1824	91	2	70-131	25	
o-Xylene	ND	0.1000	0.0845	85	0.1000	0.0875	88	3	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Sample Duplicate Recovery



Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 322927

Lab Batch #: 747179

Date Analyzed: 01/21/2009

QC- Sample ID: 322927-001 D

Reporting Units: mg/L

Project ID: 2008-113

Analyst: LATCOR

Date Prepared: 01/21/2009

Batch #: 1

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	200	200	0	20	

Lab Batch #: 747236

Date Analyzed: 01/21/2009

QC- Sample ID: 322927-001 D

Reporting Units: mg/L

Date Prepared: 01/21/2009

Batch #: 1

Analyst: WRU

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY

TDS by SM2540C	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Total dissolved solids	528	538	2	30	

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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

Project Name: E.K. Queen 6 inch Pearce

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA - J. Henry

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Chris Stanley e-mail: cstanley@basinenv.com

[illegible]

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Burns Env / Plains
 Date/ Time: 12/01/2004 8:32
 Lab ID #: 322921
 Initials: CL

Sample Receipt Checklist

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

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 335808

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

E.K. Queen 6 Inch Pearce

2008-113

24-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

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Midland - Corpus Christi - Atlanta



24-JUN-09

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

Reference: XENCO Report No: **335808**
E.K. Queen 6 Inch Pearce
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 335808. 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. 335808 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 335808



PLAINS ALL AMERICAN EH&S, Midland, TX

E.K. Queen 6 Inch Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Jun-15-09 10:00		335808-001
MW-2	W	Jun-15-09 11:00		335808-002
MW-3	W	Jun-15-09 12:00		335808-003



Certificate of Analysis Summary 335808
PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113
Contact: Jason Henry
Project Location: Lea County, NM

Project Name: E.K. Queen 6 Inch Pearce

Date Received in Lab: Thu Jun-18-09 08:34 am
Report Date: 24-JUN-09
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	335808-001	335808-002	335808-003			
	Field Id:	MW-1	MW-2	MW-3			
	Depth:						
	Matrix:	WATER	WATER	WATER			
	Sampled:	Jun-15-09 10:00	Jun-15-09 11:00	Jun-15-09 12:00			
BTEX by EPA 8021B	Extracted:	Jun-19-09 17:10	Jun-19-09 17:10	Jun-19-09 17:10			
	Analyzed:	Jun-20-09 14:37	Jun-20-09 14:58	Jun-20-09 15:21			
	Units/RL:	mg/L RL	mg/L RL	mg/L RL			
Benzene		ND 0.0010	ND 0.0010	ND 0.0010			
Toluene		ND 0.0020	ND 0.0020	ND 0.0020			
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010			
m,p-Xylenes		ND 0.0020	ND 0.0020	ND 0.0020			
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010			
Total Xylenes		ND 0.0010	ND 0.0010	ND 0.0010			
Total BTEX		ND 0.0010	ND 0.0010	ND 0.0010			

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Brent Barron
Odessa Laboratory Director

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

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Work Orders : 335808,

Project ID: 2008-113

Lab Batch #: 763207

Sample: 532282-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/20/09 13:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 763207

Sample: 532282-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/20/09 13:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 763207

Sample: 532282-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/20/09 14:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0239	0.0300	80	80-120	

Lab Batch #: 763207

Sample: 335808-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/20/09 14:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0234	0.0300	78	80-120	*

Lab Batch #: 763207

Sample: 335808-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/20/09 14:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0233	0.0300	78	80-120	*

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Work Orders : 335808,

Project ID: 2008-113

Lab Batch #: 763207

Sample: 335808-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/20/09 15:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0229	0.0300	76	80-120	*

Lab Batch #: 763207

Sample: 335808-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/20/09 22:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 763207

Sample: 335808-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/20/09 23:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 335808

Analyst: ASA

Date Prepared: 06/19/2009

Project ID: 2008-113

Date Analyzed: 06/20/2009

Lab Batch ID: 763207

Sample: 532282-1-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 [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											
Benzene	ND	0.1000	0.1041	104	0.1	0.1036	104	0	70-125	25	
Toluene	ND	0.1000	0.1016	102	0.1	0.1012	101	0	70-125	25	
Ethylbenzene	ND	0.1000	0.1088	109	0.1	0.1084	108	0	71-129	25	
m,p-Xylenes	ND	0.2000	0.2172	109	0.2	0.2169	108	0	70-131	25	
o-Xylene	ND	0.1000	0.1037	104	0.1	0.1039	104	0	71-133	25	

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

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

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

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: E.K. Queen 6 Inch Pearce

Work Order # : 335808

Project ID: 2008-113

Lab Batch ID: 763207

QC- Sample ID: 335808-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 06/20/2009

Date Prepared: 06/19/2009

Analyst: ASA

Reporting Units: mg/L

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0962	96	0.1000	0.0959	96	0	70-125	25	
Toluene	ND	0.1000	0.0934	93	0.1000	0.0930	93	0	70-125	25	
Ethylbenzene	ND	0.1000	0.0994	99	0.1000	0.0989	99	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.1971	99	0.2000	0.1916	96	3	70-131	25	
o-Xylene	ND	0.1000	0.0954	95	0.1000	0.0940	94	1	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

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

Client: Plains/Basin
Date/ Time: 06-18-09 0834
Lab ID #: 338808
Initials: JMF

Sample Receipt Checklist

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

Variance Documentation

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

Regarding: _____

Corrective Action Taken:

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

Analytical Report 344695

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

E.K. Queen 6 inch Pearce

2008-113

17-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 (AAL11), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

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

Xenco-Boca Raton (EPA Lab Code: FL00449): Florida(E86240),

South Carolina(96031001), Louisiana(04154), Georgia(917)



17-SEP-09

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

Reference: XENCO Report No: **344695**
E.K. Queen 6 inch Pearce
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 344695. 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. 344695 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 344695



PLAINS ALL AMERICAN EH&S, Midland, TX

E.K. Queen 6 inch Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Sep-15-09 12:30		344695-001
MW-2	W	Sep-15-09 12:50		344695-002
MW-3	W	Sep-15-09 13:15		344695-003



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: E.K. Queen 6 inch Pearce

Project ID: 2008-113

Work Order Number: 344695

Report Date: 17-SEP-09

Date Received: 09/16/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-772783 BTEX-MTBE EPA 8021B

SW8021BM

Batch 772783, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 538006-1-BLK, 344695-003, 344695-001. Matrix interference is suspected in sample surrogate failures.

4-Bromofluorobenzene recovered below QC limits Data confirmed by re-analysis. Samples affected are: 344695-002



Certificate of Analysis Summary 344695

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: E.K. Queen 6 inch Pearce

Date Received in Lab: Wed Sep-16-09 08:40 am

Report Date: 17-SEP-09

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	344695-001	344695-002	344695-003			
	<i>Field Id:</i>	MW-1	MW-2	MW-3			
	<i>Depth:</i>						
	<i>Matrix:</i>	WATER	WATER	WATER			
	<i>Sampled:</i>	Sep-15-09 12:30	Sep-15-09 12:50	Sep-15-09 13:15			
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-16-09 17:00	Sep-16-09 17:00	Sep-16-09 17:00			
	<i>Analyzed:</i>	Sep-16-09 20:24	Sep-16-09 20:43	Sep-16-09 21:01			
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL			
Benzene		ND 0.0010	0.0020 0.0010	ND 0.0010			
Toluene		ND 0.0020	ND 0.0020	ND 0.0020			
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010			
m,p-Xylenes		ND 0.0020	ND 0.0020	ND 0.0020			
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010			
Total Xylenes		ND 0.0010	ND 0.0010	ND 0.0010			
Total BTEX		ND 0.0010	0.0020 0.0010	ND 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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Brent Barron, II
Odessa Laboratory Manager

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

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 inch Pearce

Work Orders : 344695,

Project ID: 2008-113

Lab Batch #: 772783

Sample: 538006-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/16/09 18:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 772783

Sample: 538006-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/16/09 18:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 772783

Sample: 538006-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/16/09 19:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0187	0.0300	62	80-120	*

Lab Batch #: 772783

Sample: 344695-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/16/09 20:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0168	0.0300	56	80-120	*

Lab Batch #: 772783

Sample: 344695-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/16/09 20:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0130	0.0300	43	80-120	**

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 inch Pearce

Work Orders : 344695,

Project ID: 2008-113

Lab Batch #: 772783

Sample: 344695-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 09/16/09 21:01	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0279	0.0300	93	80-120
4-Bromofluorobenzene		0.0119	0.0300	40	80-120 *

Lab Batch #: 772783

Sample: 344695-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 09/17/09 02:16	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0298	0.0300	99	80-120
4-Bromofluorobenzene		0.0318	0.0300	106	80-120

Lab Batch #: 772783

Sample: 344695-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 09/17/09 02:34	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0301	0.0300	100	80-120
4-Bromofluorobenzene		0.0336	0.0300	112	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: E.K. Queen 6 inch Pearce

Work Order #: 344695

Analyst: ASA

Date Prepared: 09/16/2009

Project ID: 2008-113

Date Analyzed: 09/16/2009

Lab Batch ID: 772783

Sample: 538006-1-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 [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											
Benzene	ND	0.1000	0.1025	103	0.1	0.1030	103	0	70-125	25	
Toluene	ND	0.1000	0.0972	97	0.1	0.0981	98	1	70-125	25	
Ethylbenzene	ND	0.1000	0.1087	109	0.1	0.1097	110	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.2217	111	0.2	0.2232	112	1	70-131	25	
o-Xylene	ND	0.1000	0.1059	106	0.1	0.1068	107	1	71-133	25	

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

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

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

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: E.K. Queen 6 inch Pearce

Work Order # : 344695

Project ID: 2008-113

Lab Batch ID: 772783

QC- Sample ID: 344695-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 09/17/2009

Date Prepared: 09/16/2009

Analyst: ASA

Reporting Units: mg/L

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0975	98	0.1000	0.0997	100	2	70-125	25	
Toluene	ND	0.1000	0.0923	92	0.1000	0.0940	94	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1015	102	0.1000	0.1039	104	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2017	101	0.2000	0.1989	99	1	70-131	25	
o-Xylene	ND	0.1000	0.0969	97	0.1000	0.0976	98	1	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

Project Name: E.K. Queen 6 inch Pearce

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA - J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

[illegible]

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

Client: Basin Env.
Date/ Time: 09/16/09 8:40
Lab ID #: 344695
Initials: Qmkt

Sample Receipt Checklist

Client Initials

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

Variance Documentation

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

Regarding: _____

Corrective Action Taken:

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

Analytical Report 353107

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

E.K. Queen 6 Inch Pearce

2008-113

30-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)



30-NOV-09

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

Reference: XENCO Report No: **353107**
E.K. Queen 6 Inch Pearce
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 353107. 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. 353107 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 353107



PLAINS ALL AMERICAN EH&S, Midland, TX

E.K. Queen 6 Inch Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Nov-19-09 09:20		353107-001
MW-2	W	Nov-19-09 10:05		353107-002
MW-3	W	Nov-19-09 11:20		353107-003



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: E.K. Queen 6 Inch Pearce

Project ID: 2008-113

Work Order Number: 353107

Report Date: 30-NOV-09

Date Received: 11/20/2009

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-783632 BTEX by EPA 8021

None



Certificate of Analysis Summary 353107

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: E.K. Queen 6 Inch Pearce

Date Received in Lab: Fri Nov-20-09 04:45 pm

Report Date: 30-NOV-09

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	353107-001	353107-002	353107-003			
	<i>Field Id:</i>	MW-1	MW-2	MW-3			
	<i>Depth:</i>						
	<i>Matrix:</i>	WATER	WATER	WATER			
	<i>Sampled:</i>	Nov-19-09 09:20	Nov-19-09 10:05	Nov-19-09 11:20			
BTEX by EPA 8021	<i>Extracted:</i>	Nov-25-09 11:45	Nov-25-09 11:45	Nov-25-09 11:45			
	<i>Analyzed:</i>	Nov-27-09 02:11	Nov-27-09 02:32	Nov-27-09 02:53			
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL			
Benzene		ND 0.0010	ND 0.0010	ND 0.0010			
Toluene		ND 0.0020	ND 0.0020	ND 0.0020			
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010			
m,p-Xylenes		ND 0.0020	ND 0.0020	ND 0.0020			
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010			
Xylenes, Total		ND 0.0010	ND 0.0010	ND 0.0010			
Total BTEX		ND 0.0010	ND 0.0010	ND 0.0010			

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

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


Brent Barron, II
Odessa Laboratory Manager

Flagging Criteria

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

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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 842 Cantwell Lane, Corpus Christi, TX 78408

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Work Orders : 353107,

Project ID: 2008-113

Lab Batch #: 783632

Sample: 544331-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/27/09 00:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 783632

Sample: 544331-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/27/09 00:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 783632

Sample: 544331-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/27/09 01:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 783632

Sample: 353107-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/27/09 02:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 783632

Sample: 353107-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/27/09 02:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Work Orders : 353107,

Project ID: 2008-113

Lab Batch #: 783632

Sample: 353107-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/27/09 02:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 783632

Sample: 353107-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/27/09 16:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 783632

Sample: 353107-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/27/09 17:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 353107

Analyst: ASA

Date Prepared: 11/25/2009

Project ID: 2008-113

Date Analyzed: 11/27/2009

Lab Batch ID: 783632

Sample: 544331-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0927	93	0.1	0.0917	92	1	70-125	25	
Toluene	ND	0.1000	0.0929	93	0.1	0.0919	92	1	70-125	25	
Ethylbenzene	ND	0.1000	0.0896	90	0.1	0.0882	88	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.1918	96	0.2	0.1885	94	2	70-131	25	
o-Xylene	ND	0.1000	0.0965	97	0.1	0.0945	95	2	71-133	25	

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

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

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

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: E.K. Queen 6 Inch Pearce

Work Order # : 353107

Project ID: 2008-113

Lab Batch ID: 783632

QC- Sample ID: 353107-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 11/27/2009

Date Prepared: 11/25/2009

Analyst: ASA

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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	0.1000	0.0890	89	0.1000	0.0872	87	2	70-125	25	
Toluene	ND	0.1000	0.0882	88	0.1000	0.0876	88	1	70-125	25	
Ethylbenzene	ND	0.1000	0.0841	84	0.1000	0.0841	84	0	71-129	25	
m,p-Xylenes	ND	0.2000	0.1755	88	0.2000	0.1764	88	1	70-131	25	
o-Xylene	ND	0.1000	0.0899	90	0.1000	0.0909	91	1	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin / Plains
 Date/ Time: 11.20.09 16:45
 Lab ID #: 353107
 Initials: AL

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<u>Yes</u>	No	<u>5.6</u> °C	
#2	Shipping container in good condition?	<u>Yes</u>	No		
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	<u>Not Present</u>	
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	<u>Not Present</u>	
#5	Chain of Custody present?	<u>Yes</u>	No		
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No		
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No		
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No		
#11	Containers supplied by ELOT?	<u>Yes</u>	No		
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below	
#13	Samples properly preserved?	<u>Yes</u>	No	See Below	
#14	Sample bottles intact?	<u>Yes</u>	No		
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No		
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No		
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below	
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below	
#19	Subcontract of sample(s)?	<u>Yes</u>	No	<u>Not Applicable</u>	
#20	VOC samples have zero headspace?	<u>Yes</u>	No	<u>Not Applicable</u>	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 374690

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

E.K. Queen 6 Inch Pearce

2008-113

03-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)



03-JUN-10

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

Reference: XENCO Report No: **374690**
E.K. Queen 6 Inch Pearce
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 374690. 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. 374690 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 374690



PLAINS ALL AMERICAN EH&S, Midland, TX

E.K. Queen 6 Inch Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	May-21-10 09:00		374690-001
MW-2	W	May-21-10 10:00		374690-002
MW-3	W	May-21-10 11:00		374690-003



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: E.K. Queen 6 Inch Pearce



Project ID: 2008-113

Work Order Number: 374690

Report Date: 03-JUN-10

Date Received: 05/27/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-809036 BTEX by EPA 8021

SW8021BM

Batch 809036, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 374690-001.



Certificate of Analysis Summary 374690

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: E.K. Queen 6 Inch Pearce



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Thu May-27-10 01:40 pm

Report Date: 03-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	374690-001	374690-002	374690-003			
	<i>Field Id:</i>	MW-1	MW-2	MW-3			
	<i>Depth:</i>						
	<i>Matrix:</i>	WATER	WATER	WATER			
	<i>Sampled:</i>	May-21-10 09:00	May-21-10 10:00	May-21-10 11:00			
BTEX by EPA 8021	<i>Extracted:</i>	Jun-01-10 14:30	Jun-01-10 14:30	Jun-01-10 14:30			
	<i>Analyzed:</i>	Jun-02-10 10:38	Jun-02-10 11:00	Jun-02-10 11:23			
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL			
Benzene		ND 0.0010	ND 0.0010	ND 0.0010			
Toluene		ND 0.0020	ND 0.0020	ND 0.0020			
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010			
m,p-Xylenes		ND 0.0020	ND 0.0020	ND 0.0020			
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010			
Xylenes, Total		ND 0.0010	ND 0.0010	ND 0.0010			
Total BTEX		ND 0.0010	ND 0.0010	ND 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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Brent Barron, II
Odessa Laboratory Manager

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

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

Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Work Orders : 374690,

Project ID: 2008-113

Lab Batch #: 809036

Sample: 564762-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 06/01/10 15:26	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0309	0.0300	103	80-120
4-Bromofluorobenzene		0.0302	0.0300	101	80-120

Lab Batch #: 809036

Sample: 564762-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 06/01/10 15:48	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0298	0.0300	99	80-120
4-Bromofluorobenzene		0.0313	0.0300	104	80-120

Lab Batch #: 809036

Sample: 564762-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 06/01/10 16:34	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0245	0.0300	82	80-120
4-Bromofluorobenzene		0.0326	0.0300	109	80-120

Lab Batch #: 809036

Sample: 374690-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 06/02/10 10:38	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0237	0.0300	79	80-120 *
4-Bromofluorobenzene		0.0289	0.0300	96	80-120

Lab Batch #: 809036

Sample: 374690-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 06/02/10 11:00	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0240	0.0300	80	80-120
4-Bromofluorobenzene		0.0307	0.0300	102	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Work Orders : 374690,

Project ID: 2008-113

Lab Batch #: 809036

Sample: 374690-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 11:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0240	0.0300	80	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 809036

Sample: 374248-007 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 14:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 809036

Sample: 374248-007 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 14:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 374690

Analyst: ASA

Date Prepared: 06/01/2010

Project ID: 2008-113

Date Analyzed: 06/01/2010

Lab Batch ID: 809036

Sample: 564762-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0917	92	0.1	0.0967	97	5	70-125	25	
Toluene	ND	0.1000	0.0906	91	0.1	0.0950	95	5	70-125	25	
Ethylbenzene	ND	0.1000	0.0938	94	0.1	0.0970	97	3	71-129	25	
m,p-Xylenes	ND	0.2000	0.1887	94	0.2	0.1943	97	3	70-131	25	
o-Xylene	ND	0.1000	0.0913	91	0.1	0.0952	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: E.K. Queen 6 Inch Pearce

Work Order # : 374690

Project ID: 2008-113

Lab Batch ID: 809036

QC- Sample ID: 374248-007 S

Batch #: 1 Matrix: Water

Date Analyzed: 06/02/2010

Date Prepared: 06/01/2010

Analyst: ASA

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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	0.1000	0.0906	91	0.1000	0.0914	91	1	70-125	25	
Toluene	ND	0.1000	0.0873	87	0.1000	0.0885	89	1	70-125	25	
Ethylbenzene	ND	0.1000	0.0882	88	0.1000	0.0888	89	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.1752	88	0.2000	0.1735	87	1	70-131	25	
o-Xylene	ND	0.1000	0.0864	86	0.1000	0.0862	86	0	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

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

Project Manager: Curt Stanley PAGE 01 OF 01

Company Name: Basin Environmental Service Technologies, LLC

Company Address: P. O. Box 301

City/State/Zip: Lovington, NM 88260

Telephone No: (505) 441-2244

Sampler Signature: [Signature]

Fax No: (505) 396-1429

e-mail: cstanley@basinenv.com

Project Name: E.K. Queen 6 inch Pearce

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA - J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 374690

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW - Drinking Water SL - Sludge	GW - Groundwater S - Soil/soil	NP - Non-Potable Specify Other	TPH: 418.1 8015M 8015E	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030A BTEX 8260	RCI	N.O.R.M.	PAH 8270	TDS (EPA METHOD SM 2550)	CHLORIDES E 300	RUSH TAT (Pre-Schedule) 24, 48	Standard TAT
01	MW-1			5/21/2010	900		3	X	X							GW											X							X
02	MW-2			5/21/2010	1000		3	X	X							GW											X							X
03	MW-3			5/21/2010	1100		3	X	X							GW											X							X
											</																							

Special Instructions:

Relinquished by: <u>[Signature]</u>	Date: <u>5-27-10</u>	Time: <u>13:40</u>	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by: <u>Andrea Lenn</u>	Date: <u>5-27-10</u>	Time: <u>13:40</u>

Laboratory Comments:

Sample Containers Intact? X
VOCs Free of Headspace? N
Labels on container(s) N
Custody seals on container(s) N
Custody seals on cooler(s) N
Sample Hand Delivered by Sampler/Client Rep.? N
by Courier? N UPS N DHL N FedEx N Lone Star
Temperature Upon Receipt: 3.6 °C



XENCO Laboratories
Atlanta, Corpus Christi, Dallas,
Houston, Miami, Midland, Philadelphia,
San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS - SRC
Revision/Date : No.00 , 05/18/10
Effective Date: 05/20/10
Page No.: 1 of 1

Prelogin / Nonconformance Report – Sample Log-In

Client: Basin Env. / Plains
Date/Time: 5.27.10 13:40
Lab ID #: 374690
Initials: AL

Sample Receipt Checklist

1. Sample on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. Voc sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 396347

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

09-NOV-10



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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)



09-NOV-10

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

Reference: XENCO Report No: **396347**
EK Queen Pearce
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 396347. 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. 396347 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 396347



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Nov-02-10 12:00		396347-001
MW-2	W	Nov-02-10 13:00		396347-002
MW-3	W	Nov-02-10 14:00		396347-003



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 396347

Report Date: 09-NOV-10

Date Received: 11/05/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 396347

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Fri Nov-05-10 03:15 pm

Report Date: 09-NOV-10

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	396347-001	396347-002	396347-003			
	<i>Field Id:</i>	MW-1	MW-2	MW-3			
	<i>Depth:</i>						
	<i>Matrix:</i>	WATER	WATER	WATER			
	<i>Sampled:</i>	Nov-02-10 12:00	Nov-02-10 13:00	Nov-02-10 14:00			
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-08-10 11:45	Nov-08-10 11:45	Nov-08-10 11:45			
	<i>Analyzed:</i>	Nov-09-10 03:46	Nov-09-10 04:09	Nov-09-10 04:31			
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL			
Benzene		ND 0.0010	ND 0.0010	ND 0.0010			
Toluene		ND 0.0020	ND 0.0020	ND 0.0020			
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010			
m,p-Xylenes		ND 0.0020	ND 0.0020	ND 0.0020			
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010			
Total Xylenes		ND 0.0010	ND 0.0010	ND 0.0010			
Total BTEX		ND 0.0010	ND 0.0010	ND 0.0010			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
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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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 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 842 Cantwell Lane, Corpus Christi, TX 78408

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 396347,

Project ID: 2008-113

Lab Batch #: 831143

Sample: 578218-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 11/08/10 23:36		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0301	0.0300	100	80-120
4-Bromofluorobenzene		0.0296	0.0300	99	80-120

Lab Batch #: 831143

Sample: 578218-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 11/08/10 23:59		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0304	0.0300	101	80-120
4-Bromofluorobenzene		0.0310	0.0300	103	80-120

Lab Batch #: 831143

Sample: 578218-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 11/09/10 01:08		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0269	0.0300	90	80-120
4-Bromofluorobenzene		0.0278	0.0300	93	80-120

Lab Batch #: 831143

Sample: 396347-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 11/09/10 03:46		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0269	0.0300	90	80-120
4-Bromofluorobenzene		0.0290	0.0300	97	80-120

Lab Batch #: 831143

Sample: 396347-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 11/09/10 04:09		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0267	0.0300	89	80-120
4-Bromofluorobenzene		0.0285	0.0300	95	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 396347,

Project ID: 2008-113

Lab Batch #: 831143

Sample: 396347-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/09/10 04:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 831143

Sample: 396347-003 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/09/10 05:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 831143

Sample: 396347-003 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/09/10 05:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 396347

Analyst: ASA

Date Prepared: 11/08/2010

Project ID: 2008-113

Date Analyzed: 11/08/2010

Lab Batch ID: 831143

Sample: 578218-1-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	0.1061	106	0.1	0.1150	115	8	70-125	25	
Toluene	ND	0.1000	0.0974	97	0.1	0.1060	106	8	70-125	25	
Ethylbenzene	ND	0.1000	0.0944	94	0.1	0.1031	103	9	71-129	25	
m,p-Xylenes	ND	0.2000	0.1928	96	0.2	0.2106	105	9	70-131	25	
o-Xylene	ND	0.1000	0.0949	95	0.1	0.1031	103	8	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: EK Queen Pearce

Work Order #: 396347

Project ID: 2008-113

Lab Batch ID: 831143

QC- Sample ID: 396347-003 S

Batch #: 1 Matrix: Water

Date Analyzed: 11/09/2010

Date Prepared: 11/08/2010

Analyst: ASA

Reporting Units: mg/L

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1139	114	0.1000	0.1149	115	1	70-125	25	
Toluene	ND	0.1000	0.1043	104	0.1000	0.1044	104	0	70-125	25	
Ethylbenzene	ND	0.1000	0.1018	102	0.1000	0.1020	102	0	71-129	25	
m,p-Xylenes	ND	0.2000	0.2049	102	0.2000	0.1988	99	3	70-131	25	
o-Xylene	ND	0.1000	0.1018	102	0.1000	0.1012	101	1	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



XENCO Laboratories
Atlanta, Boca Raton, Cary, Charlotte, Dallas
Houston, Miami, Naples, Phoenix, San Jose
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 / Nonconformity Report - Sample Log-In

Client: Basin Environmental

Date/Time: 11-5-10 15:15

Lab ID: 396347

Offices: XM

Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No
2. Shipping container in good condition?	<u>Yes</u>	No	None
3. Custody seals intact on shipping container (coolers) and samples?	<u>Yes</u>	No	N/A
4. Chain of Custody completed?	<u>Yes</u>	No	
5. Sample instructions completed on chain of custody?	<u>Yes</u>	No	
6. Any missing sample seals?	Yes	<u>No</u>	
7. Chain of custody signed when relinquished to client?	<u>Yes</u>	No	
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No	
9. Container labels legible and intact?	<u>Yes</u>	No	
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No	
11. Samples in proper container / bottle?	<u>Yes</u>	No	
12. Samples properly preserved?	<u>Yes</u>	No	N/A
13. Sample container intact?	<u>Yes</u>	No	
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	
15. All samples received within sufficient hold time?	<u>Yes</u>	No	
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A
17. VOC sample vials were headspace?	<u>Yes</u>	No	N/A
18. Cooler 1 No. <u>26</u> °C lbs <u>26</u> °C lbs <u>26</u> °C lbs	Cooler 2 No. <u>26</u> °C lbs <u>26</u> °C lbs	Cooler 3 No. <u>26</u> °C lbs <u>26</u> °C lbs	Cooler 4 No. <u>26</u> °C lbs <u>26</u> °C lbs

Nonconformity Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Chain of custody process has been followed ☐ Sampling event and out of temperature condition acceptable by NELAP ☐ Client understands and provides like-kind analysis with analysis

Analytical Report 415745

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

12-MAY-11



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

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



12-MAY-11

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

Reference: XENCO Report No: **415745**
EK Queen Pearce
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 415745. 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. 415745 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 415745



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	May-05-11 15:30		415745-001
MW-2	W	May-05-11 13:45		415745-002
MW-3	W	May-05-11 12:30		415745-003
Travel Blank	W	May-05-11 12:00		415745-004



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 415745

Report Date: 12-MAY-11

Date Received: 05/06/2011

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 415745

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Fri May-06-11 03:27 pm

Report Date: 12-MAY-11

Project Location: Lea County, NM

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	415745-001	415745-002	415745-003	415745-004		
	<i>Field Id:</i>	MW-1	MW-2	MW-3	Travel Blank		
	<i>Depth:</i>						
	<i>Matrix:</i>	WATER	WATER	WATER	WATER		
	<i>Sampled:</i>	May-05-11 15:30	May-05-11 13:45	May-05-11 12:30	May-05-11 12:00		
BTEX by EPA 8021	<i>Extracted:</i>	May-09-11 09:02	May-09-11 09:02	May-09-11 09:02	May-09-11 16:12		
	<i>Analyzed:</i>	May-10-11 11:35	May-10-11 12:36	May-10-11 12:58	May-10-11 17:40		
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Benzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010		
Toluene		ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020		
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010		
m_p-Xylenes		ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020		
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010		
Xylenes, Total		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010		
Total BTEX		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010		

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 affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- LOD** Limit of Detection
- LOQ** Limit of Quantitation
- DL** Method Detection Limit
- * Outside XENCO's scope of NELAC Accreditation.**

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 415745,

Project ID: 2008-113

Lab Batch #: 855386

Sample: 602414-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 05/09/11 11:23	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0309	0.0300	103	80-120
4-Bromofluorobenzene		0.0325	0.0300	108	80-120

Lab Batch #: 855386

Sample: 602414-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 05/09/11 11:45	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0315	0.0300	105	80-120
4-Bromofluorobenzene		0.0315	0.0300	105	80-120

Lab Batch #: 855386

Sample: 602414-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 05/09/11 12:52	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0284	0.0300	95	80-120
4-Bromofluorobenzene		0.0270	0.0300	90	80-120

Lab Batch #: 855386

Sample: 415745-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 05/09/11 18:21	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0340	0.0300	113	80-120
4-Bromofluorobenzene		0.0291	0.0300	97	80-120

Lab Batch #: 855386

Sample: 415745-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 05/09/11 18:43	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0343	0.0300	114	80-120
4-Bromofluorobenzene		0.0322	0.0300	107	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 415745,

Project ID: 2008-113

Lab Batch #: 855386

Sample: 415745-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 05/10/11 11:35		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0290	0.0300	97	80-120
4-Bromofluorobenzene		0.0262	0.0300	87	80-120

Lab Batch #: 855386

Sample: 415745-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 05/10/11 12:36		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0289	0.0300	96	80-120
4-Bromofluorobenzene		0.0270	0.0300	90	80-120

Lab Batch #: 855386

Sample: 415745-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 05/10/11 12:58		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0294	0.0300	98	80-120
4-Bromofluorobenzene		0.0258	0.0300	86	80-120

Lab Batch #: 855780

Sample: 602621-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 05/10/11 15:26		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0358	0.0300	119	80-120
4-Bromofluorobenzene		0.0318	0.0300	106	80-120

Lab Batch #: 855780

Sample: 602621-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 05/10/11 15:48		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0318	0.0300	106	80-120
4-Bromofluorobenzene		0.0317	0.0300	106	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 415745,

Project ID: 2008-113

Lab Batch #: 855780

Sample: 602621-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 05/10/11 16:55		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0285	0.0300	95	80-120
4-Bromofluorobenzene		0.0256	0.0300	85	80-120

Lab Batch #: 855780

Sample: 415745-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 05/10/11 17:40		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0296	0.0300	99	80-120
4-Bromofluorobenzene		0.0259	0.0300	86	80-120

Lab Batch #: 855780

Sample: 415803-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 05/11/11 10:08		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0322	0.0300	107	80-120
4-Bromofluorobenzene		0.0313	0.0300	104	80-120

Lab Batch #: 855780

Sample: 415803-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 05/11/11 10:31		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0327	0.0300	109	80-120
4-Bromofluorobenzene		0.0317	0.0300	106	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 415745

Analyst: ASA

Date Prepared: 05/09/2011

Project ID: 2008-113

Date Analyzed: 05/09/2011

Lab Batch ID: 855386

Sample: 602414-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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											
Benzene	<0.00100	0.100	0.104	104	0.100	0.103	103	1	70-125	25	
Toluene	<0.00200	0.100	0.117	117	0.100	0.115	115	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.112	112	0.100	0.110	110	2	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.230	115	0.200	0.227	114	1	70-131	25	
o-Xylene	<0.00100	0.100	0.109	109	0.100	0.107	107	2	71-133	25	

Analyst: ASA

Date Prepared: 05/09/2011

Date Analyzed: 05/10/2011

Lab Batch ID: 855780

Sample: 602621-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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											
Benzene	<0.00100	0.100	0.111	111	0.100	0.106	106	5	70-125	25	
Toluene	<0.00200	0.100	0.120	120	0.100	0.116	116	3	70-125	25	
Ethylbenzene	<0.00100	0.100	0.118	118	0.100	0.111	111	6	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.236	118	0.200	0.233	117	1	70-131	25	
o-Xylene	<0.00100	0.100	0.115	115	0.100	0.108	108	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: EK Queen Pearce

Work Order # : 415745

Project ID: 2008-113

Lab Batch ID: 855386

QC- Sample ID: 415745-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 05/09/2011

Date Prepared: 05/09/2011

Analyst: ASA

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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	<0.00100	0.100	0.108	108	0.100	0.110	110	2	70-125	25	
Toluene	<0.00200	0.100	0.118	118	0.100	0.124	124	5	70-125	25	
Ethylbenzene	<0.00100	0.100	0.115	115	0.100	0.123	123	7	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.244	122	0.200	0.259	130	6	70-131	25	
o-Xylene	<0.00100	0.100	0.109	109	0.100	0.118	118	8	71-133	25	

Lab Batch ID: 855780

QC- Sample ID: 415803-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 05/11/2011

Date Prepared: 05/09/2011

Analyst: ASA

Reporting Units: mg/L

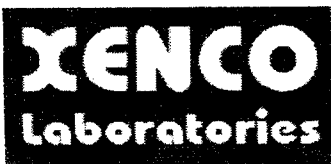
MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.104	104	0.100	0.104	104	0	70-125	25	
Toluene	<0.00200	0.100	0.110	110	0.100	0.115	115	4	70-125	25	
Ethylbenzene	<0.00100	0.100	0.108	108	0.100	0.111	111	3	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.216	108	0.200	0.225	113	4	70-131	25	
o-Xylene	<0.00100	0.100	0.102	102	0.100	0.107	107	5	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

**XENCO Laboratories**

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

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

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

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

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains
Date/Time: 5-6-11 2:27
Lab ID #: 415745
Initials: XM

Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 5.6 °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 430361

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

28-OCT-11

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
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Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

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

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

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



28-OCT-11

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

Reference: XENCO Report No: **430361**
EK Queen Pearce
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 430361. 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. 430361 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 430361



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	10-26-11 14:00		430361-001
MW-2	W	10-26-11 13:00		430361-002
MW-3	W	10-26-11 15:50		430361-003



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 430361

Report Date: 28-OCT-11

Date Received: 10/27/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 430361

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Thu Oct-27-11 12:05 pm

Report Date: 28-OCT-11

Project Location: Lea County, NM

Project Manager: Brent Barron II

<i>Analysis Requested</i>	<i>Lab Id:</i> <i>Field Id:</i> <i>Depth:</i> <i>Matrix:</i> <i>Sampled:</i>	430361-001 MW-1 WATER Oct-26-11 14:00	430361-002 MW-2 WATER Oct-26-11 13:00	430361-003 MW-3 WATER Oct-26-11 15:50			
BTEX by EPA 8021	<i>Extracted:</i> <i>Analyzed:</i> <i>Units/RL:</i>	Oct-27-11 14:30 Oct-27-11 23:51 mg/L RL	Oct-27-11 14:30 Oct-28-11 00:14 mg/L RL	Oct-27-11 14:30 Oct-28-11 00:37 mg/L RL			
Benzene		ND 0.00100	ND 0.00100	ND 0.00100			
Toluene		ND 0.00200	ND 0.00200	ND 0.00200			
Ethylbenzene		ND 0.00100	ND 0.00100	ND 0.00100			
m_p-Xylenes		ND 0.00200	ND 0.00200	ND 0.00200			
o-Xylene		ND 0.00100	ND 0.00100	ND 0.00100			
Xylenes, Total		ND 0.00100	ND 0.00100	ND 0.00100			
Total BTEX		ND 0.00100	ND 0.00100	ND 0.00100			

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 affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

^ NELAC or State program does not offer Accreditation at this time.

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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 430361,

Project ID: 2008-113

Lab Batch #: 873382

Sample: 430361-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 10/27/11 23:51		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0272	0.0300	91	80-120
4-Bromofluorobenzene		0.0255	0.0300	85	80-120

Lab Batch #: 873382

Sample: 430361-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 10/28/11 00:14		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0269	0.0300	90	80-120
4-Bromofluorobenzene		0.0250	0.0300	83	80-120

Lab Batch #: 873382

Sample: 430361-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 10/28/11 00:37		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0271	0.0300	90	80-120
4-Bromofluorobenzene		0.0251	0.0300	84	80-120

Lab Batch #: 873382

Sample: 613305-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 10/27/11 17:25		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0273	0.0300	91	80-120
4-Bromofluorobenzene		0.0255	0.0300	85	80-120

Lab Batch #: 873382

Sample: 613305-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 10/27/11 15:53		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0284	0.0300	95	80-120
4-Bromofluorobenzene		0.0271	0.0300	90	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 430361,

Project ID: 2008-113

Lab Batch #: 873382

Sample: 613305-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/27/11 16:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 873382

Sample: 430347-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/28/11 02:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 873382

Sample: 430347-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/28/11 02:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 430361

Analyst: ASA

Date Prepared: 10/27/2011

Project ID: 2008-113

Date Analyzed: 10/27/2011

Lab Batch ID: 873382

Sample: 613305-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.101	101	0.100	0.104	104	3	70-125	25	
Toluene	<0.00200	0.100	0.103	103	0.100	0.106	106	3	70-125	25	
Ethylbenzene	<0.00100	0.100	0.107	107	0.100	0.111	111	4	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.212	106	0.200	0.220	110	4	70-131	25	
o-Xylene	<0.00100	0.100	0.106	106	0.100	0.110	110	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: EK Queen Pearce

Work Order #: 430361

Project ID: 2008-113

Lab Batch ID: 873382

QC- Sample ID: 430347-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 10/28/2011

Date Prepared: 10/27/2011

Analyst: ASA

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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	0.00321	0.100	0.0904	87	0.100	0.0944	91	4	70-125	25	
Toluene	<0.00200	0.100	0.0863	86	0.100	0.0919	92	6	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0873	87	0.100	0.0932	93	7	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.153	77	0.200	0.161	81	5	70-131	25	
o-Xylene	<0.00100	0.100	0.0815	82	0.100	0.0879	88	8	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

**XENCO Laboratories**

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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-InClient: Basin Env. / PlainsDate/Time: 10-27-11 12:05Lab ID #: 430361Initials: AE**Sample Receipt Checklist**

1. Samples on ice?	Blue	~~Water~~	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 2.5 °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 441692

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

08-MAY-12

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)
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Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

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Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

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

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



08-MAY-12

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

Reference: XENCO Report No: **441692**
EK Queen Pearce
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 441692. 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. 441692 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 441692



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	05-02-12 07:00		441692-001
MW-2	W	05-02-12 07:45		441692-002
MW-3	W	05-02-12 08:30		441692-003



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 441692

Report Date: 08-MAY-12

Date Received: 05/02/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-887368 BTEX by EPA 8021

The Quality Control sample 621542-1-BSD was spiked twice and is double the amount of 625542-1-BKS. All results are within quality control limits.

SW8021BM

Batch 887368, Benzene, Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene recovered above QC limits in the Blank Spike Duplicate.

Samples affected are: 441692-001, -003, -002.

SW8021BM

Batch 887368, Benzene, Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene RPD was outside laboratory control limits.

Samples affected are: 441692-001, -003, -002

The Quality Control sample 621542-1-BSD was spiked twice and is double the amount of 625542-1-BKS. All results are within quality control limits.

Certificate of Analysis Summary 441692

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Wed May-02-12 02:00 pm

Report Date: 08-MAY-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

<i>Analysis Requested</i>	<i>Lab Id:</i>	441692-001	441692-002	441692-003			
	<i>Field Id:</i>	MW-1	MW-2	MW-3			
	<i>Depth:</i>						
	<i>Matrix:</i>	WATER	WATER	WATER			
	<i>Sampled:</i>	May-02-12 07:00	May-02-12 07:45	May-02-12 08:30			
BTEX by EPA 8021	<i>Extracted:</i>	May-07-12 10:16	May-07-12 10:16	May-07-12 10:16			
	<i>Analyzed:</i>	May-07-12 18:31	May-07-12 20:23	May-07-12 20:45			
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL			
Benzene		ND 0.00100	ND 0.00100	ND 0.00100			
Toluene		ND 0.00200	ND 0.00200	ND 0.00200			
Ethylbenzene		ND 0.00100	ND 0.00100	ND 0.00100			
m_p-Xylenes		ND 0.00200	ND 0.00200	ND 0.00200			
o-Xylene		ND 0.00100	ND 0.00100	ND 0.00100			
Xylenes, Total		ND 0.00100	ND 0.00100	ND 0.00100			
Total BTEX		ND 0.00100	ND 0.00100	ND 0.00100			

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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Nicholas Straccione
Project Manager

Flagging Criteria

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 441692,

Project ID: 2008-113

Lab Batch #: 887368

Sample: 441692-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 05/07/12 18:31	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0277	0.0300	92	80-120
4-Bromofluorobenzene		0.0245	0.0300	82	80-120

Lab Batch #: 887368

Sample: 441692-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 05/07/12 20:23	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0272	0.0300	91	80-120
4-Bromofluorobenzene		0.0247	0.0300	82	80-120

Lab Batch #: 887368

Sample: 441692-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 05/07/12 20:45	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0265	0.0300	88	80-120
4-Bromofluorobenzene		0.0245	0.0300	82	80-120

Lab Batch #: 887368

Sample: 621542-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 05/07/12 12:43	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0263	0.0300	88	80-120
4-Bromofluorobenzene		0.0257	0.0300	86	80-120

Lab Batch #: 887368

Sample: 621542-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 05/07/12 11:14	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0287	0.0300	96	80-120
4-Bromofluorobenzene		0.0291	0.0300	97	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 441692,

Project ID: 2008-113

Lab Batch #: 887368

Sample: 621542-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/07/12 11:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 887368

Sample: 441692-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/07/12 18:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 887368

Sample: 441692-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/07/12 19:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 441692

Analyst: SMG

Date Prepared: 05/07/2012

Project ID: 2008-113

Date Analyzed: 05/07/2012

Lab Batch ID: 887368

Sample: 621542-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0839	84	0.200	0.178	89	5	70-125	25	
Toluene	<0.00200	0.100	0.0833	83	0.200	0.175	88	6	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0813	81	0.200	0.171	86	6	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.168	84	0.400	0.358	90	7	70-131	25	
o-Xylene	<0.00100	0.100	0.0865	87	0.200	0.177	89	2.2	71-133	25	

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

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

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

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 441692

Project ID: 2008-113

Lab Batch ID: 887368

QC- Sample ID: 441692-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 05/07/2012

Date Prepared: 05/07/2012

Analyst: SMG

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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	<0.00100	0.100	0.0896	90	0.100	0.0815	82	9	70-125	25	
Toluene	<0.00200	0.100	0.0885	89	0.100	0.0813	81	8	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0857	86	0.100	0.0787	79	9	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.173	87	0.200	0.158	79	9	70-131	25	
o-Xylene	<0.00100	0.100	0.0877	88	0.100	0.0811	81	8	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Xenco Laboratories

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 J. Arguijo

Project Name: EK Queen Pearce

Company Name **Basin Environmental Service Technologies, LLC**

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: **(575)396-2378**

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:

e-mail: bjarguijo@basinenv.com

LAB # (lab use only)		FIELD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers										Matrix		TCLP:										TOTAL:		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs		Standard TAT 4 DAY	
Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid	NP=Non-Portable	Specify Other	TPH: 418.1	8015M	8015B	TPH: TX 1005	TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	Chloride 300												
						5/2/2012	0700		3														X														
						5/2/2012	0745		3														X														
						5/2/2012	0830		3														X														

Special Instructions:

Relinquished by:

5/2/12

1400

Relinquished by:

5/2/12

1400

Relinquished by:

5/2/12

1400

Received by:

5/2/12

1400

Received by:

5/2/12

1400

Received by ELOT:

5/2/12

1400

Laboratory Comments:

Sample Containers Intact?

Y

N

VOCs Free of Headspace?

Y

N

Labels on container(s)

Y

N

Custody seals on container(s)

Y

N

Custody seals on cooler(s)

Y

N

Sample Hand Delivered

Y

N

by Sampler/Client Rep. ?

Y

N

by Courier?

UPS

DHL

FedEx

Lone Star

Temperature Upon Receipt:

corrected as recd

4.0/5.5



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

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

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains
Date/Time: 5/2/12 14:00
Lab ID #: 441692
Initials: HH

Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>4.0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

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

Analytical Report 450842

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

EK Queen Pearce

2008-113

19-OCT-12

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

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

Xenco-Lakeland: Florida (E84098)

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

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

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

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

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



19-OCT-12

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

Reference: XENCO Report No: **450842**
EK Queen Pearce
Project Address: Lea County, NM

Ben Arguijo:

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 450842. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 450842 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 450842



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	10-12-12 12:10		450842-001
MW-2	W	10-12-12 13:00		450842-002
MW-3	W	10-12-12 13:35		450842-003



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 450842

Report Date: 19-OCT-12

Date Received: 10/16/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 450842

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Tue Oct-16-12 03:00 pm

Report Date: 19-OCT-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

<i>Analysis Requested</i>	<i>Lab Id:</i> <i>Field Id:</i> <i>Depth:</i> <i>Matrix:</i> <i>Sampled:</i>	450842-001 MW-1 WATER Oct-12-12 12:10	450842-002 MW-2 WATER Oct-12-12 13:00	450842-003 MW-3 WATER Oct-12-12 13:35			
BTEX by EPA 8021B	<i>Extracted:</i> <i>Analyzed:</i> <i>Units/RL:</i>	Oct-17-12 08:40 Oct-17-12 14:03 mg/L RL	Oct-17-12 08:40 Oct-17-12 14:18 mg/L RL	Oct-17-12 08:40 Oct-17-12 14:33 mg/L RL			
Benzene		ND 0.00100	ND 0.00100	ND 0.00100			
Toluene		ND 0.00200	ND 0.00200	ND 0.00200			
Ethylbenzene		ND 0.00100	ND 0.00100	ND 0.00100			
m_p-Xylenes		ND 0.00200	ND 0.00200	ND 0.00200			
o-Xylene		ND 0.00100	ND 0.00100	ND 0.00100			
Total Xylenes		ND 0.00100	ND 0.00100	ND 0.00100			
Total BTEX		ND 0.00100	ND 0.00100	ND 0.00100			

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



Nicholas Straccione
Project Manager

Flagging Criteria

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 9701 Harry Hines Blvd, Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 450842,

Project ID: 2008-113

Lab Batch #: 898995

Sample: 450842-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 10/17/12 14:03	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0262	0.0300	87	80-120
4-Bromofluorobenzene		0.0262	0.0300	87	80-120

Lab Batch #: 898995

Sample: 450842-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 10/17/12 14:18	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0241	0.0300	80	80-120
4-Bromofluorobenzene		0.0257	0.0300	86	80-120

Lab Batch #: 898995

Sample: 450842-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 10/17/12 14:33	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0301	0.0300	100	80-120
4-Bromofluorobenzene		0.0264	0.0300	88	80-120

Lab Batch #: 898995

Sample: 628724-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 10/17/12 09:55	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0287	0.0300	96	80-120
4-Bromofluorobenzene		0.0252	0.0300	84	80-120

Lab Batch #: 898995

Sample: 628724-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 10/17/12 09:25	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0289	0.0300	96	80-120
4-Bromofluorobenzene		0.0272	0.0300	91	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 450842,

Project ID: 2008-113

Lab Batch #: 898995

Sample: 628724-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/17/12 09:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 898995

Sample: 450850-003 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/17/12 15:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 898995

Sample: 450850-003 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/17/12 16:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 450842

Analyst: KEB

Date Prepared: 10/17/2012

Project ID: 2008-113

Date Analyzed: 10/17/2012

Lab Batch ID: 898995

Sample: 628724-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.111	111	0.100	0.105	105	6	70-125	25	
Toluene	<0.00200	0.100	0.113	113	0.100	0.107	107	5	70-125	25	
Ethylbenzene	<0.00100	0.100	0.110	110	0.100	0.103	103	7	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.238	119	0.200	0.215	108	10	70-131	25	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.108	108	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: EK Queen Pearce

Work Order # : 450842

Project ID: 2008-113

Lab Batch ID: 898995

QC- Sample ID: 450850-003 S

Batch #: 1 Matrix: Water

Date Analyzed: 10/17/2012

Date Prepared: 10/17/2012

Analyst: KEB

Reporting Units: mg/L

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0123	0.100	0.113	101	0.100	0.106	94	6	70-125	25	
Toluene	<0.00200	0.100	0.106	106	0.100	0.101	101	5	70-125	25	
Ethylbenzene	0.00107	0.100	0.103	102	0.100	0.0966	96	6	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.212	106	0.200	0.200	100	6	70-131	25	
o-Xylene	<0.00100	0.100	0.109	109	0.100	0.102	102	7	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 10/16/2012 03:00:00 PM

Work Order #: 450842

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	9.7
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____

Date: _____

Checklist reviewed by: _____

Date: _____

Xenco Laboratories

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 J. Arguijo

Project Name: EK Queen Pearce

Company Name Basin Environmental Service Technologies, LLC

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: (575)396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:

e-mail: bjarguijo@basinenv.com

(lab use only) **ORDER #:** 450842

[illegible]**Special Instructions:**

Laboratory Comments:

Relinquished by:

Date _____

Time

Received by: r

Date _____

Time

Relinquished by:

Date _____

Time

Received by:

Date _____

Time

Relinquished by:

Date _____

Time

Received by ELOT:

Date _____

Tim

Temperature Upon Receipt: 97 °C

Analytical Report 454473

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

EK Queen Pearce

2008-113

27-DEC-12

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

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

Xenco-Lakeland: Florida (E84098)

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

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

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

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

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



27-DEC-12

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

Reference: XENCO Report No(s): **454473**
EK Queen Pearce
Project Address: Lea County, NM

Ben Arguijo:

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(s) 454473. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 454473 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 454473



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-4	W	12-18-12 13:00		454473-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number(s): 454473

Report Date: 27-DEC-12

Date Received: 12/19/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-903506 Inorganic Anions by EPA 300/300.1

E300

Batch 903506, Chloride, Sulfate recovered below QC limits in the Matrix Spike.

Samples affected are: 454473-001.

The Laboratory Control Sample for Chloride , Sulfate is within laboratory Control Limits



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113
Work Order Number(s): 454473

Report Date: 27-DEC-12
Date Received: 12/19/2012

Batch: LBA-903558 SVOCs by SW-846 8270D
SW8270C

Batch 903558, 2-Fluorophenol, Phenol-d6 recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 454473-001.

SW8270C

Batch 903558, 2,4-Dinitrophenol recovered below QC limits Benzoic Acid recovered below QC limits in the Blank Spike Duplicate. 2-Chloronaphthalene recovered below QC limits in the Blank Spike Duplicate. Fluoranthene recovered above QC limits in the laboratory control sample.
Samples affected are: 454473-001.

SW8270C

Batch 903558, 2,4,6-Trichlorophenol, 2-Chloronaphthalene, 2-Methylnaphthalene, 2-methylphenol, 3&4-Methylphenol, 4-Bromophenyl-phenylether, 4-chloro-3-methylphenol, Fluoranthene, Hexachloroethane, Isophorone, Nitrobenzene, di-n-Butyl Phthalate RPD was outside laboratory control limits.
Samples affected are: 454473-001

SW8270C

Batch 903558, 2-Chloronaphthalene recovered below QC limits in the Matrix Spike.
Samples affected are: 454473-001.
The Laboratory Control Sample for 2-Chloronaphthalene is within laboratory Control Limits

1 compound failed low in the BKS but was within limits for BSD. 1 compound failed low in the BSD but was within limits for BKS.

Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect.



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113
Work Order Number(s): 454473

Report Date: 27-DEC-12
Date Received: 12/19/2012

*Batch: LBA-903654 Metals by EPA 200.8
E200.8*

*Batch 903654, Arsenic recovered below QC limits in the Matrix Spike.
Samples affected are: 454473-001.
The Laboratory Control Sample for Arsenic is within laboratory Control Limits*

*Batch: LBA-903670 VOAs by SW-846 8260B
SW8260B*

*Batch 903670, Hexachlorobutadiene recovered above QC limits in the Matrix Spike Duplicate.
Samples affected are: 454473-001.
The Laboratory Control Sample for Hexachlorobutadiene is within laboratory Control Limits*

Certificate of Analysis Summary 454473

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Wed Dec-19-12 02:00 pm

Report Date: 27-DEC-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 454473-001 Field Id: MW-4 Depth: Matrix: WATER Sampled: Dec-18-12 13:00					
Alkalinity by SM2320B SUB: TX104704215	Extracted: Analyzed: Dec-20-12 14:38 Units/RL: mg/L RL					
Alkalinity, Total (as CaCO3)	172 4.00					
Alkalinity, Bicarbonate (as CaCO3)	172 4.00					
Alkalinity, Carbonate (as CaCO3)	ND 4.00					
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	Extracted: Dec-20-12 12:37 Analyzed: Dec-20-12 12:37 Units/RL: mg/L RL					
Chloride	402 4.00					
Fluoride	0.876 0.0400					
Nitrate as N	2.77 0.452					
Sulfate	46.2 4.00					
Mercury, Total by EPA 245.1 SUB: TX104704215	Extracted: Dec-22-12 07:00 Analyzed: Dec-22-12 11:22 Units/RL: mg/L RL					
Mercury	ND 0.000200					

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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Nicholas Straccione
Project Manager

Certificate of Analysis Summary 454473

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Wed Dec-19-12 02:00 pm

Report Date: 27-DEC-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 454473-001 Field Id: MW-4 Depth: Matrix: WATER Sampled: Dec-18-12 13:00					
Metals by EPA 200.8 SUB: TX104704215	Extracted: Dec-22-12 10:00 Analyzed: Dec-25-12 05:32 Units/RL: mg/L RL					
Arsenic	0.0133 0.00200					
Barium	1.06 0.00200					
Cadmium	ND 0.00100					
Chromium	0.00899 0.00300					
Cobalt	0.00817 0.00500					
Copper	0.00517 0.00200					
Iron	11.0 0.150					
Lead	0.0153 0.00200					
Manganese	1.71 0.00200					
Molybdenum	0.00237 0.00200					
Nickel	0.00975 0.00500					
Selenium	0.00609 0.00200					
Silver	ND 0.00100					
Zinc	0.0263 0.00300					
Metals per ICP by EPA 200.7 SUB: TX104704215	Extracted: Dec-21-12 13:20 Analyzed: Dec-22-12 03:54 Units/RL: mg/L RL					
Aluminum	15.2 0.200					
Boron	0.0800 0.0500					
Calcium	272 0.200					
Magnesium	16.4 0.200					
Potassium	5.87 0.500					
Sodium	201 0.500					

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Project Name: EK Queen Pearce

Date Received in Lab: Wed Dec-19-12 02:00 pm

Report Date: 27-DEC-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 454473-001 Field Id: MW-4 Depth: Matrix: WATER Sampled: Dec-18-12 13:00					
SVOAs by EPA 8270C SUB: TX104704215	Extracted: Dec-21-12 10:09 Analyzed: Dec-21-12 17:52 Units/RL: mg/L RL					
1,2,4-Trichlorobenzene	ND 0.00515					
1,2-Dichlorobenzene	ND 0.00515					
1,3-Dichlorobenzene	ND 0.00515					
1,4-Dichlorobenzene	ND 0.00515					
2,4,5-Trichlorophenol	ND 0.00515					
2,4,6-Trichlorophenol	ND 0.00515					
2,4-Dichlorophenol	ND 0.00515					
2,4-Dimethylphenol	ND 0.00515					
2,4-Dinitrophenol	ND 0.0103					
2,4-Dinitrotoluene	ND 0.00258					
2,6-Dinitrotoluene	ND 0.00515					
2-Chloronaphthalene	ND 0.00515					
2-Chlorophenol	ND 0.00515					
2-Methylnaphthalene	ND 0.00515					
2-methylphenol	ND 0.00515					
2-Nitroaniline	ND 0.0103					
2-Nitrophenol	ND 0.00515					
3&4-Methylphenol	ND 0.00515					
3,3-Dichlorobenzidine	ND 0.0103					
3-Nitroaniline	ND 0.0103					
4,6-dinitro-2-methyl phenol	ND 0.0103					
4-Bromophenyl-phenylether	ND 0.00515					
4-chloro-3-methylphenol	ND 0.00515					
4-Chloroaniline	ND 0.0103					
4-Chlorophenyl Phenyl Ether	ND 0.00515					

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Nicholas Straccione
Project Manager

Project Id: 2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Wed Dec-19-12 02:00 pm

Report Date: 27-DEC-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id:	454473-001					
	Field Id:	MW-4					
	Depth:						
	Matrix:	WATER					
	Sampled:	Dec-18-12 13:00					
SVOAs by EPA 8270C SUB: TX104704215	Extracted:	Dec-21-12 10:09					
	Analyzed:	Dec-21-12 17:52					
	Units/RL:	mg/L RL					
4-Nitroaniline		ND 0.0103					
4-Nitrophenol		ND 0.0103					
Acenaphthene		ND 0.00515					
Acenaphthylene		ND 0.00515					
Aniline (Phenylamine, Aminobenzene)		ND 0.0103					
Anthracene		ND 0.00515					
Benzo(a)anthracene		ND 0.00515					
Benzo(a)pyrene		ND 0.00515					
Benzo(b)fluoranthene		ND 0.00515					
Benzo(g,h,i)perylene		ND 0.00515					
Benzo(k)fluoranthene		ND 0.00515					
Benzoic Acid		ND 0.0309					
Benzyl Butyl Phthalate		ND 0.00515					
bis(2-chloroethoxy) methane		ND 0.00515					
bis(2-chloroethyl) ether		ND 0.00515					
bis(2-chloroisopropyl) ether		ND 0.00515					
bis(2-ethylhexyl) phthalate		0.0121 0.00515					
Chrysene		ND 0.00515					
Dibenz(a,h)Anthracene		ND 0.00515					
Dibenzofuran		ND 0.00515					
Diethyl Phthalate		ND 0.00515					
Dimethyl Phthalate		ND 0.00515					
di-n-Butyl Phthalate		ND 0.00515					
di-n-Octyl Phthalate		ND 0.00515					
Fluoranthene		ND 0.00515					

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PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Wed Dec-19-12 02:00 pm

Report Date: 27-DEC-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 454473-001 Field Id: MW-4 Depth: Matrix: WATER Sampled: Dec-18-12 13:00					
SVOAs by EPA 8270C SUB: TX104704215	Extracted: Dec-21-12 10:09 Analyzed: Dec-21-12 17:52 Units/RL: mg/L RL					
Fluorene	ND 0.00515					
Hexachlorobenzene	ND 0.00258					
Hexachlorobutadiene	ND 0.00515					
Hexachlorocyclopentadiene	ND 0.00515					
Hexachloroethane	ND 0.00515					
Indeno(1,2,3-c,d)Pyrene	ND 0.00515					
Isophorone	ND 0.00515					
Naphthalene	ND 0.00515					
Nitrobenzene	ND 0.00515					
N-Nitrosodi-n-Propylamine	ND 0.00515					
N-Nitrosodiphenylamine	ND 0.00515					
Pentachlorophenol	ND 0.0103					
Phenanthrene	ND 0.00515					
Phenol	ND 0.0103					
Pyrene	ND 0.00515					
Pyridine	ND 0.0103					

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Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Wed Dec-19-12 02:00 pm

Report Date: 27-DEC-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 454473-001 Field Id: MW-4 Depth: Matrix: WATER Sampled: Dec-18-12 13:00					
VOAs by SW-846 8260B SUB: TX104704215	Extracted: Dec-26-12 14:00 Analyzed: Dec-26-12 14:19 Units/RL: mg/L RL					
Benzene	ND 0.00500					
Bromobenzene	ND 0.00500					
Bromochloromethane	ND 0.00500					
Bromodichloromethane	ND 0.00500					
Bromoform	ND 0.00500					
Methyl bromide	ND 0.00500					
n-Butylbenzene	ND 0.00500					
Sec-Butylbenzene	ND 0.00500					
tert-Butylbenzene	ND 0.00500					
Carbon Tetrachloride	ND 0.00500					
Chlorobenzene	ND 0.00500					
Chloroethane	ND 0.0100					
Chloroform	ND 0.00500					
Methyl Chloride	ND 0.0100					
2-Chlorotoluene	ND 0.00500					
4-Chlorotoluene	ND 0.00500					
p-Cymene (p-Isopropyltoluene)	ND 0.00500					
Dibromochloromethane	ND 0.00500					
1,2-Dibromo-3-Chloropropane	ND 0.00500					
1,2-Dibromoethane	ND 0.00500					
Methylene bromide	ND 0.00500					
1,2-Dichlorobenzene	ND 0.00500					
1,3-Dichlorobenzene	ND 0.00500					
1,4-Dichlorobenzene	ND 0.00500					
Dichlorodifluoromethane	ND 0.00500					

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Analysis Requested	Lab Id: 454473-001 Field Id: MW-4 Depth: Matrix: WATER Sampled: Dec-18-12 13:00					
VOAs by SW-846 8260B SUB: TX104704215	Extracted: Dec-26-12 14:00 Analyzed: Dec-26-12 14:19 Units/RL: mg/L RL					
1,1-Dichloroethane	ND 0.00500					
1,2-Dichloroethane	ND 0.00500					
1,1-Dichloroethene	ND 0.00500					
cis-1,2-Dichloroethylene	ND 0.00500					
trans-1,2-dichloroethylene	ND 0.00500					
1,2-Dichloropropane	ND 0.00500					
1,3-Dichloropropane	ND 0.00500					
2,2-Dichloropropane	ND 0.00500					
1,1-Dichloropropene	ND 0.00500					
cis-1,3-Dichloropropene	ND 0.00500					
trans-1,3-dichloropropene	ND 0.00500					
Ethylbenzene	ND 0.00500					
Hexachlorobutadiene	ND 0.00500					
Isopropylbenzene	ND 0.00500					
Methylene Chloride	ND 0.00500					
MTBE	ND 0.00500					
Naphthalene	ND 0.0100					
n-Propylbenzene	ND 0.00500					
Styrene	ND 0.00500					
1,1,1,2-Tetrachloroethane	ND 0.00500					
1,1,2,2-Tetrachloroethane	ND 0.00500					
Tetrachloroethylene	ND 0.00500					
Toluene	ND 0.00500					
1,2,3-Trichlorobenzene	ND 0.00500					
1,2,4-Trichlorobenzene	ND 0.00500					

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Analysis Requested	Lab Id: 454473-001 Field Id: MW-4 Depth: Matrix: WATER Sampled: Dec-18-12 13:00						
VOAs by SW-846 8260B SUB: TX104704215	Extracted: Dec-26-12 14:00 Analyzed: Dec-26-12 14:19 Units/RL: mg/L RL						
1,1,1-Trichloroethane	ND 0.00500						
1,1,2-Trichloroethane	ND 0.00500						
Trichloroethylene	ND 0.00500						
Trichlorofluoromethane	ND 0.00500						
1,2,3-Trichloropropane	ND 0.00500						
1,2,4-Trimethylbenzene	ND 0.00500						
1,3,5-Trimethylbenzene	ND 0.00500						
o-Xylene	ND 0.00500						
m,p-Xylenes	ND 0.0100						
Vinyl Chloride	ND 0.00200						

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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 affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 454473, 454473

Project ID: 2008-113

Lab Batch #: 903558

Sample: 454473-001 / SMP

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 12/21/12 17:52

SURROGATE RECOVERY STUDY

SVOAs by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorophenol	9.56	50.0	19	30-100	**
Phenol-d6	6.06	50.0	12	15-94	**
Nitrobenzene-d5	26.5	50.0	53	46-111	
2-Fluorobiphenyl	27.2	50.0	54	44-117	
2,4,6-Tribromophenol	34.5	50.0	69	48-117	
Terphenyl-D14	28.0	50.0	56	46-126	

Lab Batch #: 903670

Sample: 454473-001 / SMP

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 12/26/12 14:19

SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0490	0.0500	98	75-131	
1,2-Dichloroethane-D4	0.0466	0.0500	93	63-144	
Toluene-D8	0.0505	0.0500	101	80-117	
4-Bromofluorobenzene	0.0490	0.0500	98	74-124	

Lab Batch #: 903558

Sample: 631543-1-BLK / BLK

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 12/21/12 17:05

SURROGATE RECOVERY STUDY

SVOAs by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorophenol	15.9	50.0	32	30-100	
Phenol-d6	9.14	50.0	18	15-94	
Nitrobenzene-d5	30.4	50.0	61	46-111	
2-Fluorobiphenyl	28.2	50.0	56	44-117	
2,4,6-Tribromophenol	31.6	50.0	63	48-117	
Terphenyl-D14	48.0	50.0	96	46-126	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 454473, 454473

Project ID: 2008-113

Lab Batch #: 903670

Sample: 631735-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/26/12 13:54

SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0497	0.0500	99	75-131	
1,2-Dichloroethane-D4	0.0505	0.0500	101	63-144	
Toluene-D8	0.0505	0.0500	101	80-117	
4-Bromofluorobenzene	0.0512	0.0500	102	74-124	

Lab Batch #: 903558

Sample: 631543-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/21/12 17:20

SURROGATE RECOVERY STUDY

SVOAs by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorophenol	21.8	50.0	44	30-100	
Phenol-d6	14.4	50.0	29	15-94	
Nitrobenzene-d5	33.8	50.0	68	46-111	
2-Fluorobiphenyl	37.7	50.0	75	44-117	
2,4,6-Tribromophenol	41.0	50.0	82	48-117	
Terphenyl-D14	54.1	50.0	108	46-126	

Lab Batch #: 903670

Sample: 631735-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/26/12 12:35

SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0510	0.0500	102	75-131	
1,2-Dichloroethane-D4	0.0508	0.0500	102	63-144	
Toluene-D8	0.0502	0.0500	100	80-117	
4-Bromofluorobenzene	0.0511	0.0500	102	74-124	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 454473, 454473

Project ID: 2008-113

Lab Batch #: 903558

Sample: 631543-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/21/12 17:36

SURROGATE RECOVERY STUDY

SVOAs by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorophenol	20.1	50.0	40	30-100	
Phenol-d6	14.2	50.0	28	15-94	
Nitrobenzene-d5	52.0	50.0	104	46-111	
2-Fluorobiphenyl	30.6	50.0	61	44-117	
2,4,6-Tribromophenol	37.6	50.0	75	48-117	
Terphenyl-D14	49.0	50.0	98	46-126	

Lab Batch #: 903558

Sample: 454456-001 S / MS

Batch: 1 Matrix: Solid

Units: mg/L

Date Analyzed: 12/21/12 18:40

SURROGATE RECOVERY STUDY

SVOAs by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorophenol	29.1	50.0	58	30-100	
Phenol-d6	27.3	50.0	55	15-94	
Nitrobenzene-d5	33.3	50.0	67	46-111	
2-Fluorobiphenyl	32.6	50.0	65	44-117	
2,4,6-Tribromophenol	40.8	50.0	82	48-117	
Terphenyl-D14	40.8	50.0	82	46-126	

Lab Batch #: 903670

Sample: 454473-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/26/12 14:43

SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0518	0.0500	104	75-131	
1,2-Dichloroethane-D4	0.0493	0.0500	99	63-144	
Toluene-D8	0.0508	0.0500	102	80-117	
4-Bromofluorobenzene	0.0498	0.0500	100	74-124	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 454473, 454473

Project ID: 2008-113

Lab Batch #: 903670

Sample: 454473-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/26/12 15:08

SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0521	0.0500	104	75-131	
1,2-Dichloroethane-D4	0.0498	0.0500	100	63-144	
Toluene-D8	0.0507	0.0500	101	80-117	
4-Bromofluorobenzene	0.0492	0.0500	98	74-124	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 454473

Project ID: 2008-113

Lab Batch #: 903511

Sample: 631628-1-BKS

Matrix: Water

Date Analyzed: 12/22/2012

Date Prepared: 12/22/2012

Analyst: RKO

Reporting Units: mg/L

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Mercury, Total by EPA 245.1	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Mercury	<0.000200	0.00400	0.00390	98	85-115	

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

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

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 454473

Project ID:

2008-113

Lab Batch #: 903670

Sample: 631735-1-BKS

Matrix: Water

Date Analyzed: 12/26/2012

Date Prepared: 12/26/2012

Analyst: ZHO

Reporting Units: mg/L

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

VOAs by SW-846 8260B	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<0.00500	0.0500	0.0512	102	68-123	
Bromobenzene	<0.00500	0.0500	0.0482	96	83-124	
Bromochloromethane	<0.00500	0.0500	0.0475	95	68-119	
Bromodichloromethane	<0.00500	0.0500	0.0518	104	72-132	
Bromoform	<0.00500	0.0500	0.0459	92	65-136	
Methyl bromide	<0.00500	0.0500	0.0431	86	48-120	
n-Butylbenzene	<0.00500	0.0500	0.0557	111	82-128	
Sec-Butylbenzene	<0.00500	0.0500	0.0544	109	83-130	
tert-Butylbenzene	<0.00500	0.0500	0.0537	107	83-131	
Carbon Tetrachloride	<0.00500	0.0500	0.0515	103	68-135	
Chlorobenzene	<0.00500	0.0500	0.0504	101	78-124	
Chloroethane	<0.0100	0.0500	0.0461	92	55-120	
Chloroform	<0.00500	0.0500	0.0508	102	71-119	
Methyl Chloride	<0.0100	0.0500	0.0423	85	54-114	
2-Chlorotoluene	<0.00500	0.0500	0.0540	108	83-128	
4-Chlorotoluene	<0.00500	0.0500	0.0536	107	81-125	
p-Cymene (p-Isopropyltoluene)	<0.00500	0.0500	0.0548	110	85-129	
Dibromochloromethane	<0.00500	0.0500	0.0501	100	74-135	
1,2-Dibromo-3-Chloropropane	<0.00500	0.0500	0.0453	91	62-134	
1,2-Dibromoethane	<0.00500	0.0500	0.0484	97	77-129	
Methylene bromide	<0.00500	0.0500	0.0491	98	71-124	
1,2-Dichlorobenzene	<0.00500	0.0500	0.0507	101	81-123	
1,3-Dichlorobenzene	<0.00500	0.0500	0.0515	103	82-126	
1,4-Dichlorobenzene	<0.00500	0.0500	0.0521	104	80-119	
Dichlorodifluoromethane	<0.00500	0.0500	0.0389	78	59-121	
1,1-Dichloroethane	<0.00500	0.0500	0.0532	106	75-125	
1,2-Dichloroethane	<0.00500	0.0500	0.0490	98	64-130	
1,1-Dichloroethene	<0.00500	0.0500	0.0476	95	68-116	
cis-1,2-Dichloroethylene	<0.00500	0.0500	0.0512	102	74-130	
trans-1,2-dichloroethylene	<0.00500	0.0500	0.0492	98	64-109	
1,2-Dichloropropane	<0.00500	0.0500	0.0504	101	72-127	
1,3-Dichloropropane	<0.00500	0.0500	0.0521	104	79-133	
2,2-Dichloropropane	<0.00500	0.0500	0.0570	114	71-134	

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

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

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 454473

Project ID:

2008-113

Lab Batch #: 903670

Sample: 631735-1-BKS

Matrix: Water

Date Analyzed: 12/26/2012

Date Prepared: 12/26/2012

Analyst: ZHO

Reporting Units: mg/L

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
1,1-Dichloropropene	<0.00500	0.0500	0.0514	103	69-124	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0526	105	74-138	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0501	100	70-132	
Ethylbenzene	<0.00500	0.0500	0.0529	106	69-131	
Hexachlorobutadiene	<0.00500	0.0500	0.0568	114	74-130	
Isopropylbenzene	<0.00500	0.0500	0.0497	99	66-133	
Methylene Chloride	<0.00500	0.0500	0.0484	97	60-121	
MTBE	<0.00500	0.100	0.106	106	60-152	
Naphthalene	<0.0100	0.0500	0.0472	94	69-140	
n-Propylbenzene	<0.00500	0.0500	0.0549	110	86-129	
Styrene	<0.00500	0.0500	0.0523	105	79-128	
1,1,1,2-Tetrachloroethane	<0.00500	0.0500	0.0504	101	78-131	
1,1,2,2-Tetrachloroethane	<0.00500	0.0500	0.0489	98	80-133	
Tetrachloroethylene	<0.00500	0.0500	0.0520	104	79-122	
Toluene	<0.00500	0.0500	0.0506	101	62-132	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0522	104	76-126	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0547	109	77-127	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0535	107	72-124	
1,1,2-Trichloroethane	<0.00500	0.0500	0.0497	99	71-135	
Trichloroethylene	<0.00500	0.0500	0.0515	103	74-123	
Trichlorofluoromethane	<0.00500	0.0500	0.0589	118	70-143	
1,2,3-Trichloropropane	<0.00500	0.0500	0.0511	102	75-134	
1,2,4-Trimethylbenzene	<0.00500	0.0500	0.0541	108	79-132	
1,3,5-Trimethylbenzene	<0.00500	0.0500	0.0553	111	72-139	
o-Xylene	<0.00500	0.0500	0.0508	102	67-132	
m,p-Xylenes	<0.0100	0.100	0.106	106	69-132	
Vinyl Chloride	<0.00200	0.0500	0.0460	92	59-124	

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

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

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 454473, 454473

Analyst: JOL

Date Prepared: 12/20/2012

Project ID: 2008-113

Date Analyzed: 12/20/2012

Lab Batch ID: 903506

Sample: 631625-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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											
Chloride	<2.00	50.0	54.3	109	50.0	53.6	107	1	90-110	20	
Fluoride	<0.0200	2.00	2.16	108	2.00	2.19	110	1	90-110	20	
Nitrate as N	<0.226	2.26	2.25	100	2.26	2.16	96	4	90-110	20	
Sulfate	<2.00	50.0	54.3	109	50.0	51.5	103	5	90-110	20	

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: EK Queen Pearce

Work Order #: 454473, 454473

Analyst: MKO

Date Prepared: 12/22/2012

Project ID: 2008-113

Date Analyzed: 12/25/2012

Lab Batch ID: 903654

Sample: 631631-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Metals by EPA 200.8	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											
Arsenic	<0.00200	0.100	0.0932	93	0.100	0.0935	94	0	85-115	20	
Barium	<0.00200	0.100	0.0960	96	0.100	0.0968	97	1	85-115	20	
Cadmium	<0.00100	0.100	0.104	104	0.100	0.104	104	0	85-115	20	
Chromium	<0.00300	0.100	0.0923	92	0.100	0.0927	93	0	85-115	20	
Cobalt	<0.00500	0.100	0.0933	93	0.100	0.0952	95	2	85-115	20	
Copper	<0.00200	0.100	0.0946	95	0.100	0.0938	94	1	85-115	20	
Iron	<0.150	0.500	0.486	97	0.500	0.471	94	3	85-115	20	
Lead	<0.00200	0.100	0.0988	99	0.100	0.100	100	1	85-115	20	
Manganese	<0.00200	0.100	0.0928	93	0.100	0.0942	94	1	85-115	20	
Molybdenum	<0.00200	0.100	0.105	105	0.100	0.106	106	1	85-115	20	
Nickel	<0.00500	0.100	0.0935	94	0.100	0.0938	94	0	85-115	20	
Selenium	<0.00200	0.100	0.0874	87	0.100	0.0882	88	1	85-115	20	
Silver	<0.00100	0.0500	0.0523	105	0.0500	0.0533	107	2	85-115	20	
Zinc	<0.00300	0.100	0.0906	91	0.100	0.0913	91	1	85-115	20	

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: EK Queen Pearce

Work Order #: 454473, 454473

Analyst: MKO

Date Prepared: 12/21/2012

Project ID: 2008-113

Date Analyzed: 12/22/2012

Lab Batch ID: 903536

Sample: 631622-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Metals per ICP by EPA 200.7	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											
Aluminum	<0.200	5.00	4.85	97	5.00	4.83	97	0	85-115	20	
Boron	<0.0500	1.00	1.02	102	1.00	1.01	101	1	85-115	20	
Calcium	<0.200	25.0	23.7	95	25.0	23.3	93	2	85-115	20	
Magnesium	<0.200	25.0	24.4	98	25.0	23.9	96	2	85-115	20	
Potassium	<0.500	10.0	9.55	96	10.0	9.54	95	0	85-115	20	
Sodium	<0.500	25.0	24.0	96	25.0	23.8	95	1	85-115	20	

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: EK Queen Pearce

Work Order #: 454473, 454473

Analyst: KAN

Date Prepared: 12/21/2012

Project ID: 2008-113

Date Analyzed: 12/21/2012

Lab Batch ID: 903558

Sample: 631543-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

SVOAs by EPA 8270C	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											
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0398	80	0.0500	0.0383	77	4	56-104	25	
1,2-Dichlorobenzene	<0.00500	0.0500	0.0356	71	0.0500	0.0345	69	3	53-106	25	
1,3-Dichlorobenzene	<0.00500	0.0500	0.0361	72	0.0500	0.0368	74	2	52-105	25	
1,4-Dichlorobenzene	<0.00500	0.0500	0.0358	72	0.0500	0.0361	72	1	54-105	25	
2,4,5-Trichlorophenol	<0.00500	0.0500	0.0379	76	0.0500	0.0346	69	9	55-114	25	
2,4,6-Trichlorophenol	<0.00500	0.0500	0.0395	79	0.0500	0.0293	59	30	57-113	25	F
2,4-Dichlorophenol	<0.00500	0.0500	0.0359	72	0.0500	0.0385	77	7	60-110	25	
2,4-Dimethylphenol	<0.00500	0.0500	0.0355	71	0.0500	0.0375	75	5	50-108	25	
2,4-Dinitrophenol	<0.0100	0.0500	0.0248	50	0.0500	0.0314	63	23	52-111	25	L
2,4-Dinitrotoluene	<0.00250	0.0500	0.0439	88	0.0500	0.0418	84	5	60-116	25	
2,6-Dinitrotoluene	<0.00500	0.0500	0.0414	83	0.0500	0.0417	83	1	60-115	25	
2-Chloronaphthalene	<0.00500	0.0500	0.0303	61	0.0500	0.0233	47	26	58-105	25	LF
2-Chlorophenol	<0.00500	0.0500	0.0343	69	0.0500	0.0358	72	4	58-106	25	
2-Methylnaphthalene	<0.00500	0.0500	0.0296	59	0.0500	0.0389	78	27	57-106	25	F
2-methylphenol	<0.00500	0.0500	0.0368	74	0.0500	0.0265	53	33	52-106	25	F
2-Nitroaniline	<0.0100	0.0500	0.0387	77	0.0500	0.0332	66	15	55-120	25	
2-Nitrophenol	<0.00500	0.0500	0.0339	68	0.0500	0.0394	79	15	57-105	25	
3&4-Methylphenol	<0.00500	0.0500	0.0410	82	0.0500	0.0251	50	48	23-140	25	F
3,3-Dichlorobenzidine	<0.0100	0.0500	0.0434	87	0.0500	0.0463	93	6	36-123	25	
3-Nitroaniline	<0.0100	0.0500	0.0391	78	0.0500	0.0426	85	9	49-120	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

Project Name: EK Queen Pearce

Work Order #: 454473, 454473

Analyst: KAN

Date Prepared: 12/21/2012

Project ID: 2008-113

Date Analyzed: 12/21/2012

Lab Batch ID: 903558

Sample: 631543-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

SVOAs by EPA 8270C	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											
4,6-dinitro-2-methyl phenol	<0.0100	0.0500	0.0309	62	0.0500	0.0346	69	11	57-119	25	
4-Bromophenyl-phenylether	<0.00500	0.0500	0.0411	82	0.0500	0.0314	63	27	58-112	25	F
4-chloro-3-methylphenol	<0.00500	0.0500	0.0304	61	0.0500	0.0412	82	30	58-116	25	F
4-Chloroaniline	<0.0100	0.0500	0.0355	71	0.0500	0.0367	73	3	2-123	25	
4-Chlorophenyl Phenyl Ether	<0.00500	0.0500	0.0399	80	0.0500	0.0353	71	12	59-109	25	
4-Nitroaniline	<0.0100	0.0500	0.0393	79	0.0500	0.0365	73	7	52-118	25	
4-Nitrophenol	<0.0100	0.0500	0.0119	24	0.0500	0.0145	29	20	18-104	25	
Acenaphthene	<0.00500	0.0500	0.0390	78	0.0500	0.0372	74	5	54-114	25	
Acenaphthylene	<0.00500	0.0500	0.0402	80	0.0500	0.0435	87	8	53-113	25	
Aniline (Phenylamine, Aminobenzene)	<0.0100	0.0500	0.0335	67	0.0500	0.0355	71	6	35-104	25	
Anthracene	<0.00500	0.0500	0.0424	85	0.0500	0.0375	75	12	56-116	25	
Benzo(a)anthracene	<0.00500	0.0500	0.0420	84	0.0500	0.0412	82	2	59-116	25	
Benzo(a)pyrene	<0.00500	0.0500	0.0410	82	0.0500	0.0415	83	1	58-118	25	
Benzo(b)fluoranthene	<0.00500	0.0500	0.0394	79	0.0500	0.0393	79	0	54-123	25	
Benzo(g,h,i)perylene	<0.00500	0.0500	0.0428	86	0.0500	0.0423	85	1	47-129	25	
Benzo(k)fluoranthene	<0.00500	0.0500	0.0427	85	0.0500	0.0418	84	2	52-122	25	
Benzoic Acid	<0.0300	0.150	<0.0300	0	0.150	<0.0300	0	NC	4-113	25	L
Benzyl Butyl Phthalate	<0.00500	0.0500	0.0540	108	0.0500	0.0547	109	1	57-122	25	
bis(2-chloroethoxy) methane	<0.00500	0.0500	0.0318	64	0.0500	0.0341	68	7	53-112	25	
bis(2-chloroethyl) ether	<0.00500	0.0500	0.0321	64	0.0500	0.0341	68	6	57-108	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

Project Name: EK Queen Pearce

Work Order #: 454473, 454473

Analyst: KAN

Date Prepared: 12/21/2012

Project ID: 2008-113

Date Analyzed: 12/21/2012

Lab Batch ID: 903558

Sample: 631543-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

SVOAs by EPA 8270C	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											
bis(2-chloroisopropyl) ether	<0.00500	0.0500	0.0316	63	0.0500	0.0330	66	4	54-111	25	
bis(2-ethylhexyl) phthalate	<0.00500	0.0500	0.0496	99	0.0500	0.0452	90	9	59-119	25	
Chrysene	<0.00500	0.0500	0.0425	85	0.0500	0.0535	107	23	58-116	25	
Dibenz(a,h)Anthracene	<0.00500	0.0500	0.0434	87	0.0500	0.0424	85	2	46-131	25	
Dibenzofuran	<0.00500	0.0500	0.0393	79	0.0500	0.0436	87	10	56-111	25	
Diethyl Phthalate	<0.00500	0.0500	0.0410	82	0.0500	0.0387	77	6	62-114	25	
Dimethyl Phthalate	<0.00500	0.0500	0.0390	78	0.0500	0.0357	71	9	59-113	25	
di-n-Butyl Phthalate	<0.00500	0.0500	0.0466	93	0.0500	0.0312	62	40	60-118	25	F
di-n-Octyl Phthalate	<0.00500	0.0500	0.0417	83	0.0500	0.0532	106	24	49-129	25	
Fluoranthene	<0.00500	0.0500	0.0648	130	0.0500	0.0331	66	65	55-120	25	HF
Fluorene	<0.00500	0.0500	0.0395	79	0.0500	0.0341	68	15	56-114	25	
Hexachlorobenzene	<0.00250	0.0500	0.0401	80	0.0500	0.0336	67	18	60-109	25	
Hexachlorobutadiene	<0.00500	0.0500	0.0379	76	0.0500	0.0378	76	0	52-107	25	
Hexachlorocyclopentadiene	<0.00500	0.0500	0.0429	86	0.0500	0.0365	73	16	32-115	25	
Hexachloroethane	<0.00500	0.0500	0.0428	86	0.0500	0.0316	63	30	46-115	25	F
Indeno(1,2,3-c,d)Pyrene	<0.00500	0.0500	0.0428	86	0.0500	0.0422	84	1	44-132	25	
Isophorone	<0.00500	0.0500	0.0292	58	0.0500	0.0408	82	33	57-107	25	F
Naphthalene	<0.00500	0.0500	0.0369	74	0.0500	0.0370	74	0	53-110	25	
Nitrobenzene	<0.00500	0.0500	0.0306	61	0.0500	0.0463	93	41	56-107	25	F
N-Nitrosodi-n-Propylamine	<0.00500	0.0500	0.0405	81	0.0500	0.0380	76	6	21-137	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

Project Name: EK Queen Pearce

Work Order #: 454473, 454473

Analyst: KAN

Date Prepared: 12/21/2012

Project ID: 2008-113

Date Analyzed: 12/21/2012

Lab Batch ID: 903558

Sample: 631543-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

SVOAs by EPA 8270C	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											
N-Nitrosodiphenylamine	<0.00500	0.0500	0.0389	78	0.0500	0.0415	83	6	50-121	25	
Pentachlorophenol	<0.0100	0.0500	0.0397	79	0.0500	0.0363	73	9	36-132	25	
Phenanthrene	<0.00500	0.0500	0.0405	81	0.0500	0.0388	78	4	56-116	25	
Phenol	<0.0100	0.0500	0.0163	33	0.0500	0.0164	33	1	19-89	25	
Pyrene	<0.00500	0.0500	0.0595	119	0.0500	0.0502	100	17	57-119	25	
Pyridine	<0.0100	0.0500	0.0228	46	0.0500	0.0180	36	24	5-94	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

Project Name: EK Queen Pearce

Work Order #: 454473

Lab Batch #: 903506

Date Analyzed: 12/20/2012

Date Prepared: 12/20/2012

Project ID: 2008-113

Analyst: JOL

QC- Sample ID: 454411-001 S

Batch #: 1

Matrix: Waste Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	181	50.0	213	64	80-120	X
Fluoride	1.23	2.00	3.11	94	80-120	
Nitrate as N	0.798	2.26	3.43	116	80-120	
Sulfate	556	50.0	545	0	80-120	X

Lab Batch #: 903654

Date Analyzed: 12/25/2012

Date Prepared: 12/22/2012

Analyst: MKO

QC- Sample ID: 454373-001 S

Batch #: 1

Matrix: Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Metals by EPA 200.8	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Arsenic	0.0581	0.100	0.147	89	70-130	
Barium	0.109	0.100	0.212	103	70-130	
Cadmium	<0.00100	0.100	0.0965	97	70-130	
Chromium	<0.00300	0.100	0.0961	96	70-130	
Cobalt	<0.00500	0.100	0.0918	92	70-130	
Copper	0.0100	0.100	0.0968	87	70-130	
Iron	<0.150	0.500	0.516	103	70-130	
Lead	<0.00200	0.100	0.103	103	70-130	
Manganese	0.00224	0.100	0.0967	94	70-130	
Molybdenum	0.0215	0.100	0.127	106	70-130	
Nickel	<0.00500	0.100	0.0894	89	70-130	
Selenium	0.0150	0.100	0.104	89	70-130	
Silver	<0.00100	0.0500	0.0475	95	70-130	
Zinc	<0.00300	0.100	0.0847	85	70-130	

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

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

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 454473

Lab Batch #: 903558

Date Analyzed: 12/21/2012

QC- Sample ID: 454456-001 S

Reporting Units: mg/L

Date Prepared: 12/21/2012

Batch #: 1

Project ID: 2008-113

Analyst: KAN

Matrix: Solid

MATRIX / MATRIX SPIKE RECOVERY STUDY						
SVOAs by SW-846 8270C	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
1,2,4-Trichlorobenzene	<0.0250	0.250	0.174	70	56-104	
1,2-Dichlorobenzene	<0.0250	0.250	0.165	66	53-106	
1,3-Dichlorobenzene	<0.0250	0.250	0.172	69	52-105	
1,4-Dichlorobenzene	<0.0250	0.250	0.169	68	54-105	
2,4,5-Trichlorophenol	<0.0250	0.250	0.170	68	55-114	
2,4,6-Trichlorophenol	<0.0250	0.250	0.160	64	57-113	
2,4-Dichlorophenol	<0.0250	0.250	0.180	72	60-110	
2,4-Dimethylphenol	<0.0250	0.250	0.179	72	50-108	
2,4-Dinitrophenol	<0.0500	0.250	0.220	88	52-111	
2,4-Dinitrotoluene	<0.0125	0.250	0.200	80	60-116	
2,6-Dinitrotoluene	<0.0250	0.250	0.192	77	60-115	
2-Chloronaphthalene	<0.0250	0.250	0.133	53	58-105	X
2-Chlorophenol	<0.0250	0.250	0.177	71	58-106	
2-Methylnaphthalene	<0.0250	0.250	0.177	71	57-106	
2-methylphenol	<0.0250	0.250	0.175	70	52-106	
2-Nitroaniline	<0.0500	0.250	0.192	77	55-120	
2-Nitrophenol	<0.0250	0.250	0.188	75	57-105	
3&4-Methylphenol	<0.0250	0.250	0.176	70	23-140	
3,3-Dichlorobenzidine	<0.0500	0.250	0.196	78	36-123	
3-Nitroaniline	<0.0500	0.250	0.202	81	49-120	
4,6-dinitro-2-methyl phenol	<0.0500	0.250	0.219	88	57-119	
4-Bromophenyl-phenylether	<0.0250	0.250	0.204	82	58-112	
4-chloro-3-methylphenol	<0.0250	0.250	0.191	76	58-116	
4-Chloroaniline	<0.0500	0.250	0.161	64	2-123	
4-Chlorophenyl Phenyl Ether	<0.0250	0.250	0.180	72	59-109	
4-Nitroaniline	<0.0500	0.250	0.194	78	52-118	
4-Nitrophenol	<0.0500	0.250	0.106	42	18-104	
Acenaphthene	<0.0250	0.250	0.178	71	54-114	
Acenaphthylene	<0.0250	0.250	0.185	74	53-113	
Aniline (Phenylamine, Aminobenzene)	<0.0500	0.250	0.168	67	35-104	
Anthracene	<0.0250	0.250	0.188	75	56-116	
Benzo(a)anthracene	<0.0250	0.250	0.208	83	59-116	
Benzo(a)pyrene	<0.0250	0.250	0.198	79	58-118	
Benzo(b)fluoranthene	<0.0250	0.250	0.216	86	54-123	

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

Project Name: EK Queen Pearce

Work Order #: 454473

Lab Batch #: 903558

Date Analyzed: 12/21/2012

QC- Sample ID: 454456-001 S

Reporting Units: mg/L

Date Prepared: 12/21/2012

Batch #: 1

Project ID: 2008-113

Analyst: KAN

Matrix: Solid

MATRIX / MATRIX SPIKE RECOVERY STUDY						
SVOAs by SW-846 8270C		Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Benzo(g,h,i)perylene	<0.0250	0.250	0.203	81	47-129	
Benzo(k)fluoranthene	<0.0250	0.250	0.172	69	52-122	
Benzoic Acid	<0.150	0.750	0.494	66	4-113	
Benzyl Butyl Phthalate	<0.0250	0.250	0.217	87	57-122	
bis(2-chloroethoxy) methane	<0.0250	0.250	0.159	64	53-112	
bis(2-chloroethyl) ether	<0.0250	0.250	0.161	64	57-108	
bis(2-chloroisopropyl) ether	<0.0250	0.250	0.239	96	54-111	
bis(2-ethylhexyl) phthalate	<0.0250	0.250	0.225	90	59-119	
Chrysene	<0.0250	0.250	0.177	71	58-116	
Dibenz(a,h)Anthracene	<0.0250	0.250	0.205	82	46-131	
Dibenzofuran	<0.0250	0.250	0.184	74	56-111	
Diethyl Phthalate	<0.0250	0.250	0.187	75	62-114	
Dimethyl Phthalate	<0.0250	0.250	0.184	74	59-113	
di-n-Butyl Phthalate	<0.0250	0.250	0.186	74	60-118	
di-n-Octyl Phthalate	<0.0250	0.250	0.255	102	49-129	
Fluoranthene	<0.0250	0.250	0.241	96	55-120	
Fluorene	<0.0250	0.250	0.180	72	56-114	
Hexachlorobenzene	<0.0125	0.250	0.202	81	60-109	
Hexachlorobutadiene	<0.0250	0.250	0.172	69	52-107	
Hexachlorocyclopentadiene	<0.0250	0.250	0.173	69	32-115	
Hexachloroethane	<0.0250	0.250	0.174	70	46-115	
Indeno(1,2,3-c,d)Pyrene	<0.0250	0.250	0.202	81	44-132	
Isophorone	<0.0250	0.250	0.171	68	57-107	
Naphthalene	<0.0250	0.250	0.169	68	53-110	
Nitrobenzene	<0.0250	0.250	0.170	68	56-107	
N-Nitrosodi-n-Propylamine	<0.0250	0.250	0.173	69	21-137	
N-Nitrosodiphenylamine	<0.0250	0.250	0.210	84	50-121	
Pentachlorophenol	<0.0500	0.250	0.217	87	36-132	
Phenanthrene	<0.0250	0.250	0.167	67	56-116	
Phenol	<0.0500	0.250	0.145	58	19-89	
Pyrene	<0.0250	0.250	0.213	85	57-119	
Pyridine	<0.0500	0.250	0.110	44	5-94	

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

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

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 454473

Project ID: 2008-113

Lab Batch ID: 903511

QC- Sample ID: 454566-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 12/22/2012

Date Prepared: 12/22/2012

Analyst: RKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Mercury, Total by EPA 245.1	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
Analytes											
Mercury	<0.000200	0.00100	0.000888	89	0.00100	0.000880	88	1	70-130	20	

Lab Batch ID: 903654

QC- Sample ID: 454669-002 S

Batch #: 1 Matrix: Water

Date Analyzed: 12/25/2012

Date Prepared: 12/22/2012

Analyst: MKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Metals by EPA 200.8	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
Analytes											
Arsenic	0.519	0.100	0.577	58	0.100	0.602	83	4	70-130	20	X
Barium	0.0750	0.100	0.188	113	0.100	0.199	124	6	70-130	20	
Cadmium	<0.00100	0.100	0.0851	85	0.100	0.0850	85	0	70-130	20	
Chromium	0.00656	0.100	0.0986	92	0.100	0.106	99	7	70-130	20	
Cobalt	<0.00500	0.100	0.0891	89	0.100	0.0950	95	6	70-130	20	
Copper	0.0326	0.100	0.113	80	0.100	0.121	88	7	70-130	20	
Iron	<0.150	0.500	0.509	102	0.500	0.545	109	7	70-130	20	
Lead	<0.00200	0.100	0.105	105	0.100	0.110	110	5	70-130	20	
Manganese	<0.00200	0.100	0.0939	94	0.100	0.102	102	8	70-130	20	
Molybdenum	0.139	0.100	0.235	96	0.100	0.239	100	2	70-130	20	
Nickel	<0.00500	0.100	0.0869	87	0.100	0.0919	92	6	70-130	20	
Selenium	0.0126	0.100	0.0878	75	0.100	0.0944	82	7	70-130	20	
Silver	<0.00100	0.0500	0.0431	86	0.0500	0.0440	88	2	70-130	20	
Zinc	0.0349	0.100	0.112	77	0.100	0.114	79	2	70-130	20	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 454473

Project ID: 2008-113

Lab Batch ID: 903536

QC- Sample ID: 454052-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 12/22/2012

Date Prepared: 12/21/2012

Analyst: MKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Metals per ICP by EPA 200.7 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
Aluminum	<0.200	5.00	4.95	99	5.00	4.91	98	1	70-130	20	
Boron	0.0689	1.00	1.08	101	1.00	1.07	100	1	70-130	20	
Calcium	12.1	25.0	36.2	96	25.0	35.9	95	1	70-130	20	
Magnesium	1.96	25.0	26.2	97	25.0	25.5	94	3	70-130	20	
Potassium	3.97	10.0	14.2	102	10.0	13.9	99	2	70-130	20	
Sodium	8.27	25.0	32.8	98	25.0	32.8	98	0	70-130	20	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 454473

Project ID: 2008-113

Lab Batch ID: 903670

QC- Sample ID: 454473-001 S

Batch #: 1 **Matrix:** Water

Date Analyzed: 12/26/2012

Date Prepared: 12/26/2012

Analyst: ZHO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
VOAs by SW-846 8260B 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	<0.00500	0.0500	0.0503	101	0.0500	0.0532	106	6	66-142	25	
Bromobenzene	<0.00500	0.0500	0.0473	95	0.0500	0.0501	100	6	75-125	25	
Bromochloromethane	<0.00500	0.0500	0.0481	96	0.0500	0.0506	101	5	60-140	25	
Bromodichloromethane	<0.00500	0.0500	0.0507	101	0.0500	0.0552	110	8	75-125	25	
Bromoform	<0.00500	0.0500	0.0454	91	0.0500	0.0493	99	8	75-125	25	
Methyl bromide	<0.00500	0.0500	0.0425	85	0.0500	0.0492	98	15	60-140	25	
n-Butylbenzene	<0.00500	0.0500	0.0555	111	0.0500	0.0575	115	4	75-125	25	
Sec-Butylbenzene	<0.00500	0.0500	0.0541	108	0.0500	0.0557	111	3	75-125	25	
tert-Butylbenzene	<0.00500	0.0500	0.0537	107	0.0500	0.0551	110	3	75-125	25	
Carbon Tetrachloride	<0.00500	0.0500	0.0501	100	0.0500	0.0553	111	10	62-125	25	
Chlorobenzene	<0.00500	0.0500	0.0496	99	0.0500	0.0512	102	3	60-133	25	
Chloroethane	<0.0100	0.0500	0.0443	89	0.0500	0.0469	94	6	60-140	25	
Chloroform	<0.00500	0.0500	0.0512	102	0.0500	0.0526	105	3	70-130	25	
Methyl Chloride	<0.0100	0.0500	0.0405	81	0.0500	0.0468	94	14	60-140	25	
2-Chlorotoluene	<0.00500	0.0500	0.0524	105	0.0500	0.0535	107	2	73-125	25	
4-Chlorotoluene	<0.00500	0.0500	0.0515	103	0.0500	0.0533	107	3	74-125	25	
p-Cymene (p-Isopropyltoluene)	<0.00500	0.0500	0.0546	109	0.0500	0.0565	113	3	75-125	25	
Dibromochloromethane	<0.00500	0.0500	0.0480	96	0.0500	0.0504	101	5	73-125	25	
1,2-Dibromo-3-Chloropropane	<0.00500	0.0500	0.0490	98	0.0500	0.0506	101	3	59-125	25	
1,2-Dibromoethane	<0.00500	0.0500	0.0465	93	0.0500	0.0509	102	9	73-125	25	
Methylene bromide	<0.00500	0.0500	0.0492	98	0.0500	0.0548	110	11	69-127	25	
1,2-Dichlorobenzene	<0.00500	0.0500	0.0509	102	0.0500	0.0539	108	6	75-125	25	
1,3-Dichlorobenzene	<0.00500	0.0500	0.0509	102	0.0500	0.0532	106	4	75-125	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 454473

Project ID: 2008-113

Lab Batch ID: 903670

QC- Sample ID: 454473-001 S

Batch #: 1 **Matrix:** Water

Date Analyzed: 12/26/2012

Date Prepared: 12/26/2012

Analyst: ZHO

Reporting Units: mg/L

VOAs by SW-846 8260B 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
1,4-Dichlorobenzene	<0.00500	0.0500	0.0507	101	0.0500	0.0527	105	4	75-125	25	
Dichlorodifluoromethane	<0.00500	0.0500	0.0399	80	0.0500	0.0440	88	10	70-130	25	
1,1-Dichloroethane	<0.00500	0.0500	0.0526	105	0.0500	0.0570	114	8	72-125	25	
1,2-Dichloroethane	<0.00500	0.0500	0.0485	97	0.0500	0.0530	106	9	68-127	25	
1,1-Dichloroethene	<0.00500	0.0500	0.0481	96	0.0500	0.0512	102	6	59-172	25	
cis-1,2-Dichloroethylene	<0.00500	0.0500	0.0510	102	0.0500	0.0543	109	6	75-125	25	
trans-1,2-dichloroethylene	<0.00500	0.0500	0.0503	101	0.0500	0.0526	105	4	75-125	25	
1,2-Dichloropropane	<0.00500	0.0500	0.0492	98	0.0500	0.0543	109	10	74-125	25	
1,3-Dichloropropane	<0.00500	0.0500	0.0489	98	0.0500	0.0530	106	8	75-125	25	
2,2-Dichloropropane	<0.00500	0.0500	0.0510	102	0.0500	0.0591	118	15	75-125	25	
1,1-Dichloropropene	<0.00500	0.0500	0.0496	99	0.0500	0.0544	109	9	75-125	25	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0512	102	0.0500	0.0551	110	7	74-125	25	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0484	97	0.0500	0.0529	106	9	66-125	25	
Ethylbenzene	<0.00500	0.0500	0.0511	102	0.0500	0.0527	105	3	75-125	25	
Hexachlorobutadiene	<0.00500	0.0500	0.0622	124	0.0500	0.0639	128	3	75-125	25	X
Isopropylbenzene	<0.00500	0.0500	0.0477	95	0.0500	0.0500	100	5	75-125	25	
Methylene Chloride	<0.00500	0.0500	0.0485	97	0.0500	0.0532	106	9	75-125	25	
MTBE	<0.00500	0.100	0.105	105	0.100	0.117	117	11	65-135	25	
Naphthalene	<0.0100	0.0500	0.0519	104	0.0500	0.0577	115	11	70-130	25	
n-Propylbenzene	<0.00500	0.0500	0.0538	108	0.0500	0.0555	111	3	75-125	25	
Styrene	<0.00500	0.0500	0.0513	103	0.0500	0.0531	106	3	75-125	25	
1,1,1,2-Tetrachloroethane	<0.00500	0.0500	0.0490	98	0.0500	0.0511	102	4	72-125	25	
1,1,2,2-Tetrachloroethane	<0.00500	0.0500	0.0474	95	0.0500	0.0505	101	6	74-125	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 454473

Project ID: 2008-113

Lab Batch ID: 903670

QC- Sample ID: 454473-001 S

Batch #: 1 **Matrix:** Water

Date Analyzed: 12/26/2012

Date Prepared: 12/26/2012

Analyst: ZHO

Reporting Units: mg/L

VOAs by SW-846 8260B 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
Tetrachloroethylene	<0.00500	0.0500	0.0489	98	0.0500	0.0511	102	4	71-125	25	
Toluene	<0.00500	0.0500	0.0512	102	0.0500	0.0534	107	4	59-139	25	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0596	119	0.0500	0.0644	129	8	75-137	25	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0603	121	0.0500	0.0623	125	3	75-135	25	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0520	104	0.0500	0.0563	113	8	75-125	25	
1,1,2-Trichloroethane	<0.00500	0.0500	0.0502	100	0.0500	0.0538	108	7	75-127	25	
Trichloroethylene	<0.00500	0.0500	0.0515	103	0.0500	0.0541	108	5	62-137	25	
Trichlorofluoromethane	<0.00500	0.0500	0.0597	119	0.0500	0.0642	128	7	60-140	25	
1,2,3-Trichloropropane	<0.00500	0.0500	0.0492	98	0.0500	0.0534	107	8	75-125	25	
1,2,4-Trimethylbenzene	<0.00500	0.0500	0.0534	107	0.0500	0.0544	109	2	75-125	25	
1,3,5-Trimethylbenzene	<0.00500	0.0500	0.0534	107	0.0500	0.0553	111	3	70-125	25	
o-Xylene	<0.00500	0.0500	0.0497	99	0.0500	0.0516	103	4	75-125	25	
m,p-Xylenes	<0.0100	0.100	0.102	102	0.100	0.103	103	1	75-125	25	
Vinyl Chloride	<0.00200	0.0500	0.0435	87	0.0500	0.0501	100	14	60-140	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Project Name: EK Queen Pearce

Work Order #: 454473

Lab Batch #: 903414

Project ID: 2008-113

Date Analyzed: 12/20/2012 14:44

Date Prepared: 12/20/2012

Analyst: ALA

QC- Sample ID: 454473-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY

Alkalinity by SM2320B	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Alkalinity, Total (as CaCO ₃)	172	172	0	20	
Alkalinity, Bicarbonate (as CaCO ₃)	172	172	0	20	
Alkalinity, Carbonate (as CaCO ₃)	<4.00	<4.00	0	20	U

Lab Batch #: 903414

Date Analyzed: 12/20/2012 16:03

Date Prepared: 12/20/2012

Analyst: ALA

QC- Sample ID: 454484-004 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY

Alkalinity by SM2320B	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Alkalinity, Bicarbonate (as CaCO ₃)	250	252	1	20	
Alkalinity, Carbonate (as CaCO ₃)	<4.00	<4.00	0	20	U

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

Xenco Laboratories

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 J. Arguijo

Project Name: EK Queen Pearce

Company Name **Basin Environmental Service Technologies, LLC**

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: (575)396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:

e-mail: bjarguijo@basinenv.com

(lab use only) ORDER #: 454473

[illegible]**Special Instructions:**

★ ★ See attached sheet for detailed list of analyses required ★ ★

Laboratory Comments:	

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star		
Temperature Upon Receipt:	14.0	°C



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 12/19/2012 02:00:00 PM

Work Order #: 454473

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	14
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____

Date: 12/19/2012

Checklist reviewed by: _____

Date: 12/19/2012

Analytical Report 456943

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

EK Queen Pearce

#2008-113

07-FEB-13

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

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

Xenco-Lakeland: Florida (E84098)

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

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

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

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

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



07-FEB-13

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

Reference: XENCO Report No(s): **456943**
EK Queen Pearce
Project Address: Lovington

Ben Arguijo:

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(s) 456943. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 456943 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 456943



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-4	W	02-01-13 12:40		456943-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: #2008-113
Work Order Number(s): 456943

Report Date: 07-FEB-13
Date Received: 02/04/2013

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 456943

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: #2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Mon Feb-04-13 11:50 am

Report Date: 07-FEB-13

Project Location: Lovington

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 456943-001 Field Id: MW-4 Depth: Matrix: WATER Sampled: Feb-01-13 12:40						
BTEX by EPA 8021B	Extracted: Feb-06-13 09:00 Analyzed: Feb-06-13 13:24 Units/RL: mg/L RL						
Benzene	ND 0.00100						
Toluene	ND 0.00200						
Ethylbenzene	ND 0.00100						
m_p-Xylenes	ND 0.00200						
o-Xylene	ND 0.00100						
Total Xylenes	ND 0.00100						
Total BTEX	ND 0.00100						

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

Nicholas Straccione
Project Manager

Flagging Criteria

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 456943,

Project ID: #2008-113

Lab Batch #: 906400

Sample: 456943-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 02/06/13 13:24		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0277	0.0300	92	80-120
4-Bromofluorobenzene		0.0290	0.0300	97	80-120

Lab Batch #: 906400

Sample: 633456-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 02/06/13 10:38		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0254	0.0300	85	80-120
4-Bromofluorobenzene		0.0252	0.0300	84	80-120

Lab Batch #: 906400

Sample: 633456-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 02/06/13 10:21		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0345	0.0300	115	80-120
4-Bromofluorobenzene		0.0312	0.0300	104	80-120

Lab Batch #: 906400

Sample: 633456-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 02/06/13 10:04		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0292	0.0300	97	80-120
4-Bromofluorobenzene		0.0283	0.0300	94	80-120

Lab Batch #: 906400

Sample: 456863-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L Date Analyzed: 02/06/13 11:11		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0281	0.0300	94	80-120
4-Bromofluorobenzene		0.0311	0.0300	104	80-120

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 456943,

Project ID: #2008-113

Lab Batch #: 906400

Sample: 456863-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/06/13 11:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: EK Queen Pearce

Work Order #: 456943

Analyst: KEB

Date Prepared: 02/06/2013

Project ID: #2008-113

Date Analyzed: 02/06/2013

Lab Batch ID: 906400

Sample: 633456-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.106	106	0.100	0.0849	85	22	70-125	25	
Toluene	<0.00200	0.100	0.107	107	0.100	0.0846	85	23	70-125	25	
Ethylbenzene	<0.00100	0.100	0.108	108	0.100	0.0846	85	24	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.213	107	0.200	0.166	83	25	70-131	25	
o-Xylene	<0.00100	0.100	0.105	105	0.100	0.0842	84	22	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: EK Queen Pearce

Work Order # : 456943

Project ID: #2008-113

Lab Batch ID: 906400

QC- Sample ID: 456863-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 02/06/2013

Date Prepared: 02/06/2013

Analyst: KEB

Reporting Units: mg/L

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0886	89	0.100	0.102	102	14	70-125	25	
Toluene	<0.00200	0.100	0.0840	84	0.100	0.104	104	21	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0854	85	0.100	0.103	103	19	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.165	83	0.200	0.199	100	19	70-131	25	
o-Xylene	<0.00100	0.100	0.0818	82	0.100	0.102	102	22	71-133	25	

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

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

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Page 1 of 1

LAB W.O # : 456943
Field billable Hrs :

Container Type Codes

VA Vial Amber	ES Encore Sampler
VC Vial Clear	TS TerraCore Sampler
VP Vial Pre-preserved	AC Air Canister
GA Glass Amber	TB Tedlar Bag
GC Glass Clear	ZB Zip Lock Bag
PA Plastic Amber	PC Plastic Clear
PC Plastic Clear	
Other	

Size(s): 2oz, 4oz, 8oz, 16oz, 32oz, 1Gal

* Preservative Type Codes

A. None
B. HNO_3
C. H_2SO_4
D. NaOH
E. HCl
F. MeOH
G. $\text{Na}_2\text{S}_2\text{O}_3$
H. NaHSO_4
I. Ice
J. MCAA
K. $\text{ZnAc} \& \text{NaOH}$
L. Asbc Acid & NaOH

△ Matrix Type Codes

Material Type Codes	
GW Ground Water	S Soil/Sediment/Solid
WW Waste Water	W Wipe
DW Drinking Water	A Air
SW Surface Water	O Oil
OW Ocean/Sea Water	T Tissue
PL Product-Liquid	U Urine
PS Product-Solid	B Blood
SL Sludge	

REMARKS

Company: Basin Environmental Service Technologies, LLC		Phone: (575)396-2378
Address: 3100 Plains Hwy.		Fax: (575)396-1429
City: Lovington	State: NM	Zip: 88260
PM/Attn: Ben Arguijo	Email: bjarguijo@basinenv.com	
Project ID: EK Queen Pearce #2008-113		SRS PO#: PAA-J. Henry
Invoice To: Jason Henry Plains All American		Quote #:
Sampler Signature: 		Circle One Event: Daily Weekly Monthly <u>Quarterly</u> Semi-Annual Annual N/A

# Sample	Sample ID	Collect Date	Collect Time	Matrix Code	Field Filtered	Integrity OK (Y/N)	Location Contained
1	MW-4	2/1/13	12:40	GW			3
2							
3							
4							
5							
6							
7							
8							
9							
0							

TAT Work Days = D Need results by: _____ Time: _____

Std (5-7D) 5Hrs 1D 2D 3D 4D **5D** 7D 10D 14D Other

[illegible]

Reg. Program / Clean-up Site						STATE or Carls & Regs				CA/QC Level & Certification				EDDs		COC & Labels		Cagers Temp °C		Lab Use Only		YES	NO	N/A													
CTLs	TRRP	DW	NPDES	LPST	DryCln	FL	TX	GA	NC	SC	NJ	PA	OK	LA	1	2	3	4	CLP	AFCEE	QAPP	ADaPT	SEDD	ERPIMS	Match	Incomplete			19.6	35.5	Non-Conformances found?						
Other:						AL	NM	Other:							NELAC	DoD-ELAP	Other:					XLS	Other:		Absent	Unclear											
						Relinquished by				Affiliation				Date		Time		Received by		Affiliation		Date		Time						Received on Wet Ice?							
1						Theresa King				Bash Env				2-1-13		15:35		K Butth		MS		2/1/13		3:50pm						Labeled with proper preservatives?							
2																		Shawne Smith		Xenco		2/4/13		11:50						Received within holding time?							
3																														Custody seals intact?							
4																														VOCs rec'd w/o headspace?							
																																Proper containers used?					
																																pH verified-acceptable, excl VOCs?					
																																Received on time to meet HTs?					

B&A Laboratories: Hobbs 575-392-7550 Dallas 214-902-0300 Houston 281-242-4200 Odessa 432-563-1800 San Antonio 210-509-3334 Phoenix 602-437-0330
FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

C.O.C. Serial #

Execution of this document by client creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full. *Revision Date: Nov 12, 2009*

Revision Date: Nov 12, 2009



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 02/04/2013 11:50:00 AM

Work Order #: 456943

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	5.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____

Date: _____

Checklist reviewed by: _____

Date: _____

Analytical Report 462519

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

E.K. Queen 6 Inch Pearce

2008-113

09-MAY-13

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

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

Xenco-Lakeland: Florida (E84098)

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

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

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

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

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



09-MAY-13

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

Reference: XENCO Report No(s): **462519**
E.K. Queen 6 Inch Pearce
Project Address: Lea County, NM

Ben Arguijo:

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(s) 462519. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 462519 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,

Kelsey Brooks

Project Manager

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Sample Cross Reference 462519



PLAINS ALL AMERICAN EH&S, Midland, TX

E.K. Queen 6 Inch Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	05-03-13 09:00		462519-001
MW-2	W	05-03-13 10:00		462519-002
MW-3	W	05-03-13 11:00		462519-003
MW-4	W	05-03-13 12:00		462519-004



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: E.K. Queen 6 Inch Pearce



Project ID: 2008-113

Work Order Number(s): 462519

Report Date: 09-MAY-13

Date Received: 05/03/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 462519

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Ben Arguijo

Project Location: Lea County, NM

Project Name: E.K. Queen 6 Inch Pearce

Date Received in Lab: Fri May-03-13 02:30 pm

Report Date: 09-MAY-13

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i> <i>Field Id:</i> <i>Depth:</i> <i>Matrix:</i> <i>Sampled:</i>	462519-001 MW-1 WATER May-03-13 09:00	462519-002 MW-2 WATER May-03-13 10:00	462519-003 MW-3 WATER May-03-13 11:00	462519-004 MW-4 WATER May-03-13 12:00		
BTEX by EPA 8021B	<i>Extracted:</i> <i>Analyzed:</i> <i>Units/RL:</i>	May-08-13 08:00 May-08-13 15:14 mg/L RL	May-08-13 08:00 May-08-13 15:31 mg/L RL	May-08-13 08:00 May-08-13 17:36 mg/L RL	May-08-13 08:00 May-08-13 15:47 mg/L RL		
Benzene		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
Toluene		ND 0.00200	ND 0.00200	ND 0.00200	ND 0.00200		
Ethylbenzene		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
m_p-Xylenes		ND 0.00200	ND 0.00200	ND 0.00200	ND 0.00200		
o-Xylene		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
Total Xylenes		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
Total BTEX		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		

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



Kelsey Brooks
Project Manager

Flagging Criteria

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 9701 Harry Hines Blvd, Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Work Orders : 462519,

Project ID: 2008-113

Lab Batch #: 913186

Sample: 462519-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/08/13 15:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 913186

Sample: 462519-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/08/13 15:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 913186

Sample: 462519-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/08/13 15:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 913186

Sample: 462519-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/08/13 17:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0352	0.0300	117	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 913186

Sample: 637750-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/08/13 09:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Work Orders : 462519,

Project ID: 2008-113

Lab Batch #: 913186

Sample: 637750-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/08/13 08:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 913186

Sample: 637750-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/08/13 08:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 913186

Sample: 462546-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/08/13 14:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0339	0.0300	113	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 462519

Analyst: DYV

Date Prepared: 05/08/2013

Project ID: 2008-113

Date Analyzed: 05/08/2013

Lab Batch ID: 913186

Sample: 637750-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0994	99	0.100	0.102	102	3	70-125	25	
Toluene	<0.00200	0.100	0.106	106	0.100	0.106	106	0	70-125	25	
Ethylbenzene	<0.00100	0.100	0.107	107	0.100	0.110	110	3	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.198	99	0.200	0.208	104	5	70-131	25	
o-Xylene	<0.00100	0.100	0.0965	97	0.100	0.104	104	7	71-133	25	

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

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

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

All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries



Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 462519

Lab Batch #: 913186

Date Analyzed: 05/08/2013

Date Prepared: 05/08/2013

Project ID: 2008-113

Analyst: DYV

QC- Sample ID: 462546-001 S

Batch #: 1

Matrix: Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	<0.00100	0.100	0.113	113	70-125	
Toluene	<0.00200	0.100	0.115	115	70-125	
Ethylbenzene	<0.00100	0.100	0.118	118	71-129	
m_p-Xylenes	<0.00200	0.200	0.234	117	70-131	
o-Xylene	<0.00100	0.100	0.114	114	71-133	

Matrix Spike Percent Recovery [D] = $100 \times (C-A)/B$

Relative Percent Difference [E] = $200 \times (C-A)/(C+B)$

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: Ben J. Arguijo

Project Name: E.K. Queen 6 inch Pearce

Company Name Basin Environmental Service Technologies, LLC

Project #: 2008-113

Company Address: P.O. Box 301

Project Loc: Lea County, NMCity/State/Zip: Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No: (575)396-2378

Fax No: **(575) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: _____

e-mail: pm@basinenv.com

(lab use only)

ORDER #: 462519

[illegible]

Special Instructions:

Relinquished by: <i>Josh Smith</i>	Date <i>5-3-12</i>	Time <i>14:30</i>	Received by: <i>Perla Resendis</i>	Date <i>5-3-13</i>	Time <i>2:30</i>
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: <i>[Signature]</i>	Date <i>5-4-13</i>	Time <i>9:00</i>

Laboratory Comments:	

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N/A
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL	FedEx	Lone Star
Temperature Upon Receipt:	33	°C



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 05/03/2013 02:30:00 PM

Work Order #: 462519

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by:


Kelsey Brooks

Date: 05/06/2013

Checklist reviewed by:


Kelsey Brooks

Date: 05/06/2013

Analytical Report 468775

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

EK Queen Pearce

23-AUG-13

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-13-14-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

23-AUG-13

Project Manager: **Ben Arguijo**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **468775**
EK Queen Pearce
Project Address: New Mexico

Ben Arguijo:

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(s) 468775. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 468775 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,



Kelsey Brooks

Project Manager

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Sample Cross Reference 468775



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-4	W	08-13-13 15:00		468775-001



CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce

Project ID:
Work Order Number(s): 468775

Report Date: 23-AUG-13
Date Received: 08/16/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 468775

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id:

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Fri Aug-16-13 02:10 pm

Report Date: 23-AUG-13

Project Location: New Mexico

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	468775-001					
	Field Id:	MW-4					
	Depth:						
	Matrix:	WATER					
	Sampled:	Aug-13-13 15:00					
BTEX by EPA 8021B	Extracted:	Aug-22-13 09:05					
	Analyzed:	Aug-22-13 11:42					
	Units/RL:	mg/L RL					
Benzene		ND 0.00100					
Toluene		ND 0.00200					
Ethylbenzene		ND 0.00100					
m_p-Xylenes		ND 0.00200					
o-Xylene		ND 0.00100					
Total Xylenes		ND 0.00100					
Total BTEX		ND 0.00100					

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

Kelsey Brooks
Project Manager

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 9701 Harry Hines Blvd, Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 468775, 468775

Project ID:

Lab Batch #: 921235

Sample: 468775-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 08/22/13 11:42	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0306	0.0300	102	80-120
4-Bromofluorobenzene		0.0264	0.0300	88	80-120

Lab Batch #: 921235

Sample: 642911-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 08/22/13 11:18	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0298	0.0300	99	80-120
4-Bromofluorobenzene		0.0258	0.0300	86	80-120

Lab Batch #: 921235

Sample: 642911-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 08/22/13 10:30	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0341	0.0300	114	80-120
4-Bromofluorobenzene		0.0275	0.0300	92	80-120

Lab Batch #: 921235

Sample: 642911-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 08/22/13 10:46	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0336	0.0300	112	80-120
4-Bromofluorobenzene		0.0268	0.0300	89	80-120

Lab Batch #: 921235

Sample: 468775-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 08/22/13 15:34	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0349	0.0300	116	80-120
4-Bromofluorobenzene		0.0271	0.0300	90	80-120

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 468775, 468775

Analyst: KEB

Date Prepared: 08/22/2013

Project ID:

Date Analyzed: 08/22/2013

Lab Batch ID: 921235

Sample: 642911-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.110	110	0.100	0.116	116	5	70-125	25	
Toluene	<0.00200	0.100	0.101	101	0.100	0.108	108	7	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0991	99	0.100	0.106	106	7	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.197	99	0.200	0.210	105	6	70-131	25	
o-Xylene	<0.00100	0.100	0.0984	98	0.100	0.105	105	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

Project Name: EK Queen Pearce

Work Order #: 468775

Lab Batch #: 921235

Date Analyzed: 08/22/2013

Date Prepared: 08/22/2013

Project ID:

Analyst: KEB

QC- Sample ID: 468775-001 S

Batch #: 1

Matrix: Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

BTEX by EPA 8021B		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes							
Benzene		<0.00100	0.100	0.121	121	70-125	
Toluene		<0.00200	0.100	0.112	112	70-125	
Ethylbenzene		<0.00100	0.100	0.109	109	71-129	
m_p-Xylenes		<0.00200	0.200	0.215	108	70-131	
o-Xylene		<0.00100	0.100	0.107	107	71-133	

Matrix Spike Percent Recovery [D] = $100 \times (C-A)/B$

Relative Percent Difference [E] = $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



CHAIN OF CUSTODY RECORD

Houston: 4143 Greenbrier Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800
Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392-7550

Page 1 of 1

LAB W.O #:

468775

Field billable Hrs :

* Container Type Codes

VA Vial Amber ES Encore Sampler
VC Vial Clear TS TerraCore Sampler
VP Vial Pre-preserved AC Air Canister
GA Glass Amber TB Tedlar Bag
GC Glass Clear ZB Zip Lock Bag
PA Plastic Amber PC Plastic Clear
PC Plastic Clear
Other _____

Size(s): 2oz, 4oz, 8oz, 16oz, 32oz, 1Gal
40ml, 125 ml, 250 ml, 500 ml, 1L, Other _____

** Preservative Type Codes

A. None E. HCL I. Ice
B. HNO₃ F. MeOH J. MCAA C.
H₂SO₄ G. Na₂S₂O₃ K. ZnAc&NaOH
D. NaOH H. NaHSO₄ L. Asbc Acid&NaOH
O. _____

^ Matrix Type Codes

GW Ground Water S Soil/Sediment/Solid
WW Waste Water W Wipe
DW Drinking Water A Air
SW Surface Water O Oil
OW Ocean/Sea Water T Tissue
PL Product-Liquid U Urine
PS Product-Solid B Blood
SL Sludge
Other _____

REMARKS

Company: Basin Environmental Service Technologies, LLC Phone: (575)396-2378
Address: 3100 Plains Hwy. Fax: (575)396-1429
City: Lovington State: NM Zip: 88260
PM/Attn: Ben Arguijo Email: bjarguijo@basinenv.com
Project ID: EK Queen Pearce PO#: PAA-J. Henry
SRS #2008-113
Invoice To: Jason Henry Plains All American Quote #:

TAT Work Days = D Need results by: _____ Time: _____

Std (5-7D) 5Hrs 1D 2D 3D 4D 5D 7D 10D 14D Other _____

ANALYSES REQUESTED

Sampler Signature: _____ Circle One Event: Daily Weekly Monthly Quarterly
Semi-Annual Annual N/A

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Example Volatiles by 8260	TPH	BTEX	Chloride	Hold Sample (CALL) Run PAH Only if on Highest TPH
1	MW-4	8/13/13	1500	GW			3			X		
2												
3												
4												
5												
6												
7												
8												
9												
0												

Reg. Program / Clean-up Std						STATE for Certs & Regs						QA/QC Level & Certification						EDDs			COC & Labels		Coolers Temp °C			Lab Use Only		YES	NO	N/A					
CTLs	TRRP	DW	NPDES	LPST	DryCln	FL	TX	GA	NC	SC	NJ	PA	OK	LA	1	2	3	4	CLP	AFCEE	QAPP	ADaPT	SEDD	ERPIMS	Match	Incomplete	1			2	3	Non-Conformances found?			
Other:						AL	NM	Other:							NELAC	DoD-ELAP	Other:				XLS	Other:		Absent	Unclear							Samples intact upon arrival?			
	Relinquished by					Affiliation					Date		Time		Received by			Affiliation			Date		Time		Received on Wet Ice?										
1						Basin Env.					8/15/13		0745		Just Young			8/15/13			8/15/13		0745		Labeled with proper preservatives?										
2						Basin Env.					8/15/13		1345					8/15/13			8/15/13		145		Received within holding time?										
3																		Xencu							Custody seals intact?										
4																		8/16/13			8/16/13		14:10		VOCs rec'd w/o headspace?										
																									Proper containers used?										
																									pH verified-acceptable, excl VOCs?										
																									Received on time to meet HTs?										

B&A Laboratories: Hobbs 575-392-7550 Dallas 214-902-0300 Houston 281-242-4200 Odessa 432-563-1800 San Antonio 210-509-3334 Phoenix 602-437-0330
FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

C.O.C. Serial #

Execution of this document by client creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full.

Revision Date: Nov 12, 2009



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 08/16/2013 02:10:00 PM

Work Order #: 468775

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ?	Yes
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:	PH Device/Lot#:

Checklist completed by: Kelsey Brooks
Kelsey Brooks

Date: 08/19/2013

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks

Date: 08/19/2013

Analytical Report 474179

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

EK Queen Pearce

SRS#2008-113

22-NOV-13

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-13-15-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



22-NOV-13

Project Manager: **Ben Arguijo**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **474179**
EK Queen Pearce
Project Address: New Mexico

Ben Arguijo:

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(s) 474179. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

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Sample Cross Reference 474179



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	11-15-13 13:15		474179-001
MW-2	W	11-15-13 12:00		474179-002
MW-3	W	11-15-13 12:20		474179-003
MW-4	W	11-15-13 12:40		474179-004



CASE NARRATIVE



Client Name: *PLAINS ALL AMERICAN EH&S*

Project Name: *EK Queen Pearce*

Project ID: *SRS#2008-113*
Work Order Number(s): *474179*

Report Date: *22-NOV-13*
Date Received: *11/15/2013*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 474179

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: SRS#2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Fri Nov-15-13 03:02 pm

Report Date: 22-NOV-13

Project Location: New Mexico

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i> <i>Field Id:</i> <i>Depth:</i> <i>Matrix:</i> <i>Sampled:</i>	474179-001 MW-1 WATER Nov-15-13 13:15	474179-002 MW-2 WATER Nov-15-13 12:00	474179-003 MW-3 WATER Nov-15-13 12:20	474179-004 MW-4 WATER Nov-15-13 12:40		
BTEX by EPA 8021	<i>Extracted:</i> <i>Analyzed:</i> <i>Units/RL:</i>	Nov-21-13 15:00 Nov-21-13 18:38 mg/L RL	Nov-21-13 15:00 Nov-21-13 18:53 mg/L RL	Nov-21-13 15:00 Nov-21-13 19:09 mg/L RL	Nov-21-13 15:00 Nov-21-13 19:30 mg/L RL		
Benzene		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
Toluene		ND 0.00200	ND 0.00200	ND 0.00200	ND 0.00200		
Ethylbenzene		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
m_p-Xylenes		ND 0.00200	ND 0.00200	ND 0.00200	ND 0.00200		
o-Xylene		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
Xylenes, Total		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
Total BTEX		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		

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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



Kelsey Brooks
Project Manager

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
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- 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.
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- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **SQL** Sample Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

Phone	Fax
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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 474179,

Project ID: SRS#2008-113

Lab Batch #: 928301

Sample: 474179-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 18:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 928301

Sample: 474179-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 18:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 928301

Sample: 474179-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 19:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 928301

Sample: 474179-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 19:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 928301

Sample: 647366-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 18:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 474179,

Project ID: SRS#2008-113

Lab Batch #: 928301

Sample: 647366-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 16:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 928301

Sample: 647366-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 17:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 928301

Sample: 474260-017 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 17:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 928301

Sample: 474260-017 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 17:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: EK Queen Pearce

Work Order #: 474179

Project ID: SRS#2008-113

Analyst: ARM

Date Prepared: 11/21/2013

Date Analyzed: 11/21/2013

Lab Batch ID: 928301

Sample: 647366-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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											
Benzene	<0.00100	0.100	0.0937	94	0.100	0.0936	94	0	70-125	25	
Toluene	<0.00200	0.100	0.0966	97	0.100	0.0964	96	0	70-125	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.104	104	1	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.213	107	0.200	0.212	106	0	70-131	25	
o-Xylene	<0.00100	0.100	0.106	106	0.100	0.107	107	1	71-133	25	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 474179

Project ID: SRS#2008-113

Lab Batch ID: 928301

QC- Sample ID: 474260-017 S

Batch #: 1 Matrix: Water

Date Analyzed: 11/21/2013

Date Prepared: 11/21/2013

Analyst: ARM

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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	<0.00100	0.100	0.0963	96	0.100	0.0984	98	2	70-125	25	
Toluene	<0.00200	0.100	0.0994	99	0.100	0.103	103	4	70-125	25	
Ethylbenzene	<0.00100	0.100	0.108	108	0.100	0.113	113	5	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.220	110	0.200	0.229	115	4	70-131	25	
o-Xylene	<0.00100	0.100	0.110	110	0.100	0.114	114	4	71-133	25	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 11/15/2013 03:02:00 PM

Work Order #: 474179

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by:

Candace James

Candace James

Date: 11/18/2013

Checklist reviewed by:

Kelsey Brooks

Kelsey Brooks

Date: 11/18/2013



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 11/15/2013 03:02:00 PM

Work Order #: 474179

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ?	Yes
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by:

Candace James

Candace James

Date: 11/18/2013

Checklist reviewed by:

Kelsey Brooks

Kelsey Brooks

Date: 11/18/2013

Analytical Report 479073

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

EK Queen Pearce

SRS# 2008-113

19-FEB-14

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)

New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)

Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



19-FEB-14

Project Manager: **Ben Arguijo**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **479073**
EK Queen Pearce
Project Address: NM

Ben Arguijo:

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(s) 479073. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 479073 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,

Kelsey Brooks

Project Manager

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Sample Cross Reference 479073



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-4	W	02-10-14 10:00		479073-001



CASE NARRATIVE



Client Name: *PLAINS ALL AMERICAN EH&S*

Project Name: *EK Queen Pearce*

Project ID: *SRS# 2008-113*
Work Order Number(s): *479073*

Report Date: *19-FEB-14*
Date Received: *02/10/2014*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 479073

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: SRS# 2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Mon Feb-10-14 03:50 pm

Report Date: 19-FEB-14

Project Location: NM

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id: 479073-001 Field Id: MW-4 Depth: Matrix: WATER Sampled: Feb-10-14 10:00						
BTEX by EPA 8021B	Extracted: Feb-19-14 09:00 Analyzed: Feb-19-14 15:34 Units/RL: mg/L RL						
Benzene	ND 0.00100						
Toluene	ND 0.00200						
Ethylbenzene	ND 0.00100						
m_p-Xylenes	ND 0.00200						
o-Xylene	ND 0.00100						
Total Xylenes	ND 0.00100						
Total BTEX	ND 0.00100						

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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Kelsey Brooks
Project Manager

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 479073,

Project ID: SRS# 2008-113

Lab Batch #: 934362

Sample: 479073-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/19/14 15:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 934362

Sample: 651272-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/19/14 10:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 934362

Sample: 651272-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/19/14 09:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 934362

Sample: 651272-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/19/14 10:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 934362

Sample: 479541-003 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/19/14 15:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 479073,

Project ID: SRS# 2008-113

Lab Batch #: 934362

Sample: 479541-003 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/19/14 16:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: EK Queen Pearce

Work Order #: 479073

Project ID: SRS# 2008-113

Analyst: KEB

Date Prepared: 02/19/2014

Date Analyzed: 02/19/2014

Lab Batch ID: 934362

Sample: 651272-1-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 [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											
Benzene	<0.00100	0.100	0.108	108	0.100	0.110	110	2	70-125	25	
Toluene	<0.00200	0.100	0.110	110	0.100	0.113	113	3	70-125	25	
Ethylbenzene	<0.00100	0.100	0.110	110	0.100	0.113	113	3	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.218	109	0.200	0.224	112	3	70-131	25	
o-Xylene	<0.00100	0.100	0.109	109	0.100	0.113	113	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: EK Queen Pearce

Work Order # : 479073

Project ID: SRS# 2008-113

Lab Batch ID: 934362

QC- Sample ID: 479541-003 S

Batch #: 1 Matrix: Water

Date Analyzed: 02/19/2014

Date Prepared: 02/19/2014

Analyst: KEB

Reporting Units: mg/L

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.108	108	0.100	0.115	115	6	70-125	25	
Toluene	<0.00200	0.100	0.109	109	0.100	0.117	117	7	70-125	25	
Ethylbenzene	<0.00100	0.100	0.109	109	0.100	0.118	118	8	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.214	107	0.200	0.232	116	8	70-131	25	
o-Xylene	<0.00100	0.100	0.108	108	0.100	0.117	117	8	71-133	25	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



CHAIN OF CUSTODY RECORD

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800
Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392-7550

Page 1 of 1

LAB W.O #:

479073

Field billable Hrs :

* Container Type Codes

VA Vial Amber	ES Encore Sampler
VC Vial Clear	TS TerraCore Sampler
VP Vial Pre-preserved	AC Air Canister
GA Glass Amber	TB Tedlar Bag
GC Glass Clear	ZB Zip Lock Bag
PA Plastic Amber	PC Plastic Clear
PC Plastic Clear	
Other	

Size(s): 2oz, 4oz, 8oz, 16oz, 32oz, 1Gal
40ml, 125 ml, 250 ml, 500 ml, 1L, Other

** Preservative Type Codes

A. None	E. HCL	I. Ice
B. HNO ₃	F. MeOH	J. MCAA
H ₂ SO ₄	G. Na ₂ S ₂ O ₃	K. ZnAc&NaOH
D. NaOH	H. NaHSO ₄	L. Asbc Acid&NaOH
O.		

^ Matrix Type Codes

GW Ground Water	S Soil/Sediment/Solid
WW Waste Water	W Wipe
DW Drinking Water	A Air
SW Surface Water	O Oil
OW Ocean/Sea Water	T Tissue
PL Product-Liquid	U Urine
PS Product-Solid	B Blood
SL Sludge	
Other	

REMARKS

Company:	Basin Environmental Service Technologies, LLC	Phone:	(575)396-2378
Address:	3100 Plains Hwy.	Fax:	(575)396-1429
City:	Lovington	State:	NM
PM/Attn:	Ben Arguijo	Zip:	88260
Project ID:	EK Queen Pearce SRS #2008-113	Email:	cjbryant@paalp.com, bjarguijo@basinenv.com
Invoice To:	Camille Bryant Plains All American	PO#:	PAA-C. Bryant
Quote #:			
Sampler Signature:		Circle One Event:	Daily Weekly Monthly Quarterly Semi-Annual Annual N/A

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Example Volatiles by 8260	Cont Type * VC	Pres Type ** E, I	BTEX	Hold Sample (CALL on Highest TPH) Run PAH Only if
1	MW-4	2-10-14	10:00	GW			3		VP	E, I	X	
2												
3												
4												
5												
6												
7												
8												
9												
0												

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C	Lab Use Only	YES NO N/A
CTLs TRRP DW NPDES LPST DryCln Other:	FL TX GA NC SC NJ PA OK LA AL NM Other:	1 2 3 4 CLP AFCEE QAPP NELAC DoD-ELAP Other:	ADaPT SEDD ERPIMS XLS Other:	Match Incomplete Absent Unclear	1 2 3 4.3	Non-Conformances found?	— — — —
Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	E+	2-10-14	3:50	Peta Resens	MS	2-10-14	3:50
2							
3							
4				B. O. R. O.	Xenco	2-11-14	14:20

B&A Laboratories: Hobbs 575-392-7550 Dallas 214-902-0300 Houston 281-242-4200 Odessa 432-563-1800 San Antonio 210-509-3334 Phoenix 602-437-0330
FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

C.O.C. Serial #

Execution of this document by client creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full.

Revision Date: Nov 12, 2009



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 02/10/2014 03:50:00 PM

Work Order #: 479073

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	8.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Kelsey Brooks
Kelsey Brooks

Date: 02/11/2014

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks

Date: 02/11/2014

Analytical Report 484840

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

EK Queen Pearce

SRS# 2008-113

14-MAY-14

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)

New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)

Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



14-MAY-14

Project Manager: **Ben Arguijo**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **484840**
EK Queen Pearce
Project Address: NM

Ben Arguijo:

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(s) 484840. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 484840 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,

Kelsey Brooks
Project Manager

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Sample Cross Reference 484840



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	05-07-14 10:30		484840-001
MW-2	W	05-07-14 13:30		484840-002
MW-3	W	05-07-14 09:45		484840-003
MW-4	W	05-07-14 11:30		484840-004



CASE NARRATIVE



Client Name: *PLAINS ALL AMERICAN EH&S*

Project Name: *EK Queen Pearce*

Project ID: *SRS# 2008-113*
Work Order Number(s): *484840*

Report Date: *14-MAY-14*
Date Received: *05/07/2014*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 484840

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: SRS# 2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Wed May-07-14 03:17 pm

Report Date: 14-MAY-14

Project Location: NM

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	484840-001	484840-002	484840-003	484840-004		
	Field Id:	MW-1	MW-2	MW-3	MW-4		
	Depth:						
	Matrix:	WATER	WATER	WATER	WATER		
	Sampled:	May-07-14 10:30	May-07-14 13:30	May-07-14 09:45	May-07-14 11:30		
BTEX by EPA 8021B	Extracted:	May-13-14 18:00	May-13-14 18:00	May-13-14 18:00	May-13-14 18:00		
	Analyzed:	May-13-14 21:44	May-13-14 22:00	May-13-14 22:17	May-13-14 22:33		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Benzene		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
Toluene		ND 0.00200	ND 0.00200	ND 0.00200	ND 0.00200		
Ethylbenzene		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
m_p-Xylenes		ND 0.00200	ND 0.00200	ND 0.00200	ND 0.00200		
o-Xylene		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
Total Xylenes		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		
Total BTEX		ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100		

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

Kelsey Brooks
Project Manager

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 484840,

Project ID: SRS# 2008-113

Lab Batch #: 940837

Sample: 484840-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/13/14 21:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 940837

Sample: 484840-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/13/14 22:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 940837

Sample: 484840-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/13/14 22:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 940837

Sample: 484840-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/13/14 22:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 940837

Sample: 655390-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/13/14 20:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 484840,

Project ID: SRS# 2008-113

Lab Batch #: 940837

Sample: 655390-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/13/14 20:21

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 940837

Sample: 655390-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/13/14 20:38

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 940837

Sample: 484840-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/13/14 20:54

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 940837

Sample: 484840-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 05/13/14 21:11

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0324	0.0300	108	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: EK Queen Pearce

Work Order #: 484840

Project ID: SRS# 2008-113

Analyst: ARM

Date Prepared: 05/13/2014

Date Analyzed: 05/13/2014

Lab Batch ID: 940837

Sample: 655390-1-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 [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											
Benzene	<0.00100	0.100	0.0942	94	0.100	0.0942	94	0	70-125	25	
Toluene	<0.00200	0.100	0.0941	94	0.100	0.0941	94	0	70-125	25	
Ethylbenzene	<0.00100	0.100	0.101	101	0.100	0.100	100	1	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.207	104	0.200	0.206	103	0	70-131	25	
o-Xylene	<0.00100	0.100	0.103	103	0.100	0.103	103	0	71-133	25	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 484840

Project ID: SRS# 2008-113

Lab Batch ID: 940837

QC- Sample ID: 484840-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 05/13/2014

Date Prepared: 05/13/2014

Analyst: ARM

Reporting Units: mg/L

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0961	96	0.100	0.0979	98	2	70-125	25	
Toluene	<0.00200	0.100	0.0962	96	0.100	0.0981	98	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.103	103	0.100	0.105	105	2	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.212	106	0.200	0.215	108	1	70-131	25	
o-Xylene	<0.00100	0.100	0.106	106	0.100	0.108	108	2	71-133	25	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 05/07/2014 03:17:00 PM

Work Order #: 484840

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	0
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	No

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Kelsey Brooks
Kelsey Brooks

Date: 05/08/2014

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks

Date: 05/08/2014

Analytical Report 491032

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

EK Queen Pearce

13-AUG-14

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)

New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)

Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



13-AUG-14

Project Manager: **Ben Arguijo**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **491032**
EK Queen Pearce
Project Address: New Mexico

Ben Arguijo:

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(s) 491032. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 491032 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,

Kelsey Brooks

Project Manager

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Sample Cross Reference 491032



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-4	W	08-06-14 14:45		491032-001



CASE NARRATIVE



Client Name: *PLAINS ALL AMERICAN EH&S*

Project Name: *EK Queen Pearce*

Project ID:
Work Order Number(s): 491032

Report Date: 13-AUG-14
Date Received: 08/07/2014

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 491032

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id:

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Thu Aug-07-14 11:21 am

Report Date: 13-AUG-14

Project Location: New Mexico

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id: 491032-001 Field Id: MW-4 Depth: Matrix: WATER Sampled: Aug-06-14 14:45						
BTEX by EPA 8021B	Extracted: Aug-11-14 10:00 Analyzed: Aug-11-14 17:32 Units/RL: mg/L RL						
Benzene	ND 0.00100						
Toluene	ND 0.00200						
Ethylbenzene	ND 0.00100						
m_p-Xylenes	ND 0.00200						
o-Xylene	ND 0.00100						
Total Xylenes	ND 0.00100						
Total BTEX	ND 0.00100						

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

Kelsey Brooks
Project Manager

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **SQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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4143 Greenbriar Dr, Stafford, TX 77477
 9701 Harry Hines Blvd, Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 491032,

Lab Batch #: 947952

Sample: 491032-001 / SMP

Project ID:

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08/11/14 17:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 947952

Sample: 659867-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08/11/14 11:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 947952

Sample: 659867-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08/11/14 11:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0348	0.0300	116	80-120	

Lab Batch #: 947952

Sample: 659867-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08/11/14 11:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0352	0.0300	117	80-120	

Lab Batch #: 947952

Sample: 490785-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08/11/14 12:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0330	0.0300	110	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 491032,

Lab Batch #: 947952

Sample: 490785-001 SD / MSD

Project ID:

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08/11/14 12:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0335	0.0300	112	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: EK Queen Pearce

Work Order #: 491032

Analyst: ARM

Date Prepared: 08/11/2014

Project ID:

Date Analyzed: 08/11/2014

Lab Batch ID: 947952

Sample: 659867-1-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 [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											
Benzene	<0.00100	0.100	0.0941	94	0.100	0.0997	100	6	70-125	25	
Toluene	<0.00200	0.100	0.0989	99	0.100	0.105	105	6	70-125	25	
Ethylbenzene	<0.00100	0.100	0.104	104	0.100	0.111	111	7	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.209	105	0.200	0.222	111	6	70-131	25	
o-Xylene	<0.00100	0.100	0.103	103	0.100	0.110	110	7	71-133	25	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: EK Queen Pearce

Work Order # : 491032

Project ID:

Lab Batch ID: 947952

QC- Sample ID: 490785-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 08/11/2014

Date Prepared: 08/11/2014

Analyst: ARM

Reporting Units: mg/L

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]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0101	0.100	0.0977	88	0.100	0.101	91	3	70-125	25	
Toluene	<0.00200	0.100	0.0962	96	0.100	0.0997	100	4	70-125	25	
Ethylbenzene	<0.00100	0.100	0.101	101	0.100	0.105	105	4	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.203	102	0.200	0.212	106	4	70-131	25	
o-Xylene	<0.00100	0.100	0.100	100	0.100	0.105	105	5	71-133	25	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



CHAIN OF CUSTODY RECORD

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800
Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392-7550

Page 1 of 1

LAB W.O # :

Field billable Hrs :

491032

* Container Type Codes

VA Vial Amber	ES Encore Sampler
VC Vial Clear	TS TerraCore Sampler
VP Vial Pre-preserved	AC Air Canister
GA Glass Amber	TB Tedlar Bag
GC Glass Clear	ZB Zip Lock Bag
PA Plastic Amber	PC Plastic Clear
PC Plastic Clear	
Other	

Size(s): 2oz, 4oz, 8oz, 16oz, 32oz, 1Gal
40ml, 125 ml, 250 ml, 500 ml, 1L, Other

** Preservative Type Codes

A. None	E. HCL	I. Ice	
B. HNO ₃	F. MeOH	J. MCAA	C.
H ₂ SO ₄	G. Na ₂ S ₂ O ₃	K. ZnAc&NaOH	
D. NaOH	H. NaHSO ₄	L. Asbc Acid&NaOH	
O.			

^ Matrix Type Codes

GW Ground Water	S Soil/Sediment/Solid
WW Waste Water	W Wipe
DW Drinking Water	A Air
SW Surface Water	O Oil
OW Ocean/Sea Water	T Tissue
PL Product-Liquid	U Urine
PS Product-Solid	B Blood
SL Sludge	
Other	

REMARKS

Company:	Basin Environmental Service Technologies, LLC	Phone:	(575)396-2378
Address:	3100 Plains Hwy.	Fax:	(575)396-1429
City:	Lovington	State:	NM
PM/Attn:	Ben Arguijo	Email:	cjbryant@paalp.com, bjarguijo@basinenv.com
Project ID:	EK Queen Pearce SRS #2008-113	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	

Sampler Signature:	Circle One Event: Daily Weekly Monthly Quarterly Semi-Annual Annual N/A

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Example Volatiles by 8260	Cont Type * VC	Pres Type ** E, I	BTEX	# Cont	Lab Only:
1	MW-4	8-6-14	14:45	GW			3		VP	E, I			
2													
3													
4													
5													
6													
7													
8													
9													
0													

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C	Lab Use Only	YES NO N/A
CTLs TRRP DW NPDES LPST DryCln Other:	FL TX GA NC SC NJ PA OK LA AL NM Other:	1 2 3 4 CLP AFCEE QAPP NELAC DoD-ELAP Other:	ADaPT SEDD ERPIMS XLS Other:	Match Incomplete Absent Unclear	2-8 2 1 3	Non-Conformances found?	
Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
Basin Environ.	Basin Environ.	8-6-14	4:26	V. C. H. Ho	MS	8/6/14	4:30
				M. R. O. S	Xenco	8/7/14	11:21

B&A Laboratories: Hobbs 575-392-7550 Dallas 214-902-0300 Houston 281-242-4200 Odessa 432-563-1800 San Antonio 210-509-3334 Phoenix 602-437-0330
FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

C.O.C. Serial #

Execution of this document by client creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full.

Revision Date: Nov 12, 2009



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 08/07/2014 11:21:00 AM

Work Order #: 491032

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ?	Yes
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	No

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:


Kelsey Brooks

Date: 08/07/2014

Checklist reviewed by:

Date: _____

Appendix G

Laboratory Analytical Reports (Air)

Analytical Report 368359

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen 6" Pearce

2008-113

12-APR-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)



12-APR-10

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **368359**
EK Queen 6" Pearce
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 368359. 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. 368359 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 368359



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen 6" Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge	A	Apr-07-10 15:00		368359-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen 6" Pearce



Project ID: 2008-113

Work Order Number: 368359

Report Date: 12-APR-10

Date Received: 04/07/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-801815 BTEX in Air by EPA 18M

None

Batch: LBA-801820 GRO in Air by EPA 18M

None



Certificate of Analysis Summary 368359

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen 6" Pearce



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea Co, NM

Date Received in Lab: Wed Apr-07-10 05:30 pm

Report Date: 12-APR-10

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 368359-001 Field Id: SVE Discharge Depth: Matrix: AIR Sampled: Apr-07-10 15:00					
BTEX in Air by EPA 18M SUB: T104704215-TX	Extracted: Apr-09-10 15:23 Analyzed: Apr-09-10 15:23 Units/RL: ppmv RL					
Benzene	504 10.0					
Toluene	357 10.0					
Ethylbenzene	60.1 10.0					
m,p-Xylenes	54.7 20.0					
o-Xylene	21.2 10.0					
Total Xylenes	75.9 10.0					
Total BTEX	997 10.0					
GRO in Air by EPA 18M SUB: T104704215-TX	Extracted: Apr-09-10 15:23 Analyzed: Apr-09-10 15:23 Units/RL: ppmv RL					
TPH-GRO	5150 1000					

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

- 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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 2505 North Falkenburg Rd, Tampa, FL 33619
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 12600 West I-20 East, Odessa, TX 79765
 842 Cantwell Lane, Corpus Christi, TX 78408

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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6" Pearce

Work Orders : 368359,

Project ID: 2008-113

Lab Batch #: 801815

Sample: 560306-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/09/10 10:26

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	26.6	30.0	89	75-125	

Lab Batch #: 801815

Sample: 560306-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/09/10 11:50

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.8	30.0	103	75-125	

Lab Batch #: 801815

Sample: 368246-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/09/10 13:07

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.8	30.0	96	75-125	

Lab Batch #: 801815

Sample: 368359-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/09/10 15:23

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.1	30.0	94	75-125	

Lab Batch #: 801820

Sample: 560307-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/09/10 11:11

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29.4	30.0	98	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen 6" Pearce

Work Orders : 368359,

Project ID: 2008-113

Lab Batch #: 801820

Sample: 560307-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/09/10 11:50

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.8	30.0	103	75-125	

Lab Batch #: 801820

Sample: 368246-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/09/10 13:07

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.8	30.0	96	75-125	

Lab Batch #: 801820

Sample: 368359-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/09/10 15:23

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.1	30.0	94	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen 6" Pearce

Work Order #: 368359

Project ID:

2008-113

Lab Batch #: 801815

Sample: 560306-1-BKS

Matrix: Air

Date Analyzed: 04/09/2010

Date Prepared: 04/09/2010

Analyst: CAA

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX in Air by EPA 18M	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	ND	10.0	10.1	101	75-125	
Toluene	ND	10.0	8.35	84	70-125	
Ethylbenzene	ND	10.0	9.03	90	71-129	
m,p-Xylenes	ND	20.0	17.1	86	70-131	
o-Xylene	ND	10.0	8.35	84	71-133	

Lab Batch #: 801820

Sample: 560307-1-BKS

Matrix: Air

Date Analyzed: 04/09/2010

Date Prepared: 04/09/2010

Analyst: CAA

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

GRO in Air by EPA 18M	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	ND	500	457	91	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen 6" Pearce

Work Order #: 368359

Lab Batch #: 801815

Project ID: 2008-113

Date Analyzed: 04/09/2010

Date Prepared: 04/09/2010

Analyst: CAA

QC- Sample ID: 368246-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX in Air by EPA 18M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	631	618	2	35	
Toluene	1960	1960	0	35	
Ethylbenzene	101	108	7	35	
m,p-Xylenes	267	264	1	35	
o-Xylene	65.5	64.5	2	35	

Lab Batch #: 801820

Date Analyzed: 04/09/2010

Date Prepared: 04/09/2010

Analyst: CAA

QC- Sample ID: 368246-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

GRO in Air by EPA 18M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	24700	23400	5	30	

Spike Relative Difference $RPD = 200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin / Plains
 Date/ Time: 4.7.10 17:30
 Lab ID #: 368359
 Initials: BB / AL

Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	<u>(Yes)</u>	No	AmD. °C
#2	Shipping container in good condition?	<u>(Yes)</u>	No	
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	<u>(Not Present)</u>
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	<u>(Not Present)</u>
#5	Chain of Custody present?	<u>(Yes)</u>	No	
#6	Sample instructions complete of Chain of Custody?	<u>(Yes)</u>	No	
#7	Chain of Custody signed when relinquished/ received?	<u>(Yes)</u>	No	
#8	Chain of Custody agrees with sample label(s)?	<u>(Yes)</u>	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	<u>(Yes)</u>	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<u>(Yes)</u>	No	
#11	Containers supplied by ELOT?	<u>(Yes)</u>	No	
#12	Samples in proper container/ bottle?	<u>(Yes)</u>	No	See Below
#13	Samples properly preserved?	<u>(Yes)</u>	No	See Below
#14	Sample bottles intact?	<u>(Yes)</u>	No	
#15	Preservations documented on Chain of Custody?	<u>(Yes)</u>	No	
#16	Containers documented on Chain of Custody?	<u>(Yes)</u>	No	
#17	Sufficient sample amount for indicated test(s)?	<u>(Yes)</u>	No	See Below
#18	All samples received within sufficient hold time?	<u>(Yes)</u>	No	See Below
#19	Subcontract of sample(s)?	<u>(Yes)</u>	No	Not Applicable
#20	VOC samples have zero headspace?	<u>Yes</u>	No	<u>(Not Applicable)</u>

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: Subbed to Xenco Houston.

Corrective Action Taken:

Check all that Apply:

- ☐ See attached e-mail/ fax
☐ Client understands and would like to proceed with analysis
☐ Cooling process had begun shortly after sampling event

Analytical Report 373487

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce 6"

2008-113

24-MAY-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-MAY-10

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **373487**
EK Queen Pearce 6"
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 373487. 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. 373487 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 373487



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce 6"

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-1	A	May-18-10 14:30		373487-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce 6"



Project ID: 2008-113

Work Order Number: 373487

Report Date: 24-MAY-10

Date Received: 05/19/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-807625 GRO in Air by EPA 18M

None

Batch: LBA-807626 BTEX in Air by EPA 18M

None



Certificate of Analysis Summary 373487

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce 6"



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed May-19-10 08:25 am

Report Date: 24-MAY-10

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 373487-001 Field Id: SVE Discharge-1 Depth: Matrix: AIR Sampled: May-18-10 14:30					
BTEX in Air by EPA 18M SUB: T104704215-TX	Extracted: May-20-10 17:51 Analyzed: May-20-10 17:51 Units/RL: ppmv RL					
Benzene	106 5.00					
Toluene	215 5.00					
Ethylbenzene	42.0 5.00					
m,p-Xylenes	51.0 10.0					
o-Xylene	19.3 5.00					
Total Xylenes	70.3 5.00					
Total BTEX	433 5.00					
GRO in Air by EPA 18M SUB: T104704215-TX	Extracted: May-20-10 17:51 Analyzed: May-20-10 17:51 Units/RL: ppmv RL					
TPH-GRO	5450 500					

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

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- *** Outside XENCO's scope of NELAC Accreditation.

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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 373487,

Project ID: 2008-113

Lab Batch #: 807626

Sample: 563872-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/20/10 11:22

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.5	30.0	102	75-125	

Lab Batch #: 807626

Sample: 563872-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/20/10 12:01

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	31.4	30.0	105	75-125	

Lab Batch #: 807626

Sample: 373489-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/20/10 15:55

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.0	30.0	100	75-125	

Lab Batch #: 807626

Sample: 373487-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/20/10 17:51

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29.9	30.0	100	75-125	

Lab Batch #: 807625

Sample: 563877-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/20/10 10:44

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.7	30.0	96	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Work Orders : 373487,

Project ID: 2008-113

Lab Batch #: 807625

Sample: 563877-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/20/10 11:22

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.5	30.0	102	75-125	

Lab Batch #: 807625

Sample: 373489-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/20/10 15:55

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.0	30.0	100	75-125	

Lab Batch #: 807625

Sample: 373487-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/20/10 17:51

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29.9	30.0	100	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce 6"

Work Order #: 373487

Project ID:

2008-113

Lab Batch #: 807626

Sample: 563872-1-BKS

Matrix: Air

Date Analyzed: 05/20/2010

Date Prepared: 05/20/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX in Air by EPA 18M	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	ND	10.0	9.79	98	75-125	
Toluene	ND	10.0	11.0	110	70-125	
Ethylbenzene	ND	10.0	9.23	92	71-129	
m,p-Xylenes	ND	20.0	20.3	102	70-131	
o-Xylene	ND	10.0	11.2	112	71-133	

Lab Batch #: 807625

Sample: 563877-1-BKS

Matrix: Air

Date Analyzed: 05/20/2010

Date Prepared: 05/20/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

GRO in Air by EPA 18M	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	ND	500	461	92	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce 6"

Work Order #: 373487

Lab Batch #: 807626

Project ID: 2008-113

Date Analyzed: 05/20/2010

Date Prepared: 05/20/2010

Analyst: JUJ

QC- Sample ID: 373489-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX in Air by EPA 18M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	73.8	86.4	16	35	
Toluene	174	205	16	35	
Ethylbenzene	45.4	52.5	15	35	
m,p-Xylenes	44.5	43.3	3	35	
o-Xylene	16.1	16.9	5	35	

Lab Batch #: 807625

Date Analyzed: 05/20/2010

Date Prepared: 05/20/2010

Analyst: JUJ

QC- Sample ID: 373489-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

GRO in Air by EPA 18M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	1640	1740	6	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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Phone: 432-563-1800
Fax: 432-563-1713

Project Name: EK Queen Pearce 6"

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA - J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: cjbryant@basin-consulting.com

Final Ver. 1.000

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Plains / Basin
 Date/ Time: 05-19-10 @ 0825
 Lab ID #: 373487
 Initials: JMF

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<u>Yes</u>	No	<u>21.6</u> °C	
#2	Shipping container in good condition?	<u>Yes</u>	No	<u>N/A</u>	
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	Not Present <u>(N/A)</u>	
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	<u>Not Present</u>	
#5	Chain of Custody present?	<u>Yes</u>	No		
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No		
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No		
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No		
#11	Containers supplied by ELOT?	<u>Yes</u>	No		
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below	
#13	Samples properly preserved?	<u>Yes</u>	No	See Below	
#14	Sample bottles intact?	<u>Yes</u>	No		
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No		
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No		
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below	
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below	
#19	Subcontract of sample(s)?	<u>Yes</u>	No	Not Applicable	<u>Xerox- Houston</u>
#20	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

- ☐ See attached e-mail/ fax
☐ Client understands and would like to proceed with analysis
☐ Cooling process had begun shortly after sampling event

Analytical Report 383010

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

27-JUL-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), Florida(E86349)



27-JUL-10

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **383010**
EK Queen Pearce
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 383010. 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. 383010 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 383010



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-2	A	Jul-26-10 09:00		383010-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 383010

Report Date: 27-JUL-10

Date Received: 07/26/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-816366 BTEX in Air by EPA 18M

None

Batch: LBA-816369 GRO in Air by EPA 18M

None

Certificate of Analysis Summary 383010

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Mon Jul-26-10 11:50 am

Report Date: 27-JUL-10

Project Location: Lea County, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	383010-001					
	Field Id:	SVE Discharge-2					
	Depth:						
	Matrix:	AIR					
	Sampled:	Jul-26-10 09:00					
BTEX in Air by EPA 18M SUB: T104704215-TX	Extracted:	Jul-27-10 14:03					
	Analyzed:	Jul-27-10 14:03					
	Units/RL:	ppmv RL					
Benzene		19.0 1.00					
Toluene		53.9 1.00					
Ethylbenzene		20.2 1.00					
m,p-Xylenes		17.6 2.00					
o-Xylene		6.01 1.00					
Total Xylenes		23.6 1.00					
Total BTEX		116.7 1.00					
GRO in Air by EPA 18M SUB: T104704215-TX	Extracted:	Jul-27-10 14:03					
	Analyzed:	Jul-27-10 14:03					
	Units/RL:	ppmv RL					
TPH-GRO		803 100					

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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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 383010,

Project ID: 2008-113

Lab Batch #: 816366

Sample: 569119-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 07/27/10 11:12

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	33.2	30.0	111	75-125	

Lab Batch #: 816366

Sample: 569119-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 07/27/10 11:50

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	32.8	30.0	109	75-125	

Lab Batch #: 816366

Sample: 382991-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 07/27/10 12:48

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	35.0	30.0	117	75-125	

Lab Batch #: 816366

Sample: 383010-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 07/27/10 14:03

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	24.5	30.0	82	75-125	

Lab Batch #: 816369

Sample: 569123-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 07/27/10 10:34

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	25.1	30.0	84	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 383010,

Project ID: 2008-113

Lab Batch #: 816369

Sample: 569123-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 07/27/10 11:12

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	33.2	30.0	111	75-125	

Lab Batch #: 816369

Sample: 382991-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 07/27/10 12:48

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	35.0	30.0	117	75-125	

Lab Batch #: 816369

Sample: 383010-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 07/27/10 14:03

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	24.5	30.0	82	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 383010

Project ID: 2008-113

Lab Batch #: 816366

Sample: 569119-1-BKS

Matrix: Air

Date Analyzed: 07/27/2010

Date Prepared: 07/27/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX in Air by EPA 18M	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	ND	10.0	9.82	98	75-125	
Toluene	ND	10.0	10.7	107	70-125	
Ethylbenzene	ND	10.0	11.2	112	71-129	
m,p-Xylenes	ND	20.0	23.6	118	70-131	
o-Xylene	ND	10.0	11.6	116	71-133	

Lab Batch #: 816369

Sample: 569123-1-BKS

Matrix: Air

Date Analyzed: 07/27/2010

Date Prepared: 07/27/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

GRO in Air by EPA 18M	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	ND	500	437	87	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 383010

Lab Batch #: 816366

Project ID: 2008-113

Date Analyzed: 07/27/2010

Date Prepared: 07/27/2010

Analyst: JUJ

QC- Sample ID: 382991-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX in Air by EPA 18M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	109	153	34	35	
Toluene	195	196	1	35	
Ethylbenzene	36.7	33.3	10	35	
m,p-Xylenes	77.2	73.7	5	35	
o-Xylene	21.9	21.4	2	35	

Lab Batch #: 816369

Date Analyzed: 07/27/2010

Date Prepared: 07/27/2010

Analyst: JUJ

QC- Sample ID: 382991-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

GRO in Air by EPA 18M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	4470	4740	6	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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Phone: 432-563-1800
Fax: 432-563-1713

Project Name: EK Queen Pearce

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA-J. Henry

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: cjbryant@basin-consulting.com

383010

Sample Containers Insured? ☒ Y ☒ N

VOCs Free of Headspace? ☒ Y ☒ NA

Labels on container(s) ☒ Y ☒ N

Custody seals on container(s) ☒ Y ☒ N

Custody seals on cooler(s) ☒ Y ☒ N

Sample Hand Delivered ☒ Y ☒ N

by Sampler/Client Rep. ? ☒ Y ☒ N

by Courier? UPS DHL FedEx Lone Star

Tedlar Bag

Temperature Upon Receipt: Amb. °C

Final 1.000

**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: Basin Env. / Plains
Date/Time: 7-26-10 11:50
Lab ID #: 383010
Initials: AL

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	Yes	No	<u>None</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	Yes	No	<u>N/A</u>	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>AMB</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis

Analytical Report 387695

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

03-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)

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)



03-SEP-10

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **387695**
EK Queen Pearce
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 387695. 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. 387695 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 387695



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-3	A	Aug-30-10 09:00		387695-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 387695

Report Date: 03-SEP-10

Date Received: 08/30/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-821603 GRO in Air by EPA 18M

None

Batch: LBA-821604 BTEX in Air by EPA 18M

None



Certificate of Analysis Summary 387695

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Aug-30-10 01:00 pm

Report Date: 03-SEP-10

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 387695-001 Field Id: SVE Discharge-3 Depth: Matrix: AIR Sampled: Aug-30-10 09:00					
BTEX in Air by EPA 18M SUB: T104704215-TX	Extracted: Sep-02-10 22:01 Analyzed: Sep-02-10 22:01 Units/RL: ppmv RL					
Benzene	6.19 1.00					
Toluene	40.7 1.00					
Ethylbenzene	18.4 1.00					
m,p-Xylenes	17.3 2.00					
o-Xylene	5.66 1.00					
Total Xylenes	23.0 1.00					
Total BTEX	88.3 1.00					
GRO in Air by EPA 18M SUB: T104704215-TX	Extracted: Sep-02-10 22:01 Analyzed: Sep-02-10 22:01 Units/RL: ppmv RL					
TPH-GRO	700 100					

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

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(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 387695,

Project ID: 2008-113

Lab Batch #: 821604

Sample: 572439-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/02/10 14:50

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	25.0	30.0	83	75-125	

Lab Batch #: 821604

Sample: 572439-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/02/10 16:00

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	26.3	30.0	88	75-125	

Lab Batch #: 821604

Sample: 388116-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/02/10 17:25

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	26.7	30.0	89	75-125	

Lab Batch #: 821604

Sample: 387695-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/02/10 22:01

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.9	30.0	93	75-125	

Lab Batch #: 821603

Sample: 572448-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/02/10 14:03

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	25.6	30.0	85	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 387695,

Project ID: 2008-113

Lab Batch #: 821603

Sample: 572448-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/02/10 14:50

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	25.0	30.0	83	75-125	

Lab Batch #: 821603

Sample: 388116-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/02/10 17:25

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	26.7	30.0	89	75-125	

Lab Batch #: 821603

Sample: 387695-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/02/10 22:01

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.9	30.0	93	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 387695

Project ID:

2008-113

Lab Batch #: 821604

Sample: 572439-1-BKS

Matrix: Air

Date Analyzed: 09/02/2010

Date Prepared: 09/02/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX in Air by EPA 18M	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	ND	10.0	9.00	90	75-125	
Toluene	ND	10.0	11.6	116	70-125	
Ethylbenzene	ND	10.0	12.7	127	71-129	
m,p-Xylenes	ND	20.0	26.0	130	70-131	
o-Xylene	ND	10.0	12.4	124	71-133	

Lab Batch #: 821603

Sample: 572448-1-BKS

Matrix: Air

Date Analyzed: 09/02/2010

Date Prepared: 09/02/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

GRO in Air by EPA 18M	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	ND	500	416	83	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 387695

Lab Batch #: 821604

Project ID: 2008-113

Date Analyzed: 09/02/2010

Date Prepared: 09/02/2010

Analyst: JUJ

QC- Sample ID: 388116-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX in Air by EPA 18M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	946	1050	10	35	
Toluene	2350	2550	8	35	
Ethylbenzene	229	220	4	35	
m,p-Xylenes	980	1030	5	35	
o-Xylene	299	295	1	35	

Lab Batch #: 821603

Date Analyzed: 09/02/2010

Date Prepared: 09/02/2010

Analyst: JUJ

QC- Sample ID: 388116-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

GRO in Air by EPA 18M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	27000	26000	4	30	

Spike Relative Difference $RPD = 200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

**12600 West I-20 East
Odessa, Texas 79765**

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Camille Bryant

Project Name: EK Queen Pearce

Company Name Basin Environmental Consulting, LLC

Project #: 2008-113

Company Address: P. O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: (575)605-7210

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:

e-mail: cjbryant@basin-consulting.com

[illegible]

**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:

PLAA

Date/Time:

8/30/10 / 1320

Lab ID #:

387495

Initials:

BB**Sample Receipt Checklist**

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	Yes	No	<u>None</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	<u>Hon</u>
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>Amb</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
 - ☐ Initial and Backup Temperature confirm out of temperature conditions
 - ☐ Client understands and would like to proceed with analysis

Analytical Report 391029

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

28-SEP-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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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)



28-SEP-10

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **391029**
EK Queen Pearce
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 391029. 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. 391029 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 391029



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-4	A	Sep-23-10 09:00		391029-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 391029

Report Date: 28-SEP-10

Date Received: 09/23/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-824854 BTEX in Air by EPA 18M

None

Batch: LBA-824855 GRO in Air by EPA 18M

None



Certificate of Analysis Summary 391029

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Thu Sep-23-10 12:00 pm

Report Date: 28-SEP-10

Project Location: Lea County, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 391029-001 Field Id: SVE Discharge-4 Depth: Matrix: AIR Sampled: Sep-23-10 09:00					
BTEX in Air by EPA 18M SUB: T104704215-TX	Extracted: Sep-24-10 22:54 Analyzed: Sep-24-10 22:54 Units/RL: ppmv RL					
Benzene	6.49 1.00					
Toluene	57.7 1.00					
Ethylbenzene	23.4 1.00					
m,p-Xylenes	25.8 2.00					
o-Xylene	11.0 1.00					
Total Xylenes	36.8 1.00					
Total BTEX	124.4 1.00					
GRO in Air by EPA 18M SUB: T104704215-TX	Extracted: Sep-24-10 22:54 Analyzed: Sep-24-10 22:54 Units/RL: ppmv RL					
TPH-GRO	910 100					

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Brent Barron, II
Odessa Laboratory Manager

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- 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.
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- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 391029,

Project ID: 2008-113

Lab Batch #: 824854

Sample: 574410-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/24/10 13:36

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	31.1	30.0	104	75-125	

Lab Batch #: 824854

Sample: 574410-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/24/10 14:23

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	32.3	30.0	108	75-125	

Lab Batch #: 824854

Sample: 391075-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/24/10 15:09

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	31.1	30.0	104	75-125	

Lab Batch #: 824854

Sample: 391029-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/24/10 22:54

SURROGATE RECOVERY STUDY

BTEX in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	35.3	30.0	118	75-125	

Lab Batch #: 824855

Sample: 574413-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/24/10 13:13

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	32.6	30.0	109	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 391029,

Project ID: 2008-113

Lab Batch #: 824855

Sample: 574413-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/24/10 14:23

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	32.3	30.0	108	75-125	

Lab Batch #: 824855

Sample: 391075-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/24/10 15:09

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	31.1	30.0	104	75-125	

Lab Batch #: 824855

Sample: 391029-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/24/10 22:54

SURROGATE RECOVERY STUDY

GRO in Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	35.3	30.0	118	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 391029

Project ID:

2008-113

Lab Batch #: 824854

Sample: 574410-1-BKS

Matrix: Air

Date Analyzed: 09/24/2010

Date Prepared: 09/24/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX in Air by EPA 18M	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	ND	10.0	8.39	84	75-125	
Toluene	ND	10.0	10.6	106	70-125	
Ethylbenzene	ND	10.0	9.79	98	71-129	
m,p-Xylenes	ND	20.0	20.2	101	70-131	
o-Xylene	ND	10.0	10.8	108	71-133	

Lab Batch #: 824855

Sample: 574413-1-BKS

Matrix: Air

Date Analyzed: 09/24/2010

Date Prepared: 09/24/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

GRO in Air by EPA 18M	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	ND	500	542	108	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit



Sample Duplicate Recovery



Project Name: EK Queen Pearce

Work Order #: 391029

Lab Batch #: 824854

Project ID: 2008-113

Date Analyzed: 09/24/2010

Date Prepared: 09/24/2010

Analyst: JUJ

QC- Sample ID: 391075-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX in Air by EPA 18M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	21.0	19.8	6	35	
Toluene	86.0	92.6	7	35	
Ethylbenzene	16.8	13.4	23	35	
m,p-Xylenes	57.4	54.0	6	35	
o-Xylene	27.9	22.5	21	35	

Lab Batch #: 824855

Date Analyzed: 09/24/2010

Date Prepared: 09/24/2010

Analyst: JUJ

QC- Sample ID: 391075-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

GRO in Air by EPA 18M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	1990	1940	3	30	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Camille Bryant

Project Name: EK Queen Pearce

Company Name **Basin Environmental Consulting, LLC**

Project #: 2008-113

Company Address: P. O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: (575)605-7210

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: *Spot Cowan*

e-mail: cjbryant@basin-consulting.com

[illegible]



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: Borin Env. / Plains
Date/Time: 7-23-10 12:00
Lab ID #: 371029
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	(No)						
2. Shipping container in good condition?	Yes	No	(None)						
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	(N/A)						
4. Chain of Custody present?	(Yes)	No							
5. Sample instructions complete on chain of custody?	(Yes)	No							
6. Any missing / extra samples?	Yes	(No)							
7. Chain of custody signed when relinquished / received?	(Yes)	No							
8. Chain of custody agrees with sample label(s)?	(Yes)	No							
9. Container labels legible and intact?	(Yes)	No							
10. Sample matrix / properties agree with chain of custody?	(Yes)	No							
11. Samples in proper container / bottle?	(Yes)	No							
12. Samples properly preserved?	(Yes)	No	N/A						
13. Sample container intact?	(Yes)	No							
14. Sufficient sample amount for indicated test(s)?	(Yes)	No							
15. All samples received within sufficient hold time?	(Yes)	No							
16. Subcontract of sample(s)?	(Yes)	No	N/A						
17. VOC sample have zero head space?	Yes	No	(N/A)						
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.					
lbs	Amb °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis

Analytical Report 397811

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

23-NOV-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)

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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)



23-NOV-10

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **397811**
EK Queen Pearce
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 397811. 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. 397811 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 397811



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-5	A	Nov-18-10 10:00		397811-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 397811

Report Date: 23-NOV-10

Date Received: 11/18/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None



Certificate of Analysis Summary 397811

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Thu Nov-18-10 04:00 pm

Report Date: 23-NOV-10

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 397811-001 Field Id: SVE Discharge-5 Depth: Matrix: AIR Sampled: Nov-18-10 10:00					
BTEX by EPA 8021 SUB: T104704215-TX	Extracted: Nov-22-10 16:34 Analyzed: Nov-22-10 16:34 Units/RL: ppmv RL					
Benzene	3.1900 1.0000					
Toluene	25.580 1.0000					
Ethylbenzene	13.000 1.0000					
m,p-Xylenes	24.210 2.0000					
o-Xylene	11.350 1.0000					
Total Xylenes	35.560 1.0000					
Total BTEX	77.330 1.0000					
TPH Gasoline Range Organics by SW 8015 SUB: T104704215-TX	Extracted: Nov-22-10 16:34 Analyzed: Nov-22-10 16:34 Units/RL: ppmv RL					
TPH-GRO	588 100					

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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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 397811,

Project ID: 2008-113

Lab Batch #: 833178

Sample: 589498-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/22/10 12:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.370	30.000	91	75-125	

Lab Batch #: 833178

Sample: 589498-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/22/10 13:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.680	30.000	96	75-125	

Lab Batch #: 833178

Sample: 397724-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/22/10 14:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.470	30.000	95	75-125	

Lab Batch #: 833178

Sample: 397811-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/22/10 16:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	31.610	30.000	105	75-125	

Lab Batch #: 833196

Sample: 589514-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/22/10 11:52

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.4	30.0	91	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 397811,

Project ID: 2008-113

Lab Batch #: 833196

Sample: 589514-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/22/10 12:39

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.4	30.0	91	75-125	

Lab Batch #: 833196

Sample: 397724-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/22/10 14:36

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.5	30.0	95	75-125	

Lab Batch #: 833196

Sample: 397811-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/22/10 16:34

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	31.6	30.0	105	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 397811

Project ID:

2008-113

Lab Batch #: 833178

Sample: 589498-1-BKS

Matrix: Air

Date Analyzed: 11/22/2010

Date Prepared: 11/22/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	ND	10.000	8.3500	84	75-125	
Toluene	ND	10.000	7.5100	75	70-125	
Ethylbenzene	ND	10.000	7.7000	77	71-129	
m,p-Xylenes	ND	20.000	15.230	76	70-131	
o-Xylene	ND	10.000	8.2000	82	71-133	

Lab Batch #: 833196

Sample: 589514-1-BKS

Matrix: Air

Date Analyzed: 11/22/2010

Date Prepared: 11/22/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	ND	500	420	84	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 397811

Lab Batch #: 833178

Date Analyzed: 11/22/2010

QC- Sample ID: 397724-002 D

Reporting Units: ppmv

Date Prepared: 11/22/2010

Batch #: 1

Project ID: 2008-113

Analyst: JUJ

Matrix: Air

SAMPLE / SAMPLE DUPLICATE RECOVERY					
BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	ND	ND	NC	35	
Toluene	ND	ND	NC	35	
Ethylbenzene	ND	ND	NC	35	
m,p-Xylenes	ND	ND	NC	35	
o-Xylene	ND	ND	NC	35	

Lab Batch #: 833196

Date Analyzed: 11/22/2010

QC- Sample ID: 397724-002 D

Reporting Units: ppmv

Date Prepared: 11/22/2010

Batch #: 1

Analyst: JUJ

Matrix: Air

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	ND	ND	NC	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

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 Arguijo**

Project Name: EK Queen Pearce

Company Name Basin Environmental Services Technologies

Project #: 2008-113

Company Address: P. O. Box 3011

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: **(575)396-2378**

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: 

e-mail: pm@basinenv.com

(lab use only)

ORDER #: 397811

[illegible]

Special Instructions:

Laboratory Comments:

Sample Containers Intact?

VOCs Free of Headspace?

Labels on container(s)

Custody seals on container(s)

Custody seals on cooler(s)

Sample Hand Delivered

by Sampler/Client Rep. ?

by Courier? UPS

Temperature Upon Receipt

L FedEx Lone Star

 3°

**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: Boson Env. / Plants
Date/Time: 11-18-10 16:00
Lab ID #: 397811
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	Yes	No	<u>None</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>1.5</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis

Analytical Report 400068

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

14-DEC-10



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12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

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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)



14-DEC-10

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **400068**
EK Queen Pearce
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 400068. 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. 400068 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 400068



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-6	A	Dec-09-10 12:00		400068-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 400068

Report Date: 14-DEC-10

Date Received: 12/09/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 400068

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Thu Dec-09-10 04:00 pm

Report Date: 14-DEC-10

Project Location: Lea County, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 400068-001 Field Id: SVE Discharge-6 Depth: Matrix: AIR Sampled: Dec-09-10 12:00					
BTEX by EPA 8021 SUB: T104704215-TX	Extracted: Dec-10-10 13:59 Analyzed: Dec-10-10 13:59 Units/RL: ppmv RL					
Benzene	1.0700 1.0000					
Toluene	17.880 1.0000					
Ethylbenzene	12.370 1.0000					
m,p-Xylenes	12.480 2.0000					
o-Xylene	5.6500 1.0000					
Total Xylenes	18.130 1.0000					
Total BTEX	49.450 1.0000					
TPH Gasoline Range Organics by SW 8015 SUB: T104704215-TX	Extracted: Dec-10-10 13:59 Analyzed: Dec-10-10 13:59 Units/RL: ppmv RL					
TPH-GRO	432 100					

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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(361) 884-0371	(361) 884-9116

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 400068,

Project ID: 2008-113

Lab Batch #: 835596

Sample: 591072-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/10/10 12:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.440	30.000	91	75-125	

Lab Batch #: 835596

Sample: 591072-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/10/10 13:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.680	30.000	92	75-125	

Lab Batch #: 835596

Sample: 400068-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/10/10 13:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.390	30.000	91	75-125	

Lab Batch #: 835596

Sample: 400068-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/10/10 14:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.360	30.000	95	75-125	

Lab Batch #: 835600

Sample: 591075-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/10/10 11:39

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	26.5	30.0	88	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 400068,

Project ID: 2008-113

Lab Batch #: 835600

Sample: 591075-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/10/10 12:25

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.4	30.0	91	75-125	

Lab Batch #: 835600

Sample: 400068-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/10/10 13:59

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.4	30.0	91	75-125	

Lab Batch #: 835600

Sample: 400068-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/10/10 14:22

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.4	30.0	95	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 400068

Project ID:

2008-113

Lab Batch #: 835596

Sample: 591072-1-BKS

Matrix: Air

Date Analyzed: 12/10/2010

Date Prepared: 12/10/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	ND	10.000	9.8300	98	75-125	
Toluene	ND	10.000	9.5100	95	70-125	
Ethylbenzene	ND	10.000	9.5300	95	71-129	
m,p-Xylenes	ND	20.000	18.330	92	70-131	
o-Xylene	ND	10.000	9.7400	97	71-133	

Lab Batch #: 835600

Sample: 591075-1-BKS

Matrix: Air

Date Analyzed: 12/10/2010

Date Prepared: 12/10/2010

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	ND	500	443	89	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 400068

Lab Batch #: 835596

Project ID: 2008-113

Date Analyzed: 12/10/2010 14:22

Date Prepared: 12/10/2010

Analyst: JUJ

QC- Sample ID: 400068-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	1.0700	1.1000	3	35	
Toluene	17.880	19.040	6	35	
Ethylbenzene	12.370	12.630	2	35	
m,p-Xylenes	12.480	13.310	6	35	
o-Xylene	5.6500	6.1100	8	35	

Lab Batch #: 835600

Date Analyzed: 12/10/2010 14:22

Date Prepared: 12/10/2010

Analyst: JUJ

QC- Sample ID: 400068-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	432	442	2	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

Analytical Report 404999

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

02-FEB-11



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



02-FEB-11

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **404999**
EK Queen Pearce
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 404999. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

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We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II

Odessa Laboratory Manager

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Sample Cross Reference 404999



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge - 7	A	Jan-27-11 13:30		404999-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 404999

Report Date: 02-FEB-11

Date Received: 01/27/2011

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 404999

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Thu Jan-27-11 04:30 pm

Report Date: 02-FEB-11

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 404999-001 Field Id: SVE Discharge - 7 Depth: Matrix: AIR Sampled: Jan-27-11 13:30					
BTEX by EPA 8021 SUB: T104704215-TX	Extracted: Jan-31-11 15:29 Analyzed: Jan-31-11 15:29 Units/RL: ppmv RL					
Benzene	ND 1.0000					
Toluene	10.200 1.0000					
Ethylbenzene	8.7500 1.0000					
m,p-Xylenes	8.6700 2.0000					
o-Xylene	3.5700 1.0000					
Total Xylenes	12.240 1.0000					
Total BTEX	31.190 1.0000					
TPH Gasoline Range Organics by SW 8015 SUB: T104704215-TX	Extracted: Jan-31-11 15:29 Analyzed: Jan-31-11 15:29 Units/RL: ppmv RL					
TPH-GRO	284 100					

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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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(361) 884-0371	(361) 884-9116

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 404999,

Project ID: 2008-113

Lab Batch #: 841933

Sample: 594630-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/31/11 13:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	32.200	30.000	107	75-125	

Lab Batch #: 841933

Sample: 594630-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/31/11 14:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	33.070	30.000	110	75-125	

Lab Batch #: 841933

Sample: 404999-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/31/11 15:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	34.700	30.000	116	75-125	

Lab Batch #: 841933

Sample: 404999-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/31/11 15:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	32.980	30.000	110	75-125	

Lab Batch #: 841927

Sample: 594629-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/31/11 13:09

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	32.1	30.0	107	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 404999,

Project ID: 2008-113

Lab Batch #: 841927

Sample: 594629-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/31/11 13:55

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	32.2	30.0	107	75-125	

Lab Batch #: 841927

Sample: 404999-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/31/11 15:29

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	34.7	30.0	116	75-125	

Lab Batch #: 841927

Sample: 404999-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/31/11 15:52

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	33.0	30.0	110	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 404999

Project ID:

2008-113

Lab Batch #: 841933

Sample: 594630-1-BKS

Matrix: Air

Date Analyzed: 01/31/2011

Date Prepared: 01/31/2011

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<1.0000	10.000	8.8000	88	75-125	
Toluene	<1.0000	10.000	9.3500	94	70-125	
Ethylbenzene	<1.0000	10.000	10.690	107	71-129	
m,p-Xylenes	<2.0000	20.000	21.890	109	70-131	
o-Xylene	<1.0000	10.000	11.320	113	71-133	

Lab Batch #: 841927

Sample: 594629-1-BKS

Matrix: Air

Date Analyzed: 01/31/2011

Date Prepared: 01/31/2011

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<100	500	429	86	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 404999

Lab Batch #: 841933

Project ID: 2008-113

Date Analyzed: 01/31/2011 15:52

Date Prepared: 01/31/2011

Analyst: JUJ

QC- Sample ID: 404999-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<1.0000	<1.0000	NC	35	
Toluene	10.200	10.420	2	35	
Ethylbenzene	8.7500	9.0200	3	35	
m,p-Xylenes	8.6700	8.5400	2	35	
o-Xylene	3.5700	3.6900	3	35	

Lab Batch #: 841927

Date Analyzed: 01/31/2011 15:52

Date Prepared: 01/31/2011

Analyst: JUJ

QC- Sample ID: 404999-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	284	297	4	30	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Phone: 432-563-1800
Fax: 432-563-1713

Project Name: EK Queen Pearce

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA-J. Henry

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: bjarguijo@basinenv.com

Final 1.00C



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: Basin Env. / Plains
Date/Time: 127-11 16:30
Lab ID #: 404999
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	Yes	No	<u>None</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>Amb</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis

Analytical Report 408105

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

04-MAR-11



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

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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), 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)



04-MAR-11

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **408105**
EK Queen Pearce
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 408105. 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. 408105 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 408105



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-8	A	Feb-28-11 08:30		408105-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 408105

Report Date: 04-MAR-11

Date Received: 02/28/2011

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 408105

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Feb-28-11 02:00 pm

Report Date: 04-MAR-11

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 408105-001 Field Id: SVE Discharge-8 Depth: Matrix: AIR Sampled: Feb-28-11 08:30					
BTEX by EPA 8021 SUB: T104704215-TX	Extracted: Mar-01-11 21:29 Analyzed: Mar-01-11 21:29 Units/RL: ppmv RL					
Benzene	ND 1.00					
Toluene	4.21 1.00					
Ethylbenzene	3.76 1.00					
m,p-Xylenes	4.49 2.00					
o-Xylene	1.94 1.00					
Total Xylenes	6.43 1.00					
Total BTEX	14.4 1.00					
TPH Gasoline Range Organics by SW 8015 SUB: T104704215-TX	Extracted: Mar-01-11 21:29 Analyzed: Mar-01-11 21:29 Units/RL: ppmv RL					
TPH-GRO	124 100					

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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 2505 North Falkenburg Rd, Tampa, FL 33619
 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
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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

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 408105,

Project ID: 2008-113

Lab Batch #: 845877

Sample: 596903-1-BLK / BLK

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 03/01/11 16:48

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.0	30.0	97	75-125	

Lab Batch #: 845877

Sample: 596903-1-BKS / BKS

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 03/01/11 17:35

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	32.5	30.0	108	75-125	

Lab Batch #: 845877

Sample: 408048-002 D / MD

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 03/01/11 18:45

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	32.0	30.0	107	75-125	

Lab Batch #: 845877

Sample: 408105-001 / SMP

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 03/01/11 21:29

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	33.9	30.0	113	75-125	

Lab Batch #: 845859

Sample: 596895-1-BKS / BKS

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 03/01/11 15:15

SURROGATE RECOVERY STUDY					
TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	28.5	30.0	95	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 408105,

Project ID: 2008-113

Lab Batch #: 845859

Sample: 596895-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 03/01/11 16:48

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29.0	30.0	97	75-125	

Lab Batch #: 845859

Sample: 408048-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 03/01/11 18:45

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	32.0	30.0	107	75-125	

Lab Batch #: 845859

Sample: 408105-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 03/01/11 21:29

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	33.9	30.0	113	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 408105

Project ID:

2008-113

Lab Batch #: 845877

Sample: 596903-1-BKS

Matrix: Air

Date Analyzed: 03/01/2011

Date Prepared: 03/01/2011

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<1.00	10.0	8.76	88	75-125	
Toluene	<1.00	10.0	7.88	79	70-125	
Ethylbenzene	<1.00	10.0	8.39	84	71-129	
m,p-Xylenes	<2.00	20.0	17.3	87	70-131	
o-Xylene	<1.00	10.0	8.10	81	71-133	

Lab Batch #: 845859

Sample: 596895-1-BKS

Matrix: Air

Date Analyzed: 03/01/2011

Date Prepared: 03/01/2011

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<100	500	404	81	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 408105

Lab Batch #: 845877

Project ID: 2008-113

Date Analyzed: 03/01/2011 18:45

Date Prepared: 03/01/2011

Analyst: JUJ

QC- Sample ID: 408048-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	622	689	10	35	
Toluene	1080	1250	15	35	
Ethylbenzene	158	185	16	35	
m,p-Xylenes	451	538	18	35	
o-Xylene	116	142	20	35	

Lab Batch #: 845859

Date Analyzed: 03/01/2011 18:45

Date Prepared: 03/01/2011

Analyst: JUJ

QC- Sample ID: 408048-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	20400	22100	8	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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Phone: 432-563-1800
Fax: 432-563-1713

Project Name: EK Queen Pearce

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA-J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: bjarguijo@basinenv.com

Final 1.000



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: Basin Environmental
Date/Time: 2-28-11 2:00
Lab ID #: 408105
Initials: RM

Sample Receipt Checklist

1. Samples on ice?	Blue	~~Water~~ ^{AE}	<u>No</u>	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>Amb</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis

Analytical Report 412907

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

18-APR-11



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



18-APR-11

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **412907**
EK Queen Pearce
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 412907. 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. 412907 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 412907



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-9	A	Apr-12-11 08:30		412907-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 412907

Report Date: 18-APR-11

Date Received: 04/12/2011

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 412907

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Project Id: 2008-113

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Tue Apr-12-11 12:07 pm

Report Date: 18-APR-11

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 412907-001 Field Id: SVE Discharge-9 Depth: Matrix: AIR Sampled: Apr-12-11 08:30					
BTEX by EPA 8021 SUB: T104704215-TX	Extracted: Apr-14-11 12:26 Analyzed: Apr-14-11 12:26 Units/RL: ppmv RL					
Benzene	ND 1.00					
Toluene	7.69 1.00					
Ethylbenzene	6.31 1.00					
m,p-Xylenes	4.91 2.00					
o-Xylene	2.85 1.00					
Total Xylenes	7.76 1.00					
Total BTEX	21.8 1.00					
TPH Gasoline Range Organics by SW 8015 SUB: T104704215-TX	Extracted: Apr-14-11 12:26 Analyzed: Apr-14-11 12:26 Units/RL: ppmv RL					
TPH-GRO	186 100					

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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 12600 West I-20 East, Odessa, TX 79765
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(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 412907,

Project ID: 2008-113

Lab Batch #: 852232

Sample: 600591-1-BLK / BLK

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 04/14/11 12:05

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	28.0	30.0	93	75-125	

Lab Batch #: 852232

Sample: 412907-001 / SMP

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 04/14/11 12:26

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	25.5	30.0	85	75-125	

Lab Batch #: 852232

Sample: 412907-001 D / MD

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 04/14/11 12:46

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	30.0	30.0	100	75-125	

Lab Batch #: 852232

Sample: 600591-1-BKS / BKS

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 04/14/11 13:29

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.8	30.0	99	75-125	

Lab Batch #: 852230

Sample: 600595-1-BKS / BKS

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 04/14/11 11:01

SURROGATE RECOVERY STUDY					
TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	28.8	30.0	96	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 412907,

Project ID: 2008-113

Lab Batch #: 852230

Sample: 600595-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/14/11 12:05

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	28.0	30.0	93	75-125	

Lab Batch #: 852230

Sample: 412907-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/14/11 12:26

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	25.5	30.0	85	75-125	

Lab Batch #: 852230

Sample: 412907-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/14/11 12:46

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	30.0	30.0	100	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 412907

Project ID:

2008-113

Lab Batch #: 852232

Sample: 600591-1-BKS

Matrix: Air

Date Analyzed: 04/14/2011

Date Prepared: 04/14/2011

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<1.00	10.0	10.2	102	75-125	
Toluene	<1.00	10.0	9.71	97	70-125	
Ethylbenzene	<1.00	10.0	8.28	83	71-129	
m,p-Xylenes	<2.00	20.0	15.5	78	70-131	
o-Xylene	<1.00	10.0	8.15	82	71-133	

Lab Batch #: 852230

Sample: 600595-1-BKS

Matrix: Air

Date Analyzed: 04/14/2011

Date Prepared: 04/14/2011

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<100	500	562	112	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 412907

Lab Batch #: 852232

Project ID: 2008-113

Date Analyzed: 04/14/2011 12:46

Date Prepared: 04/14/2011

Analyst: JUJ

QC- Sample ID: 412907-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<1.00	<1.00	0	35	
Toluene	7.69	8.71	12	35	
Ethylbenzene	6.31	6.68	6	35	
m,p-Xylenes	4.91	5.21	6	35	
o-Xylene	2.85	2.78	2	35	

Lab Batch #: 852230

Date Analyzed: 04/14/2011 12:46

Date Prepared: 04/14/2011

Analyst: JUJ

QC- Sample ID: 412907-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	186	182	2	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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Phone: 432-563-1800
Fax: 432-563-1713

Project Name: **EK Queen Pearce**

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA-J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: bjarguijo@basinenv.com

ORDER #:

412907

[illegible]

Special Instructions:

Relinquished by: <i>DDA</i>	Date 7-12-11	Time 12:07	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: <i>Andrew Elam</i>	Date 4-12-11	Time 12:07

Laboratory Comments:	
Sample Containers Intact?	
VOCs Free of Headspace?	

Labels on container(s)
Custody seals on container(s)
Custody seals on cooler(s)

Sample Hand Delivered by Sampler/Client Rep. ?
by Courier? UPS DHL FedEx Lone Star
Temperature Upon Receipt: °C

Amb. °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 / Nonconformance Report - Sample Log-In

Client: Basin Env. / Plains
Date/Time: 4-12-11 12:07
Lab ID #: 412907
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	Yes	No	<u>None</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>Amb</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis

Analytical Report 416385

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

17-MAY-11



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



17-MAY-11

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **416385**
EK Queen Pearce
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 416385. 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.

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Sample Cross Reference 416385



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-10	A	May-12-11 00:00		416385-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 416385

Report Date: 17-MAY-11

Date Received: 05/12/2011

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 416385

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Thu May-12-11 02:10 pm

Report Date: 17-MAY-11

Project Location: Lea County, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 416385-001 Field Id: SVE Discharge-10 Depth: Matrix: AIR Sampled: May-12-11 00:00					
BTEX by EPA 8021	Extracted: May-16-11 16:42 Analyzed: May-16-11 16:42 Units/RL: ppmv RL					
Benzene	ND 1.00					
Toluene	3.45 1.00					
Ethylbenzene	2.24 1.00					
m,p-Xylenes	ND 2.00					
o-Xylene	ND 1.00					
Total Xylenes	ND 1.00					
Total BTEX	5.69 1.00					
TPH Gasoline Range Organics by SW 8015	Extracted: May-16-11 16:42 Analyzed: May-16-11 16:42 Units/RL: ppmv RL					
TPH-GRO	ND 100					

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Brent Barron, II
Odessa Laboratory Manager

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- 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.
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- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

LOD Limit of Detection

LOQ Limit of Quantitation

DL Method Detection Limit

*** Outside XENCO's scope of NELAC Accreditation.**

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 12600 West I-20 East, Odessa, TX 79765
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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 416385,

Project ID: 2008-113

Lab Batch #: 856281

Sample: 602915-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/16/11 14:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	31.7	30.0	106	75-125	

Lab Batch #: 856281

Sample: 602915-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/16/11 15:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29.7	30.0	99	75-125	

Lab Batch #: 856281

Sample: 416081-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/16/11 15:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.3	30.0	101	75-125	

Lab Batch #: 856281

Sample: 416385-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/16/11 16:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.3	30.0	101	75-125	

Lab Batch #: 856326

Sample: 602948-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/16/11 13:31

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.1	30.0	100	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 416385,

Project ID: 2008-113

Lab Batch #: 856326

Sample: 602948-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/16/11 15:14

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29.7	30.0	99	75-125	

Lab Batch #: 856326

Sample: 416081-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/16/11 15:58

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.3	30.0	101	75-125	

Lab Batch #: 856326

Sample: 416385-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/16/11 16:42

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.3	30.0	101	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 416385

Project ID:

2008-113

Lab Batch #: 856281

Sample: 602915-1-BKS

Matrix: Air

Date Analyzed: 05/16/2011

Date Prepared: 05/16/2011

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<1.00	10.0	9.92	99	75-125	
Toluene	<1.00	10.0	9.82	98	70-125	
Ethylbenzene	<1.00	10.0	8.22	82	71-129	
m,p-Xylenes	<2.00	20.0	14.4	72	70-131	
o-Xylene	<1.00	10.0	8.48	85	71-133	

Lab Batch #: 856326

Sample: 602948-1-BKS

Matrix: Air

Date Analyzed: 05/16/2011

Date Prepared: 05/16/2011

Analyst: JUJ

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<100	500	489	98	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 416385

Lab Batch #: 856281

Project ID: 2008-113

Date Analyzed: 05/16/2011 15:58

Date Prepared: 05/16/2011

Analyst: JUJ

QC- Sample ID: 416081-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<1.00	<1.00	0	35	
Toluene	<1.00	<1.00	0	35	
Ethylbenzene	<1.00	<1.00	0	35	
m,p-Xylenes	<2.00	<2.00	0	35	
o-Xylene	<1.00	<1.00	0	35	
Total Xylenes	<2.00	<2.00	0	35	
Total BTEX	<2.00	<2.00	0	35	

Lab Batch #: 856326

Date Analyzed: 05/16/2011 15:58

Date Prepared: 05/16/2011

Analyst: JUJ

QC- Sample ID: 416081-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	<100	<100	0	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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Phone: 432-563-1800
Fax: 432-563-1713

Project Name: **EK Queen Pearce**

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA-J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: bjarguijo@basinenv.com

ORDER #:

416385

Special Instructions:

FedEx Lone Star

Time

Time

Amb. °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 / Nonconformance Report - Sample Log-In

Client: Basin Env. / Plains
Date/Time: 5:12:11 14:10
Lab ID #: 416385
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	Yes	No	<u>None</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>Amb</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
 - ☐ Initial and Backup Temperature confirm out of temperature conditions
 - ☐ Client understands and would like to proceed with analysis

Analytical Report 421327

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

01-JUL-11

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-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)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



01-JUL-11

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **421327**
EK Queen Pearce
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 421327. 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. 421327 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 421327



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-11	A	Jun-28-11 09:45		421327-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 421327

Report Date: 01-JUL-11

Date Received: 06/28/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 421327

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Tue Jun-28-11 02:34 pm

Report Date: 01-JUL-11

Project Location: Lea County, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 421327-001 Field Id: SVE Discharge-11 Depth: Matrix: AIR Sampled: Jun-28-11 09:45					
BTEX by EPA 8021 SUB: AZ0765	Extracted: Jun-29-11 18:12 Analyzed: Jun-29-11 18:12 Units/RL: ppmv RL					
Benzene	ND 1.00					
Toluene	1.97 1.00					
Ethylbenzene	2.62 1.00					
m,p-Xylenes	2.93 2.00					
o-Xylene	1.31 1.00					
Total Xylenes	4.24 1.00					
Total BTEX	8.83 1.00					
TPH Gasoline Range Organics by SW 8015 SUB: AZ0765	Extracted: Jun-29-11 18:12 Analyzed: Jun-29-11 18:12 Units/RL: ppmv RL					
TPH-GRO	ND 100					

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 affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- LOD** Limit of Detection
- LOQ** Limit of Quantitation
- DL** Method Detection Limit
- NC** Non-Calculable
- + Outside XENCO's scope of NELAC Accreditation.

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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 421327,

Project ID: 2008-113

Lab Batch #: 862197

Sample: 606898-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/29/11 13:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.8	30.0	93	75-125	

Lab Batch #: 862197

Sample: 606898-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/29/11 14:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.5	30.0	102	75-125	

Lab Batch #: 862197

Sample: 421190-004 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/29/11 17:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.0	30.0	90	75-125	

Lab Batch #: 862197

Sample: 421327-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/29/11 18:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.8	30.0	103	75-125	

Lab Batch #: 862184

Sample: 606892-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/29/11 12:38

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	27.1	30.0	90	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 421327,

Project ID: 2008-113

Lab Batch #: 862184

Sample: 606892-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/29/11 14:09

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.5	30.0	102	75-125	

Lab Batch #: 862184

Sample: 421189-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/29/11 15:15

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	26.9	30.0	90	75-125	

Lab Batch #: 862184

Sample: 421327-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/29/11 18:12

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.8	30.0	103	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 421327

Project ID:

2008-113

Lab Batch #: 862197

Sample: 606898-1-BKS

Matrix: Air

Date Analyzed: 06/29/2011

Date Prepared: 06/29/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<1.00	10.0	8.22	82	75-125	
Toluene	<1.00	10.0	7.65	77	70-125	
Ethylbenzene	<1.00	10.0	7.77	78	71-129	
m,p-Xylenes	<2.00	20.0	15.2	76	70-131	
o-Xylene	<1.00	10.0	7.15	72	71-133	

Lab Batch #: 862184

Sample: 606892-1-BKS

Matrix: Air

Date Analyzed: 06/29/2011

Date Prepared: 06/29/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<100	500	392	78	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 421327

Lab Batch #: 862197

Project ID: 2008-113

Date Analyzed: 06/29/2011 17:28

Date Prepared: 06/29/2011

Analyst: BEC

QC- Sample ID: 421190-004 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<1.00	<1.00	0	35	
Toluene	1.73	1.72	1	35	
Ethylbenzene	1.17	1.17	0	35	
m,p-Xylenes	3.04	2.64	14	35	
o-Xylene	1.16	1.07	8	35	

Lab Batch #: 862184

Date Analyzed: 06/29/2011 15:15

Date Prepared: 06/29/2011

Analyst: BEC

QC- Sample ID: 421189-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	1850	2000	8	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



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: Placius
Date/Time: 4/28/11 2:34
Lab ID #: 431327
Initials: HH

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>amb</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: send to Xenco-Houston

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis

Analytical Report 425094

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

15-AUG-11

Collected By: Client



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12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



15-AUG-11

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **425094**
EK Queen Pearce
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 425094. 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. 425094 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 425094



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-12	A	08-04-11 09:50		425094-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 425094

Report Date: 15-AUG-11

Date Received: 08/04/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 425094

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Thu Aug-04-11 01:39 pm

Report Date: 15-AUG-11

Project Location: Lea County, NM

Project Manager: Brent Barron II

Analysis Requested	Lab Id: 425094-001 Field Id: SVE Discharge-12 Depth: Matrix: AIR Sampled: Aug-04-11 09:50					
BTEX by EPA 8021	Extracted: Aug-05-11 22:02 Analyzed: Aug-05-11 22:02 Units/RL: ppmv RL					
Benzene	ND 1.00					
Toluene	1.01 1.00					
Ethylbenzene	1.35 1.00					
m,p-Xylenes	2.05 2.00					
o-Xylene	ND 1.00					
Total Xylenes	2.05 1.00					
Total BTEX	4.41 1.00					
BTEX by EPA 8021	Extracted: Aug-08-11 14:21 Analyzed: Aug-08-11 14:21 Units/RL: ppmv RL					
Benzene	ND 1.00					
Toluene	1.27 1.00					
Ethylbenzene	1.52 1.00					
m,p-Xylenes	ND 2.00					
o-Xylene	ND 1.00					
Total Xylenes	ND 1.00					
Total BTEX	2.79 1.00					
TPH Gasoline Range Organics by SW 8015	Extracted: Aug-11-11 17:28 Analyzed: Aug-11-11 20:29 Units/RL: ppmv RL					
TPH-GRO	101 100					

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 affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 425094,

Project ID: 2008-113

Lab Batch #: 866697

Sample: 425094-001 / SMP

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 08/05/11 22:02

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.0	30.0	97	75-125	

Lab Batch #: 866844

Sample: 425094-001 / SMP

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 08/08/11 14:21

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.0	30.0	97	75-125	

Lab Batch #: 867078

Sample: 425094-001 / SMP

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 08/11/11 20:29

SURROGATE RECOVERY STUDY					
TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	34.5	30.0	115	75-125	

Lab Batch #: 866697

Sample: 609485-1-BLK / BLK

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 08/05/11 17:17

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.0	30.0	97	75-125	

Lab Batch #: 866844

Sample: 609619-1-BLK / BLK

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 08/08/11 12:58

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	28.2	30.0	94	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 425094,

Project ID: 2008-113

Lab Batch #: 867078

Sample: 609754-1-BLK / BLK

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 08/11/11 18:18

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	34.1	30.0	114	75-125	

Lab Batch #: 866697

Sample: 609485-1-BKS / BKS

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 08/05/11 16:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	31.1	30.0	104	75-125	

Lab Batch #: 866844

Sample: 609619-1-BKS / BKS

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 08/08/11 12:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	28.7	30.0	96	75-125	

Lab Batch #: 867078

Sample: 609754-1-BKS / BKS

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 08/11/11 17:12

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	35.0	30.0	117	75-125	

Lab Batch #: 866844

Sample: 425094-001 D / MD

Batch: 1 **Matrix:** Air

Units: ppmv

Date Analyzed: 08/08/11 14:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.4	30.0	98	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 425094,

Project ID: 2008-113

Lab Batch #: 867078

Sample: 424771-003 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 08/11/11 20:08

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	30.8	30.0	103	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 425094

Project ID:

2008-113

Lab Batch #: 866697

Sample: 609485-1-BKS

Matrix: Air

Date Analyzed: 08/05/2011

Date Prepared: 08/05/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<1.00	10.0	9.86	99	75-125	
Toluene	<1.00	10.0	10.1	101	70-125	
Ethylbenzene	<1.00	10.0	11.5	115	71-129	
m,p-Xylenes	<2.00	20.0	23.2	116	70-131	
o-Xylene	<1.00	10.0	11.0	110	71-133	

Lab Batch #: 866844

Sample: 609619-1-BKS

Matrix: Air

Date Analyzed: 08/08/2011

Date Prepared: 08/08/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<1.00	10.0	10.6	106	75-125	
Toluene	<1.00	10.0	10.4	104	70-125	
Ethylbenzene	<1.00	10.0	11.6	116	71-129	
m,p-Xylenes	<2.00	20.0	22.2	111	70-131	
o-Xylene	<1.00	10.0	11.0	110	71-133	

Lab Batch #: 867078

Sample: 609754-1-BKS

Matrix: Air

Date Analyzed: 08/11/2011

Date Prepared: 08/11/2011

Analyst: ROL

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
TPH-GRO	<100	500	512	102	71-130	

Blank Spike Recovery [D] = 100*[C]/[B]

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 425094

Lab Batch #: 866844

Project ID: 2008-113

Date Analyzed: 08/08/2011 14:44

Date Prepared: 08/08/2011

Analyst: BEC

QC- Sample ID: 425094-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<1.00	<1.00	0	35	
Toluene	1.27	1.32	4	35	
Ethylbenzene	1.52	1.75	14	35	
m,p-Xylenes	<2.00	<2.00	0	35	
o-Xylene	<1.00	<1.00	0	35	

Lab Batch #: 867078

Date Analyzed: 08/11/2011 20:08

Date Prepared: 08/11/2011

Analyst: ROL

QC- Sample ID: 424771-003 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	44800	46800	4	30	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

**XENCO Laboratories**

Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains
Date/Time: 8/4/11 1:39
Lab ID #: 425094
Initials: AH

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>11</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: #16) sub to Xenco Houston

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 427278

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

15-SEP-11

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



15-SEP-11

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **427278**
EK Queen Pearce
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 427278. 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. 427278 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 427278



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge - 13	A	09-08-11 09:25		427278-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 427278

Report Date: 15-SEP-11

Date Received: 09/08/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 427278

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Thu Sep-08-11 01:30 pm

Report Date: 15-SEP-11

Project Location: Lea County, NM

Project Manager: Brent Barron II

Analysis Requested	Lab Id: 427278-001 Field Id: SVE Discharge - 13 Depth: Matrix: AIR Sampled: Sep-08-11 09:25					
BTEX by EPA 8021 SUB: E871002	Extracted: Sep-12-11 00:13 Analyzed: Sep-12-11 00:13 Units/RL: ppmv RL					
Benzene	ND 1.00					
Toluene	1.75 1.00					
Ethylbenzene	2.00 1.00					
m,p-Xylenes	ND 2.00					
o-Xylene	ND 1.00					
a,a,a-Trifluorotoluene	30.0					
Total Xylenes	ND 1.00					
Total BTEX	3.75 1.00					
TPH Gasoline Range Organics by SW 8015 SUB: E871002	Extracted: Sep-09-11 19:17 Analyzed: Sep-09-11 19:17 Units/RL: ppmv RL					
TPH-GRO	ND 100					

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 affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

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 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 427278,

Project ID: 2008-113

Lab Batch #: 869677

Sample: 427278-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/09/11 19:17

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	26.0	30.0	87	75-125	

Lab Batch #: 869673

Sample: 427278-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/12/11 00:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	33.5	30.0	112	75-125	

Lab Batch #: 869677

Sample: 611204-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/09/11 12:33

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	26.0	30.0	87	75-125	

Lab Batch #: 869673

Sample: 611203-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/11/11 17:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	32.2	30.0	107	75-125	

Lab Batch #: 869677

Sample: 611204-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/09/11 11:45

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	26.3	30.0	88	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 427278,

Project ID: 2008-113

Lab Batch #: 869673

Sample: 611203-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/11/11 16:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	34.7	30.0	116	75-125	

Lab Batch #: 869677

Sample: 427052-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/09/11 13:20

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	26.4	30.0	88	75-125	

Lab Batch #: 869673

Sample: 427247-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 09/11/11 22:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	33.2	30.0	111	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 427278

Project ID:

2008-113

Lab Batch #: 869673

Sample: 611203-1-BKS

Matrix: Air

Date Analyzed: 09/11/2011

Date Prepared: 09/11/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<1.00	10.0	9.23	92	75-125	
Toluene	<1.00	10.0	10.3	103	70-125	
Ethylbenzene	<1.00	10.0	11.8	118	71-129	
m,p-Xylenes	<2.00	20.0	21.3	107	70-131	
o-Xylene	<1.00	10.0	10.7	107	71-133	

Lab Batch #: 869677

Sample: 611204-1-BKS

Matrix: Air

Date Analyzed: 09/09/2011

Date Prepared: 09/09/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<100	500	439	88	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 427278

Lab Batch #: 869673

Project ID: 2008-113

Date Analyzed: 09/11/2011 22:43

Date Prepared: 09/11/2011

Analyst: BEC

QC- Sample ID: 427247-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<1.00	<1.00	0	35	
Toluene	<1.00	<1.00	0	35	
Ethylbenzene	<1.00	<1.00	0	35	
m,p-Xylenes	<2.00	<2.00	0	35	
o-Xylene	<1.00	<1.00	0	35	

Lab Batch #: 869677

Date Analyzed: 09/09/2011 13:20

Date Prepared: 09/09/2011

Analyst: BEC

QC- Sample ID: 427052-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	8830	8960	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

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 J. Arguijo**

Project Name: **EK Queen Pearce**

Company Name **Basin Environmental Service Technologies, LLC**

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: (575)396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: *Darcelan Wain*

e-mail: bjarguijo@basinenv.com[illegible]



XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains
Date/Time: 9/8/11 13:30
Lab ID #: 427278
Initials: DE

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
6. Any missing / extra samples?	Yes	No		
7. Chain of custody signed when relinquished / received?	Yes	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Yes	No		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	N/A	
17. VOC sample have zero head space?	Yes	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs (amb) °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis

Analytical Report 429240

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

14-OCT-11

Collected By: Client



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12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



14-OCT-11

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **429240**
EK Queen Pearce
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 429240. 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. 429240 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 429240



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-14	A	10-10-11 10:30		429240-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 429240

Report Date: 14-OCT-11

Date Received: 10/10/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 429240

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Mon Oct-10-11 02:40 pm

Report Date: 14-OCT-11

Project Location: Lea County, NM

Project Manager: Brent Barron II

Analysis Requested	Lab Id:	429240-001					
	Field Id:	SVE Discharge-14					
	Depth:						
	Matrix:	AIR					
	Sampled:	Oct-10-11 10:30					
BTEX by EPA 8021 SUB: E871002	Extracted:	Oct-11-11 15:03					
	Analyzed:	Oct-11-11 15:03					
	Units/RL:	ppmv RL					
Benzene		ND 1.00					
Toluene		1.88 1.00					
Ethylbenzene		2.45 1.00					
m,p-Xylenes		2.82 2.00					
o-Xylene		4.78 1.00					
Total Xylenes		7.60 1.00					
Total BTEX		11.9 1.00					
TPH Gasoline Range Organics by SW 8015 SUB: E871002	Extracted:	Oct-11-11 15:03					
	Analyzed:	Oct-11-11 15:03					
	Units/RL:	ppmv RL					
TPH-GRO		ND 100					

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Brent Barron II
Odessa Laboratory Manager

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- 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 quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
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- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

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(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 429240,

Project ID: 2008-113

Lab Batch #: 872278

Sample: 429240-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/11/11 15:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	31.3	30.0	104	75-125	

Lab Batch #: 872280

Sample: 429240-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/11/11 15:03

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	31.3	30.0	104	75-125	

Lab Batch #: 872278

Sample: 612656-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/11/11 14:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	28.8	30.0	96	75-125	

Lab Batch #: 872280

Sample: 612660-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/11/11 14:41

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	28.8	30.0	96	75-125	

Lab Batch #: 872280

Sample: 612660-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/11/11 12:06

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.3	30.0	98	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 429240,

Project ID: 2008-113

Lab Batch #: 872278

Sample: 612656-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/11/11 13:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.6	30.0	99	75-125	

Lab Batch #: 872278

Sample: 429145-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/11/11 15:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	30.5	30.0	102	75-125	

Lab Batch #: 872280

Sample: 429240-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/11/11 17:59

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.9	30.0	100	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 429240

Project ID:

2008-113

Lab Batch #: 872278

Sample: 612656-1-BKS

Matrix: Air

Date Analyzed: 10/11/2011

Date Prepared: 10/11/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<1.00	10.0	8.21	82	75-125	
Toluene	<1.00	10.0	7.90	79	70-125	
Ethylbenzene	<1.00	10.0	7.89	79	71-129	
m,p-Xylenes	<2.00	20.0	16.5	83	70-131	
o-Xylene	<1.00	10.0	9.36	94	71-133	

Lab Batch #: 872280

Sample: 612660-1-BKS

Matrix: Air

Date Analyzed: 10/11/2011

Date Prepared: 10/11/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<100	500	563	113	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 429240

Lab Batch #: 872278

Project ID: 2008-113

Date Analyzed: 10/11/2011 15:46

Date Prepared: 10/11/2011

Analyst: BEC

QC- Sample ID: 429145-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<1.00	<1.00	0	35	U
Toluene	<1.00	<1.00	0	35	U
Ethylbenzene	<1.00	<1.00	0	35	U
m,p-Xylenes	<2.00	<2.00	0	35	U
o-Xylene	<1.00	<1.00	0	35	U

Lab Batch #: 872280

Date Analyzed: 10/11/2011 17:59

Date Prepared: 10/11/2011

Analyst: BEC

QC- Sample ID: 429240-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	<100	<100	0	30	U

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: Ben J. Arguijo

Project Name: **EK Queen Pearce**

Company Name Basin Environmental Service Technologies, LLC

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

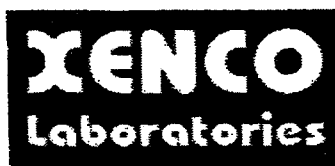
Telephone No: (575)396-2378

Fax No: **(575) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Dakotah Ward

e-mail: bjarguijo@basinenv.com[illegible]



XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains
Date/Time: 10/10/11 14:40
Lab ID #: 429240
Initials: AA

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
6. Any missing / extra samples?	Yes	No		
7. Chain of custody signed when relinquished / received?	Yes	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Yes	No		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	N/A	
17. VOC sample have zero head space?	Yes	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>amb</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis

Analytical Report 432430

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

07-DEC-11

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



07-DEC-11

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **432430**
EK Queen Pearce
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 432430. 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. 432430 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 432430



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-15	A	11-30-11 10:10		432430-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 432430

Report Date: 07-DEC-11

Date Received: 11/30/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 432430

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Wed Nov-30-11 02:37 pm

Report Date: 07-DEC-11

Project Location: Lea County, NM

Project Manager: Brent Barron II

Analysis Requested	Lab Id:	432430-001					
	Field Id:	SVE Discharge-15					
	Depth:						
	Matrix:	AIR					
	Sampled:	Nov-30-11 10:10					
BTEX by EPA 8021 SUB: TX104704215	Extracted:	Dec-03-11 16:37					
	Analyzed:	Dec-03-11 16:37					
	Units/RL:	ppmv RL					
Benzene		ND 1.00					
Toluene		1.12 1.00					
Ethylbenzene		1.28 1.00					
m,p-Xylenes		ND 2.00					
o-Xylene		ND 1.00					
Total Xylenes		ND 1.00					
Total BTEX		2.40 1.00					
TPH Gasoline Range Organics by SW 8015 SUB: TX104704215	Extracted:	Dec-03-11 16:37					
	Analyzed:	Dec-03-11 16:37					
	Units/RL:	ppmv RL					
TPH-GRO		ND 100					

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 affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

^ NELAC or State program does not offer Accreditation at this time.

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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 432430,

Project ID: 2008-113

Lab Batch #: 876230

Sample: 432430-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/03/11 16:37

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	32.3	30.0	108	75-125	

Lab Batch #: 876238

Sample: 432430-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/03/11 16:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	32.3	30.0	108	75-125	

Lab Batch #: 876230

Sample: 614943-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/03/11 15:49

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	31.1	30.0	104	75-125	

Lab Batch #: 876238

Sample: 614948-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/03/11 15:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	31.1	30.0	104	75-125	

Lab Batch #: 876238

Sample: 614948-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/03/11 13:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.3	30.0	98	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 432430,

Project ID: 2008-113

Lab Batch #: 876230

Sample: 614943-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/03/11 15:01

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.3	30.0	98	75-125	

Lab Batch #: 876230

Sample: 432430-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/03/11 17:01

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	27.6	30.0	92	75-125	

Lab Batch #: 876238

Sample: 432430-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/03/11 17:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	27.6	30.0	92	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 432430

Project ID:

2008-113

Lab Batch #: 876238

Sample: 614948-1-BKS

Matrix: Air

Date Analyzed: 12/03/2011

Date Prepared: 12/03/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<1.00	10.0	10.1	101	75-125	
Toluene	<1.00	10.0	9.89	99	70-125	
Ethylbenzene	<1.00	10.0	10.4	104	71-129	
m,p-Xylenes	<2.00	20.0	20.1	101	70-131	
o-Xylene	<1.00	10.0	10.1	101	71-133	

Lab Batch #: 876230

Sample: 614943-1-BKS

Matrix: Air

Date Analyzed: 12/03/2011

Date Prepared: 12/03/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<100	500	415	83	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 432430

Lab Batch #: 876238

Project ID: 2008-113

Date Analyzed: 12/03/2011 17:01

Date Prepared: 12/03/2011

Analyst: BEC

QC- Sample ID: 432430-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<1.00	<1.00	0	35	U
Toluene	1.12	<1.00	NC	35	U
Ethylbenzene	1.28	1.24	3	35	
m,p-Xylenes	<2.00	<2.00	0	35	U
o-Xylene	<1.00	<1.00	0	35	U

Lab Batch #: 876230

Date Analyzed: 12/03/2011 17:01

Date Prepared: 12/03/2011

Analyst: BEC

QC- Sample ID: 432430-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	<100	<100	0	30	U

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

Phone: 432-563-1800
Fax: 432-563-1713

Project Name: **EK Queen Pearce**

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA-J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: bjarguijo@basinenv.com

[illegible]

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier?	UPS	DHL FedEx Lone Star
Temperature Upon Receipt:	16 °C	

Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier?	UPS	DHL FedEx Lone Star

Temperature Upon Receipt: 1.1 ^{°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 / Nonconformance Report - Sample Log-InClient: Basin Env. / PlainsDate/Time: 11:30:11 14:37Lab ID #: 432430Initials: TB**Sample Receipt Checklist**

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	Yes	No	<u>None</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>Amb</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.

☐ Initial and Backup Temperature confirm out of temperature conditions

☐ Client understands and would like to proceed with analysis

Analytical Report 433351

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

20-DEC-11

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



20-DEC-11

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **433351**
EK Queen Pearce
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 433351. 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. 433351 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 433351



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-16	A	12-14-11 00:00		433351-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 433351

Report Date: 20-DEC-11

Date Received: 12/14/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 433351

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Wed Dec-14-11 04:15 pm

Report Date: 20-DEC-11

Project Location: Lea County, NM

Project Manager: Brent Barron II

Analysis Requested	Lab Id: 433351-001 Field Id: SVE Discharge-16 Depth: Matrix: AIR Sampled: Dec-14-11 00:00					
BTEX by EPA 8021 SUB: TX104704215	Extracted: Dec-16-11 14:20 Analyzed: Dec-16-11 14:20 Units/RL: ppmv RL					
Benzene	ND 1.00					
Toluene	ND 1.00					
Ethylbenzene	1.00 1.00					
m,p-Xylenes	ND 2.00					
o-Xylene	ND 1.00					
Total Xylenes	ND 1.00					
Total BTEX	1.00 1.00					
TPH Gasoline Range Organics by SW 8015 SUB: TX104704215	Extracted: Dec-16-11 14:20 Analyzed: Dec-16-11 14:20 Units/RL: ppmv RL					
TPH-GRO	ND 100					

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 affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation. ^ NELAC or State program does not offer Accreditation at this time.

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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 433351,

Project ID: 2008-113

Lab Batch #: 877300

Sample: 433351-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/16/11 14:20

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	27.9	30.0	93	75-125	

Lab Batch #: 877303

Sample: 433351-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/16/11 14:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	27.9	30.0	93	75-125	

Lab Batch #: 877300

Sample: 615567-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/16/11 13:53

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.3	30.0	98	75-125	

Lab Batch #: 877303

Sample: 615574-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/16/11 13:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	29.3	30.0	98	75-125	

Lab Batch #: 877300

Sample: 615567-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/16/11 11:38

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	27.1	30.0	90	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 433351,

Project ID: 2008-113

Lab Batch #: 877303

Sample: 615574-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/16/11 12:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	29.1	30.0	97	75-125	

Lab Batch #: 877300

Sample: 433351-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/16/11 14:44

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.0	30.0	93	75-125	

Lab Batch #: 877303

Sample: 433351-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 12/16/11 14:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	28.0	30.0	93	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 433351

Project ID:

2008-113

Lab Batch #: 877303

Sample: 615574-1-BKS

Matrix: Air

Date Analyzed: 12/16/2011

Date Prepared: 12/16/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<1.00	10.0	8.37	84	75-125	
Toluene	<1.00	10.0	10.4	104	70-125	
Ethylbenzene	<1.00	10.0	12.0	120	71-129	
m,p-Xylenes	<2.00	20.0	25.3	127	70-131	
o-Xylene	<1.00	10.0	13.0	130	71-133	

Lab Batch #: 877300

Sample: 615567-1-BKS

Matrix: Air

Date Analyzed: 12/16/2011

Date Prepared: 12/16/2011

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<100	500	388	78	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 433351

Lab Batch #: 877303

Project ID: 2008-113

Date Analyzed: 12/16/2011 14:44

Date Prepared: 12/16/2011

Analyst: BEC

QC- Sample ID: 433351-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<1.00	<1.00	0	35	U
Toluene	<1.00	<1.00	0	35	U
Ethylbenzene	1.00	1.07	7	35	
m,p-Xylenes	<2.00	<2.00	0	35	U
o-Xylene	<1.00	<1.00	0	35	U

Lab Batch #: 877300

Date Analyzed: 12/16/2011 14:44

Date Prepared: 12/16/2011

Analyst: BEC

QC- Sample ID: 433351-001 D

Batch #: 1

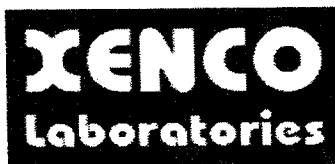
Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	<100	<100	0	30	U

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit

**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-InClient: Basin / PlainsDate/Time: 12.14.11 16:15Lab ID #: 433351Initials: AZ**Sample Receipt Checklist**

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	Yes	No	<u>None</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>Amb</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
 - ☐ Initial and Backup Temperature confirm out of temperature conditions
 - ☐ Client understands and would like to proceed with analysis

Analytical Report 434544

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

10-JAN-12

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



10-JAN-12

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **434544**
EK Queen Pearce
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 434544. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

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Respectfully,

Brent Barron II

Odessa Laboratory Manager

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Sample Cross Reference 434544



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-17	A	01-05-12 11:40		434544-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 434544

Report Date: 10-JAN-12

Date Received: 01/05/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-878639 TPH Gasoline Range Organics by SW 8015
SW8015GRO

Batch 878639, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 434544-001 D.

Batch: LBA-878640 BTEX by EPA 8021B
SW8021BM

Batch 878640, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 434544-001 D.

Certificate of Analysis Summary 434544

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Thu Jan-05-12 03:10 pm

Report Date: 10-JAN-12

Project Location: Lea County, NM

Project Manager: Brent Barron II

Analysis Requested	Lab Id: 434544-001 Field Id: SVE Discharge-17 Depth: Matrix: AIR Sampled: Jan-05-12 11:40					
BTEX by EPA 8021 SUB: TX104704215	Extracted: Jan-06-12 13:18 Analyzed: Jan-06-12 15:55 Units/RL: ppmv RL					
Benzene	ND 1.00					
Toluene	ND 1.00					
Ethylbenzene	1.18 1.00					
m,p-Xylenes	ND 2.00					
o-Xylene	ND 1.00					
Total Xylenes	ND 1.00					
Total BTEX	1.18 1.00					
TPH Gasoline Range Organics by SW 8015 SUB: TX104704215	Extracted: Jan-06-12 15:55 Analyzed: Jan-06-12 15:55 Units/RL: ppmv RL					
TPH-GRO	ND 100					

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Brent Barron II
Odessa Laboratory Manager

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- 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 quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

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RL Reporting Limit

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 434544,

Project ID: 2008-113

Lab Batch #: 878639

Sample: 434544-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/06/12 15:55

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	34.4	30.0	115	75-125	

Lab Batch #: 878640

Sample: 434544-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/06/12 15:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	34.4	30.0	115	75-125	

Lab Batch #: 878639

Sample: 616309-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/06/12 13:56

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	34.8	30.0	116	75-125	

Lab Batch #: 878640

Sample: 616311-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/06/12 13:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	34.8	30.0	116	75-125	

Lab Batch #: 878640

Sample: 616311-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/06/12 12:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	36.1	30.0	120	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 434544,

Project ID: 2008-113

Lab Batch #: 878639

Sample: 616309-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/06/12 13:02

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	36.1	30.0	120	75-125	

Lab Batch #: 878639

Sample: 434544-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/06/12 16:19

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	38.2	30.0	127	75-125	**

Lab Batch #: 878640

Sample: 434544-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 01/06/12 16:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	38.2	30.0	127	75-125	**

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 434544

Project ID:

2008-113

Lab Batch #: 878640

Sample: 616311-1-BKS

Matrix: Air

Date Analyzed: 01/06/2012

Date Prepared: 01/06/2012

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<1.00	10.0	9.16	92	75-125	
Toluene	<1.00	10.0	10.3	103	70-125	
Ethylbenzene	<1.00	10.0	11.5	115	71-129	
m,p-Xylenes	<2.00	20.0	23.1	116	70-131	
o-Xylene	<1.00	10.0	12.9	129	71-133	

Lab Batch #: 878639

Sample: 616309-1-BKS

Matrix: Air

Date Analyzed: 01/06/2012

Date Prepared: 01/06/2012

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<100	500	373	75	71-130	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 434544

Lab Batch #: 878640

Project ID: 2008-113

Date Analyzed: 01/06/2012 16:19

Date Prepared: 01/06/2012

Analyst: BEC

QC- Sample ID: 434544-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<1.00	<1.00	0	35	U
Toluene	<1.00	<1.00	0	35	U
Ethylbenzene	1.18	1.52	25	35	
m,p-Xylenes	<2.00	<2.00	0	35	U
o-Xylene	<1.00	<1.00	0	35	U

Lab Batch #: 878639

Date Analyzed: 01/06/2012 16:19

Date Prepared: 01/06/2012

Analyst: BEC

QC- Sample ID: 434544-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	<100	<100	0	30	U

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: Ben J. Arguijo

Project Name: EK Queen Pearce

Company Name Basin Environmental Service Technologies, LLC

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: (575)396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: _____

e-mail: bjarguijo@basinenv.com

[illegible]

AH 1/5/11

**XENCO Laboratories**

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains
Date/Time: 1/5/12 3:10
Lab ID #: _____
Initials: TH

Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	<u>No</u>	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>Amb</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: send air to Xenco Houston

- 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 436510

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

14-FEB-12

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



14-FEB-12

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **436510**
EK Queen Pearce
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 436510. 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. 436510 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 436510



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-18	A	02-07-12 08:55		436510-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 436510

Report Date: 14-FEB-12

Date Received: 02/07/2012

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Certificate of Analysis Summary 436510

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Tue Feb-07-12 04:05 pm

Report Date: 14-FEB-12

Project Location: Lea County, NM

Project Manager: Brent Barron II

Analysis Requested	Lab Id:	436510-001					
	Field Id:	SVE Discharge-18					
	Depth:						
	Matrix:	AIR					
	Sampled:	Feb-07-12 08:55					
BTEX by EPA 8021 SUB: TX104704215	Extracted:	Feb-10-12 15:18					
	Analyzed:	Feb-10-12 17:22					
	Units/RL:	ppmv RL					
Benzene		ND	0.314				
Toluene		0.486	0.265				
Ethylbenzene		0.723	0.230				
m,p-Xylenes		0.425	0.230				
o-Xylene		0.445	0.230				
Total Xylenes		0.870	0.230				
Total BTEX		2.08	0.230				
TPH Gasoline Range Organics by SW 8015 SUB: TX104704215	Extracted:	Feb-10-12 15:18					
	Analyzed:	Feb-10-12 17:22					
	Units/RL:	ppmv RL					
TPH-GRO		36.6	24.5				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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 affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

^ NELAC or State program does not offer Accreditation at this time.

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 2505 North Falkenburg Rd, Tampa, FL 33619
 5757 NW 158th St, Miami Lakes, FL 33014
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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(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
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 436510,

Project ID: 2008-113

Lab Batch #: 881214

Sample: 436510-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/10/12 17:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	46.8	50.0	94	60-140	

Lab Batch #: 881217

Sample: 436510-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/10/12 17:22

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	46.7	50.0	93	60-140	

Lab Batch #: 881214

Sample: 617777-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/10/12 15:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	46.6	50.0	93	60-140	

Lab Batch #: 881217

Sample: 617779-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/10/12 15:24

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	46.7	50.0	93	60-140	

Lab Batch #: 881217

Sample: 617779-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/10/12 13:41

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	48.3	50.0	97	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 436510,

Project ID: 2008-113

Lab Batch #: 881214

Sample: 617777-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/10/12 14:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	49.1	50.0	98	60-140	

Lab Batch #: 881214

Sample: 436510-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/10/12 17:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	48.6	50.0	97	60-140	

Lab Batch #: 881217

Sample: 436510-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/10/12 17:44

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	48.7	50.0	97	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 436510

Project ID:

2008-113

Lab Batch #: 881214

Sample: 617777-1-BKS

Matrix: Air

Date Analyzed: 02/10/2012

Date Prepared: 02/10/2012

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<0.314	31.4	25.0	80	60-140	
Toluene	<0.265	26.5	21.0	79	60-140	
Ethylbenzene	<0.230	23.0	18.9	82	60-140	
m,p-Xylenes	<0.230	23.0	18.2	79	60-140	
o-Xylene	<0.230	23.0	18.5	80	60-140	

Lab Batch #: 881217

Sample: 617779-1-BKS

Matrix: Air

Date Analyzed: 02/10/2012

Date Prepared: 02/10/2012

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<24.5	122	92.5	76	60-140	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 436510

Lab Batch #: 881214

Project ID: 2008-113

Date Analyzed: 02/10/2012 17:44

Date Prepared: 02/10/2012

Analyst: BEC

QC- Sample ID: 436510-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<0.314	<0.314	0	35	U
Toluene	0.486	0.523	7	35	
Ethylbenzene	0.723	0.765	6	35	
m,p-Xylenes	0.425	0.471	10	35	
o-Xylene	0.445	0.454	2	35	

Lab Batch #: 881217

Date Analyzed: 02/10/2012 17:44

Date Prepared: 02/10/2012

Analyst: BEC

QC- Sample ID: 436510-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	36.6	37.5	2	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

**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:

Basin Env. / Plains

Date/Time:

2-7-12 12:40

Lab ID #:

436510

Initials:

BB / AE

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	Yes	No	<u>None</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 20 °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
 - ☐ Initial and Backup Temperature confirm out of temperature conditions
 - ☐ Client understands and would like to proceed with analysis

Analytical Report 437980

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

07-MAR-12

Collected By: Client



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12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



07-MAR-12

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **437980**
EK Queen Pearce
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 437980. 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. 437980 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 437980



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge - 19	A	03-01-12 09:00		437980-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 437980

Report Date: 07-MAR-12

Date Received: 03/01/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 437980

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Thu Mar-01-12 01:15 pm

Report Date: 07-MAR-12

Project Location: Lea County, NM

Project Manager: Brent Barron II

Analysis Requested	Lab Id: 437980-001 Field Id: SVE Discharge - 19 Depth: Matrix: AIR Sampled: Mar-01-12 09:00					
BTEX by EPA 8021 SUB: TX104704215	Extracted: Mar-02-12 11:00 Analyzed: Mar-02-12 13:03 Units/RL: ppmv RL					
Benzene	ND 0.314					
Toluene	0.427 0.265					
Ethylbenzene	0.714 0.230					
m,p-Xylenes	0.442 0.230					
o-Xylene	0.417 0.230					
Total Xylenes	0.859 0.230					
Total BTEX	2.00 0.230					
TPH Gasoline Range Organics by SW 8015 SUB: TX104704215	Extracted: Mar-02-12 11:00 Analyzed: Mar-02-12 13:03 Units/RL: ppmv RL					
TPH-GRO	ND 24.5					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron II
Odessa Laboratory Manager

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 437980,

Project ID: 2008-113

Lab Batch #: 882803

Sample: 437980-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 03/02/12 13:03

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	47.3	50.0	95	60-140	

Lab Batch #: 882817

Sample: 437980-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 03/02/12 13:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	47.3	50.0	95	60-140	

Lab Batch #: 882803

Sample: 618717-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 03/02/12 12:42

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	49.6	50.0	99	60-140	

Lab Batch #: 882817

Sample: 618724-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 03/02/12 12:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	49.6	50.0	99	60-140	

Lab Batch #: 882817

Sample: 618724-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 03/02/12 11:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	49.7	50.0	99	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 437980,

Project ID: 2008-113

Lab Batch #: 882803

Sample: 618717-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 03/02/12 11:57

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	55.7	50.0	111	60-140	

Lab Batch #: 882803

Sample: 437980-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 03/02/12 13:26

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	50.9	50.0	102	60-140	

Lab Batch #: 882817

Sample: 437980-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 03/02/12 13:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	50.9	50.0	102	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 437980

Project ID:

2008-113

Lab Batch #: 882817

Sample: 618724-1-BKS

Matrix: Air

Date Analyzed: 03/02/2012

Date Prepared: 03/02/2012

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<0.314	31.4	33.7	107	60-140	
Toluene	<0.265	26.5	25.1	95	60-140	
Ethylbenzene	<0.230	23.0	20.4	89	60-140	
m,p-Xylenes	<0.230	23.0	19.3	84	60-140	
o-Xylene	<0.230	23.0	19.5	85	60-140	

Lab Batch #: 882803

Sample: 618717-1-BKS

Matrix: Air

Date Analyzed: 03/02/2012

Date Prepared: 03/02/2012

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<24.5	122	113	93	60-140	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 437980

Lab Batch #: 882817

Project ID: 2008-113

Date Analyzed: 03/02/2012 13:26

Date Prepared: 03/02/2012

Analyst: BEC

QC- Sample ID: 437980-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<0.314	<0.314	0	35	U
Toluene	0.427	0.422	1	35	
Ethylbenzene	0.714	0.647	10	35	
m,p-Xylenes	0.442	0.399	10	35	
o-Xylene	0.417	0.376	10	35	

Lab Batch #: 882803

Date Analyzed: 03/02/2012 13:26

Date Prepared: 03/02/2012

Analyst: BEC

QC- Sample ID: 437980-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	<24.5	<24.5	0	35	U

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: Ben J. Arguijo

Project Name: EK Queen Pearce

Company Name Basin Environmental Service Technologies, LLC

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: **(575)396-2378**

Fax No: **(575) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Dakota Wright

e-mail: bjarguijo@basinenv.com

[illegible]

**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:

Date/Time:

Lab ID #:

Initials:

AH 3/1/12
3+ Plains

3/1/12 13:15

437980

AH

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
6. Any missing / extra samples?	Yes	No		
7. Chain of custody signed when relinquished / received?	Yes	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Yes	No		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	N/A	
17. VOC sample have zero head space?	Yes	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs	lbs	lbs	lbs	lbs
°C	°C	°C	°C	°C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
 - ☐ Initial and Backup Temperature confirm out of temperature conditions
 - ☐ Client understands and would like to proceed with analysis

Analytical Report 440592

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

19-APR-12

Collected By: Client



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Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



19-APR-12

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **440592**
EK Queen Pearce
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 440592. 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. 440592 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 440592



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-20	A	04-12-12 08:30		440592-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 440592

Report Date: 19-APR-12

Date Received: 04/12/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 440592

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Thu Apr-12-12 02:10 pm

Report Date: 19-APR-12

Project Location: Lea County, NM

Project Manager: Brent Barron II

Analysis Requested	Lab Id: 440592-001 Field Id: SVE Discharge-20 Depth: Matrix: AIR Sampled: Apr-12-12 08:30					
BTEX by EPA 8021 SUB: TX104704215	Extracted: Apr-16-12 14:42 Analyzed: Apr-16-12 18:38 Units/RL: ppmv RL					
Benzene	ND 0.314					
Toluene	0.281 0.265					
Ethylbenzene	0.468 0.230					
m,p-Xylenes	0.280 0.230					
o-Xylene	0.265 0.230					
Total Xylenes	0.545 0.230					
Total BTEX	1.29 0.230					
TPH Gasoline Range Organics by SW 8015 SUB: TX104704215	Extracted: Apr-17-12 14:08 Analyzed: Apr-17-12 17:00 Units/RL: ppmv RL					
TPH-GRO	ND 24.5					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron II
Odessa Laboratory Manager

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
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 3725 E. Atlanta Ave, Phoenix, AZ 85040

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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 440592,

Project ID: 2008-113

Lab Batch #: 886077

Sample: 440592-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/16/12 18:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	45.3	50.0	91	60-140	

Lab Batch #: 886046

Sample: 440592-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/17/12 17:00

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	49.8	50.0	100	60-140	

Lab Batch #: 886077

Sample: 620713-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/16/12 17:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	43.4	50.0	87	60-140	

Lab Batch #: 886046

Sample: 620697-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/17/12 14:58

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	50.5	50.0	101	60-140	

Lab Batch #: 886077

Sample: 620713-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/16/12 16:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	43.2	50.0	86	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 440592,

Project ID: 2008-113

Lab Batch #: 886046

Sample: 620697-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/17/12 14:10

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	50.0	50.0	100	60-140	

Lab Batch #: 886077

Sample: 440592-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/16/12 19:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	43.4	50.0	87	60-140	

Lab Batch #: 886046

Sample: 440592-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 04/17/12 17:24

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	51.2	50.0	102	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 440592

Project ID:

2008-113

Lab Batch #: 886077

Sample: 620713-1-BKS

Matrix: Air

Date Analyzed: 04/16/2012

Date Prepared: 04/16/2012

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<0.314	31.4	25.9	82	60-140	
Toluene	<0.265	26.5	22.2	84	60-140	
Ethylbenzene	<0.230	23.0	18.9	82	60-140	
m,p-Xylenes	<0.230	23.0	18.1	79	60-140	
o-Xylene	<0.230	23.0	19.2	83	60-140	

Lab Batch #: 886046

Sample: 620697-1-BKS

Matrix: Air

Date Analyzed: 04/17/2012

Date Prepared: 04/17/2012

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<24.5	122	120	98	60-140	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 440592

Lab Batch #: 886077

Project ID: 2008-113

Date Analyzed: 04/16/2012 19:01

Date Prepared: 04/16/2012

Analyst: BEC

QC- Sample ID: 440592-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<0.314	<0.314	0	35	U
Toluene	0.281	0.326	15	35	
Ethylbenzene	0.468	0.500	7	35	
m,p-Xylenes	0.280	0.310	10	35	
o-Xylene	0.265	0.316	18	35	

Lab Batch #: 886046

Date Analyzed: 04/17/2012 17:24

Date Prepared: 04/17/2012

Analyst: BEC

QC- Sample ID: 440592-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	<24.5	<24.5	0	35	U

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

**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-InClient: Basin / PlainsDate/Time: 4-12-12 14:10Lab ID #: 440592Initials: AZ**Sample Receipt Checklist**

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	Yes	No	<u>None</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0.5</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature

condition acceptable by NELAC 5.5.8.3.1.a.1.

☐ Initial and Backup Temperature confirm out of temperature conditions☐ Client understands and would like to proceed with analysis

Analytical Report 441688

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

07-MAY-12

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



07-MAY-12

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **441688**
EK Queen Pearce
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 441688. 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. 441688 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 441688



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-21	A	05-02-12 08:45		441688-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 441688

Report Date: 07-MAY-12

Date Received: 05/02/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 441688

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Wed May-02-12 02:06 pm

Report Date: 07-MAY-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 441688-001 Field Id: SVE Discharge-21 Depth: Matrix: AIR Sampled: May-02-12 08:45					
BTEX by EPA 8021 SUB: TX104704215	Extracted: May-03-12 11:58 Analyzed: May-03-12 18:58 Units/RL: ppmv RL					
Benzene	ND 0.314					
Toluene	1.25 0.265					
Ethylbenzene	0.806 0.230					
m,p-Xylenes	0.667 0.230					
o-Xylene	0.606 0.230					
Total Xylenes	1.27 0.230					
Total BTEX	3.33 0.230					
TPH Gasoline Range Organics by SW 8015 SUB: TX104704215	Extracted: May-03-12 11:58 Analyzed: May-03-12 18:58 Units/RL: ppmv RL					
TPH-GRO	91.7 24.5					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Nicholas Straccione
Project Manager

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 441688,

Project ID: 2008-113

Lab Batch #: 887204

Sample: 441688-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/03/12 18:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	48.9	50.0	98	60-140	

Lab Batch #: 887211

Sample: 441688-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/03/12 18:58

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	48.9	50.0	98	60-140	

Lab Batch #: 887204

Sample: 621413-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/03/12 13:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	47.9	50.0	96	60-140	

Lab Batch #: 887211

Sample: 621427-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/03/12 13:25

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	47.9	50.0	96	60-140	

Lab Batch #: 887204

Sample: 621413-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/03/12 11:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	43.3	50.0	87	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 441688,

Project ID: 2008-113

Lab Batch #: 887211

Sample: 621427-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/03/12 12:40

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	51.3	50.0	103	60-140	

Lab Batch #: 887204

Sample: 441712-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/03/12 15:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	50.6	50.0	101	60-140	

Lab Batch #: 887211

Sample: 441601-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 05/03/12 18:13

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	49.6	50.0	99	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 441688

Project ID:

2008-113

Lab Batch #: 887204

Sample: 621413-1-BKS

Matrix: Air

Date Analyzed: 05/03/2012

Date Prepared: 05/03/2012

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<0.314	31.4	24.6	78	60-140	
Toluene	<0.265	26.5	19.6	74	60-140	
Ethylbenzene	<0.230	23.0	15.6	68	60-140	
m,p-Xylenes	<0.230	23.0	14.3	62	60-140	
o-Xylene	<0.230	23.0	13.8	60	60-140	

Lab Batch #: 887211

Sample: 621427-1-BKS

Matrix: Air

Date Analyzed: 05/03/2012

Date Prepared: 05/03/2012

Analyst: BEC

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<24.5	122	113	93	60-140	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 441688

Lab Batch #: 887204

Project ID: 2008-113

Date Analyzed: 05/03/2012 15:16

Date Prepared: 05/03/2012

Analyst: BEC

QC- Sample ID: 441712-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	239	240	0	35	
Toluene	333	342	3	35	
Ethylbenzene	22.9	22.2	3	35	
m,p-Xylenes	32.3	32.0	1	35	
o-Xylene	19.1	18.8	2	35	

Lab Batch #: 887211

Date Analyzed: 05/03/2012 18:13

Date Prepared: 05/03/2012

Analyst: BEC

QC- Sample ID: 441601-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	3090	3300	7	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

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 J. Arguijo

Project Name: EK Queen Pearce

Company Name Basin Environmental Service Technologies, LLC

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: (575)396-2378

Fax No: **(575) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: _____

e-mail: bjarguijo@basinenv.com

[illegible]



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Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains
Date/Time: 5/2/12 14:00
Lab ID #: 441688
Initials: HH

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>2.5</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:

- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 444342

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

28-JUN-12

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



28-JUN-12

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **444342**
EK Queen Pearce
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 444342. 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. 444342 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 444342



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge 22	A	06-20-12 10:00		444342-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 444342

Report Date: 28-JUN-12

Date Received: 06/20/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 444342

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Jason Henry

Project Name: EK Queen Pearce

Date Received in Lab: Wed Jun-20-12 02:00 pm

Report Date: 28-JUN-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 444342-001 Field Id: SVE Discharge 22 Depth: Matrix: AIR Sampled: Jun-20-12 10:00					
BTEX by EPA 8021 SUB: TX104704215	Extracted: Jun-24-12 16:46 Analyzed: Jun-24-12 19:55 Units/RL: ppmv RL					
Benzene	ND 0.314					
Toluene	0.361 0.265					
Ethylbenzene	0.597 0.230					
m,p-Xylenes	0.394 0.230					
o-Xylene	0.415 0.230					
Total Xylenes	0.809 0.230					
Total BTEX	1.77 0.230					
TPH Gasoline Range Organics by SW 8015 SUB: TX104704215	Extracted: Jun-24-12 16:46 Analyzed: Jun-24-12 19:55 Units/RL: ppmv RL					
TPH-GRO	ND 24.5					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Nicholas Straccione
Project Manager

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 444342,

Project ID: 2008-113

Lab Batch #: 891104

Sample: 444342-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/24/12 19:55

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	45.8	50.0	92	60-140	

Lab Batch #: 891107

Sample: 444342-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/24/12 19:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	56.5	50.0	113	60-140	

Lab Batch #: 891104

Sample: 623842-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/24/12 16:43

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	43.0	50.0	86	60-140	

Lab Batch #: 891107

Sample: 623844-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/24/12 16:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	53.1	50.0	106	60-140	

Lab Batch #: 891107

Sample: 623844-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/24/12 14:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	54.4	50.0	109	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 444342,

Project ID: 2008-113

Lab Batch #: 891104

Sample: 623842-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/24/12 14:33

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	42.3	50.0	85	60-140	

Lab Batch #: 891104

Sample: 444252-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/24/12 17:42

SURROGATE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	41.8	50.0	84	60-140	

Lab Batch #: 891107

Sample: 444252-002 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 06/24/12 17:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	51.5	50.0	103	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 444342

Project ID:

2008-113

Lab Batch #: 891107

Sample: 623844-1-BKS

Matrix: Air

Date Analyzed: 06/24/2012

Date Prepared: 06/24/2012

Analyst: ROL

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<0.314	31.4	25.0	80	60-140	
Toluene	<0.265	26.5	20.9	79	60-140	
Ethylbenzene	<0.230	23.0	17.1	74	60-140	
m,p-Xylenes	<0.230	23.0	16.5	72	60-140	
o-Xylene	<0.230	23.0	16.9	73	60-140	

Lab Batch #: 891104

Sample: 623842-1-BKS

Matrix: Air

Date Analyzed: 06/24/2012

Date Prepared: 06/24/2012

Analyst: ROL

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH Gasoline Range Organics by SW 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<24.5	122	130	107	60-140	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 444342

Lab Batch #: 891107

Project ID: 2008-113

Date Analyzed: 06/24/2012 17:42

Date Prepared: 06/24/2012

Analyst: ROL

QC- Sample ID: 444252-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<0.314	<0.314	0	35	U
Toluene	<0.265	<0.265	0	35	U
Ethylbenzene	<0.230	<0.230	0	35	U
m,p-Xylenes	<0.230	<0.230	0	35	U
o-Xylene	<0.230	<0.230	0	35	U

Lab Batch #: 891104

Date Analyzed: 06/24/2012 17:42

Date Prepared: 06/24/2012

Analyst: ROL

QC- Sample ID: 444252-002 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH Gasoline Range Organics by SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	<24.5	<24.5	0	35	U

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit



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: Basin / Plains
Date/Time: 6.20.12 14.00
Lab ID #: 444342
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	Yes	No	<u>None</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0.1</u> °C	lbs <u>0.1</u> °C	lbs <u>0.1</u> °C	lbs <u>0.1</u> °C	lbs <u>0.1</u> °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.3.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis

Analytical Report 450830

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijjo

EK Queen Pearce

2008-113

19-OCT-12

Collected By: Client



4143 Greenbriar Dr., Stafford, TX 77477

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



19-OCT-12

Project Manager: **Ben Arguijjo**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **450830**
EK Queen Pearce
Project Address: Lea County, NM

Ben Arguijjo:

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 450830. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 450830 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 450830



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-23	A	10-15-12 10:45		450830-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 450830

Report Date: 19-OCT-12

Date Received: 10/16/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Project Id: 2008-113

Contact: Ben Arguijjo

Project Name: EK Queen Pearce

Date Received in Lab: Tue Oct-16-12 09:00 am

Report Date: 19-OCT-12

Project Location: Lea County,NM

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 450830-001 Field Id: SVE Discharge-23 Depth: Matrix: AIR Sampled: Oct-15-12 10:45					
BTEX-MTBE by EPA 8021 Mod.	Extracted: Oct-17-12 14:10 Analyzed: Oct-17-12 18:26 Units/RL: ppmv RL					
Benzene +	BRL 0.314					
Toluene +	0.690 0.265					
Ethylbenzene +	0.650 0.230					
m,p-Xylenes +	0.590 0.230					
o-Xylene +	0.548 0.230					
Total Xylenes +	1.14 0.230					
Total BTEX +	2.48 0.230					
TPH GRO by EPA 8015 Mod.	Extracted: Oct-17-12 14:10 Analyzed: Oct-17-12 18:26 Units/RL: ppmv RL					
TPH-GRO +	30.6 24.5					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi



Nicholas Straccione
Project Manager

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 450830,

Project ID: 2008-113

Lab Batch #: 899051

Sample: 450830-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/17/12 18:26

SURROGATE RECOVERY STUDY

BTEX-MTBE by EPA 8021 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	50.2	50.0	100	60-140	

Lab Batch #: 899054

Sample: 450830-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/17/12 18:26

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	52.2	50.0	104	60-140	

Lab Batch #: 899051

Sample: 628757-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/17/12 14:25

SURROGATE RECOVERY STUDY

BTEX-MTBE by EPA 8021 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	51.1	50.0	102	60-140	

Lab Batch #: 899054

Sample: 628759-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/17/12 14:25

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	53.1	50.0	106	60-140	

Lab Batch #: 899054

Sample: 628759-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/17/12 11:33

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	54.8	50.0	110	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 450830,

Project ID: 2008-113

Lab Batch #: 899051

Sample: 628757-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/17/12 12:30

SURROGATE RECOVERY STUDY

BTEX-MTBE by EPA 8021 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	51.0	50.0	102	60-140	

Lab Batch #: 899051

Sample: 450830-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/17/12 18:49

SURROGATE RECOVERY STUDY

BTEX-MTBE by EPA 8021 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	52.6	50.0	105	60-140	

Lab Batch #: 899054

Sample: 450830-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 10/17/12 18:49

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	54.6	50.0	109	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 450830

Project ID:

2008-113

Lab Batch #: 899051

Sample: 628757-1-BKS

Matrix: Air

Date Analyzed: 10/17/2012

Date Prepared: 10/17/2012

Analyst: MCH

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX-MTBE by EPA 8021 Mod.	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<0.314	31.4	28.2	90	60-140	
Toluene	<0.265	26.5	20.3	77	60-140	
Ethylbenzene	<0.230	23.0	15.9	69	60-140	
m,p-Xylenes	<0.230	23.0	14.7	64	60-140	
o-Xylene	<0.230	23.0	14.8	64	60-140	

Lab Batch #: 899054

Sample: 628759-1-BKS

Matrix: Air

Date Analyzed: 10/17/2012

Date Prepared: 10/17/2012

Analyst: MCH

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<24.5	122	122	100	60-140	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 450830

Lab Batch #: 899051

Project ID: 2008-113

Date Analyzed: 10/17/2012 18:49

Date Prepared: 10/17/2012

Analyst: MCH

QC- Sample ID: 450830-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX-MTBE by EPA 8021 Mod.	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<0.314	<0.314	0	35	U
Toluene	0.690	0.337	69	35	F
Ethylbenzene	0.650	0.599	8	35	
m,p-Xylenes	0.590	0.567	4	35	
o-Xylene	0.548	0.509	7	35	

Lab Batch #: 899054

Date Analyzed: 10/17/2012 18:49

Date Prepared: 10/17/2012

Analyst: MCH

QC- Sample ID: 450830-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH GRO by EPA 8015 Mod.	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	30.6	27.2	12	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

450830-11

Phone: 432-563-1800
Fax: 432-563-1713

e-mail: bjarguijo@basinenv.com

Final 1.000



Prelogin/Nonconformance Report- Sample Log-In

Client: Basin Environmental Service Technologi

Date/ Time Received: 10/16/2012 09:00:00 AM

Work Order #: 450830

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : r-31

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	20
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	N/A
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	N/A
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	N/A
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: tt	PH Device/Lot#:

Checklist completed by:


Tanya Torres

Date: 10/16/2012

Checklist reviewed by:

Date: 10/16/2012

Analytical Report 451989

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

EK Queen Pearce

2008-113

13-NOV-12

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



13-NOV-12

Project Manager: **Ben Arguijo**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **451989**
EK Queen Pearce
Project Address: Lea County, NM

Ben Arguijo:

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 451989. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 451989 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 451989



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-24	A	11-05-12 10:00		451989-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113

Work Order Number: 451989

Report Date: 13-NOV-12

Date Received: 11/06/2012

Sample receipt non conformances and comments:

hold for BTEX

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 451989

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Tue Nov-06-12 12:33 pm

Report Date: 13-NOV-12

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 451989-001 Field Id: SVE Discharge-24 Depth: Matrix: AIR Sampled: Nov-05-12 10:00					
BTEX by EPA 8021B Mod. SUB: TX104704215	Extracted: Nov-08-12 15:15 Analyzed: Nov-08-12 15:30 Units/RL: ppmv RL					
Benzene	ND 0.314					
Toluene	ND 0.531					
Ethylbenzene	0.449 0.230					
m,p-Xylenes	0.276 0.230					
o-Xylene	0.283 0.230					
Total Xylenes	0.559 0.230					
Total BTEX	1.01 0.230					
TPH GRO by EPA 8015 Mod. SUB: TX104704215	Extracted: Nov-08-12 15:15 Analyzed: Nov-08-12 15:30 Units/RL: ppmv RL					
TPH-GRO	ND 24.5					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Nicholas Straccione
Project Manager

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 451989,

Project ID: 2008-113

Lab Batch #: 900626

Sample: 451989-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/08/12 15:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	51.8	50.0	104	75-125	

Lab Batch #: 900627

Sample: 451989-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/08/12 15:30

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	53.8	50.0	108	60-140	

Lab Batch #: 900626

Sample: 629789-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/08/12 14:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	50.3	50.0	101	75-125	

Lab Batch #: 900627

Sample: 629790-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/08/12 14:51

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	52.4	50.0	105	60-140	

Lab Batch #: 900626

Sample: 629789-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/08/12 13:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	50.2	50.0	100	75-125	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 451989,

Project ID: 2008-113

Lab Batch #: 900627

Sample: 629790-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/08/12 14:06

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	50.2	50.0	100	60-140	

Lab Batch #: 900626

Sample: 451989-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/08/12 15:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	52.2	50.0	104	75-125	

Lab Batch #: 900627

Sample: 451989-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 11/08/12 15:52

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	54.3	50.0	109	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 451989

Project ID:

2008-113

Lab Batch #: 900626

Sample: 629789-1-BKS

Matrix: Air

Date Analyzed: 11/08/2012

Date Prepared: 11/08/2012

Analyst: ZHO

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021B Mod.	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<0.314	31.4	31.9	102	75-125	
Toluene	<0.531	26.5	30.4	115	70-125	
Ethylbenzene	<0.230	23.0	28.1	122	71-129	
m,p-Xylenes	<0.230	23.0	29.3	127	70-131	
o-Xylene	<0.230	23.0	29.1	127	71-133	

Lab Batch #: 900627

Sample: 629790-1-BKS

Matrix: Air

Date Analyzed: 11/08/2012

Date Prepared: 11/08/2012

Analyst: ZHO

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<24.5	122	117	96	60-140	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 451989

Lab Batch #: 900626

Project ID: 2008-113

Date Analyzed: 11/08/2012 15:52

Date Prepared: 11/08/2012

Analyst: ZHO

QC- Sample ID: 451989-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021B Mod.	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<0.314	<0.314	0	35	U
Toluene	<0.531	<0.531	0	35	U
Ethylbenzene	0.449	0.408	10	35	
m,p-Xylenes	0.276	0.230	18	35	
o-Xylene	0.283	0.230	21	35	

Lab Batch #: 900627

Date Analyzed: 11/08/2012 15:52

Date Prepared: 11/08/2012

Analyst: ZHO

QC- Sample ID: 451989-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH GRO by EPA 8015 Mod.	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	<24.5	<24.5	0	35	U

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Xenco Laboratories

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 J. Arguijo

Project Name: **EK Queen Pearce**

Company Name **Basin Environmental Service Technologies, LLC**

Project #: 2008-113

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: (575) 396-2378 Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:  e-mail: bjarguijo@basinenv.com

e-mail: bjarguijo@basinenv.com

[illegible]



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 11/06/2012 12:33:00 PM

Work Order #: 451989

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	9.7
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by:

Date: _____

Checklist reviewed by:

Date: _____

Analytical Report 456696

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Ek Queen Pearce

2008-113

07-FEB-13

Collected By: Client



4143 Greenbriar Dr., Stafford, TX 77477

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



07-FEB-13

Project Manager: **Ben Arguijo**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **456696**
Ek Queen Pearce
Project Address: Lea County, NM

Ben Arguijo:

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(s) 456696. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 456696 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 456696



PLAINS ALL AMERICAN EH&S, Midland, TX

Ek Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE-Discharge 25	A	01-29-13 09:00		456696-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Ek Queen Pearce



Project ID: 2008-113
Work Order Number(s): 456696

Report Date: 07-FEB-13
Date Received: 01/30/2013

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Project Id: 2008-113

Contact: Ben Arguijo

Project Location: Lea County, NM

Date Received in Lab: Wed Jan-30-13 10:15 am

Report Date: 07-FEB-13

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 456696-001 Field Id: SVE-Discharge 25 Depth: Matrix: AIR Sampled: Jan-29-13 09:00					
BTEX by EPA 8021 Mod.	Extracted: Feb-01-13 19:44 Analyzed: Feb-02-13 01:48 Units/RL: ppmv RL					
Benzene +	BRL 0.314					
Toluene +	BRL 0.265					
Ethylbenzene +	0.449 0.230					
m,p-Xylenes +	0.321 0.230					
o-Xylene +	0.290 0.230					
Total Xylenes +	0.611 0.230					
Total BTEX +	1.06 0.230					
TPH GRO by EPA 8015 Mod.	Extracted: Feb-01-13 19:44 Analyzed: Feb-02-13 01:48 Units/RL: ppmv RL					
TPH-GRO +	BRL 24.5					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Nicholas Straccione
Project Manager

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Ek Queen Pearce

Work Orders : 456696,

Project ID: 2008-113

Lab Batch #: 906408

Sample: 456696-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/02/13 01:48

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	50.8	50.0	102	60-140	

Lab Batch #: 906413

Sample: 456696-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/02/13 01:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	50.8	50.0	102	60-140	

Lab Batch #: 906408

Sample: 633467-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/02/13 01:26

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	52.4	50.0	105	60-140	

Lab Batch #: 906413

Sample: 633471-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/02/13 01:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	52.4	50.0	105	60-140	

Lab Batch #: 906413

Sample: 633471-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/01/13 23:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	52.2	50.0	104	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Ek Queen Pearce

Work Orders : 456696,

Project ID: 2008-113

Lab Batch #: 906408

Sample: 633467-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/02/13 00:17

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	50.7	50.0	101	60-140	

Lab Batch #: 906408

Sample: 456696-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/02/13 02:11

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	50.6	50.0	101	60-140	

Lab Batch #: 906413

Sample: 456696-001 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/02/13 02:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	50.6	50.0	101	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: Ek Queen Pearce

Work Order #: 456696

Project ID:

2008-113

Lab Batch #: 906413

Sample: 633471-1-BKS

Matrix: Air

Date Analyzed: 02/02/2013

Date Prepared: 02/01/2013

Analyst: ZHO

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021 Mod.	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<0.314	31.4	23.7	75	60-140	
Toluene	<0.265	26.5	19.4	73	60-140	
Ethylbenzene	<0.230	23.0	17.1	74	60-140	
m,p-Xylenes	<0.230	23.0	17.8	77	60-140	
o-Xylene	<0.230	23.0	16.3	71	60-140	

Lab Batch #: 906408

Sample: 633467-1-BKS

Matrix: Air

Date Analyzed: 02/02/2013

Date Prepared: 02/01/2013

Analyst: ZHO

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<24.5	122	95.1	78	60-140	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: Ek Queen Pearce

Work Order #: 456696

Lab Batch #: 906413

Project ID: 2008-113

Date Analyzed: 02/02/2013 02:11

Date Prepared: 02/01/2013

Analyst: ZHO

QC- Sample ID: 456696-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021 Mod.	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<0.314	<0.314	0	35	U
Toluene	<0.265	<0.265	0	35	U
Ethylbenzene	0.449	0.442	2	35	
m,p-Xylenes	0.321	0.321	0	35	
o-Xylene	0.290	0.341	16	35	

Lab Batch #: 906408

Date Analyzed: 02/02/2013 02:11

Date Prepared: 02/01/2013

Analyst: ZHO

QC- Sample ID: 456696-001 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH GRO by EPA 8015 Mod.	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	<24.5	<24.5	0	35	U

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 01/30/2013 10:15:00 AM

Work Order #: 456696

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : r-31

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	20
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	No
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	N/A
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	N/A
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: tt	PH Device/Lot#:

Checklist completed by:


Tanya Torres

Date: 01/30/2013

Checklist reviewed by:

Date: 01/30/2013

Analytical Report 458430

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

EK Queen Pearce

2008-113

06-MAR-13

Collected By: Client



4143 Greenbriar Dr., Stafford, TX 77477

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



06-MAR-13

Project Manager: **Ben Arguijo**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **458430**
EK Queen Pearce
Project Address: Lea County, NM

Ben Arguijo:

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(s) 458430. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 458430 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 458430



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge - 26	A	02-27-13 09:15		458430-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID: 2008-113
Work Order Number(s): 458430

Report Date: 06-MAR-13
Date Received: 02/28/2013

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 458430

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2008-113

Contact: Ben Arguijo

Project Name: EK Queen Pearce

Date Received in Lab: Thu Feb-28-13 09:40 am

Report Date: 06-MAR-13

Project Location: Lea County, NM

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: 458430-001 Field Id: SVE Discharge - 26 Depth: Matrix: AIR Sampled: Feb-27-13 09:15						
BTEX by EPA 8021 Mod.	Extracted: Feb-28-13 20:53 Analyzed: Feb-28-13 23:40 Units/RL: ppmv RL						
Benzene +	BRL 0.314						
Toluene +	BRL 0.265						
Ethylbenzene +	0.251 0.230						
m,p-Xylenes +	BRL 0.230						
o-Xylene +	BRL 0.230						
Total Xylenes +	BRL 0.230						
Total BTEX +	0.251 0.230						
TPH GRO by EPA 8015 Mod.	Extracted: Feb-28-13 20:53 Analyzed: Feb-28-13 23:40 Units/RL: ppmv RL						
TPH-GRO +	27.3 24.5						

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Nicholas Straccione
Project Manager

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 458430, 458430

Project ID: 2008-113

Lab Batch #: 908324

Sample: 458430-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/28/13 23:40

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	51.2	50.0	102	60-140	

Lab Batch #: 908325

Sample: 458430-001 / SMP

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/28/13 23:40

SURROGATE RECOVERY STUDY					
TPH GRO by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	53.4	50.0	107	60-140	

Lab Batch #: 908324

Sample: 634683-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/28/13 18:16

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	52.8	50.0	106	60-140	

Lab Batch #: 908325

Sample: 634684-1-BLK / BLK

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/28/13 18:16

SURROGATE RECOVERY STUDY					
TPH GRO by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	55.1	50.0	110	60-140	

Lab Batch #: 908324

Sample: 634683-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/28/13 16:44

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	53.3	50.0	107	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 458430, 458430

Project ID: 2008-113

Lab Batch #: 908325

Sample: 634684-1-BKS / BKS

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/28/13 17:07

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	55.5	50.0	111	60-140	

Lab Batch #: 908324

Sample: 458384-003 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/28/13 19:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	53.0	50.0	106	60-140	

Lab Batch #: 908325

Sample: 458384-003 D / MD

Batch: 1 Matrix: Air

Units: ppmv

Date Analyzed: 02/28/13 19:24

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	55.3	50.0	111	60-140	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EK Queen Pearce

Work Order #: 458430

Project ID:

2008-113

Lab Batch #: 908324

Sample: 634683-1-BKS

Matrix: Air

Date Analyzed: 02/28/2013

Date Prepared: 02/28/2013

Analyst: ZHO

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021 Mod.	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Benzene	<0.314	31.4	23.6	75	60-140	
Toluene	<0.265	26.5	20.3	77	60-140	
Ethylbenzene	<0.230	23.0	18.3	80	60-140	
m,p-Xylenes	<0.230	23.0	18.2	79	60-140	
o-Xylene	<0.230	23.0	17.8	77	60-140	

Lab Batch #: 908325

Sample: 634684-1-BKS

Matrix: Air

Date Analyzed: 02/28/2013

Date Prepared: 02/28/2013

Analyst: ZHO

Reporting Units: ppmv

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
TPH-GRO	<24.5	122	117	96	60-140	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Project Name: EK Queen Pearce

Work Order #: 458430

Lab Batch #: 908324

Project ID: 2008-113

Date Analyzed: 02/28/2013 19:24

Date Prepared: 02/28/2013

Analyst: ZHO

QC- Sample ID: 458384-003 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

BTEX by EPA 8021 Mod.	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Benzene	<0.314	<0.314	0	35	U
Toluene	<0.265	<0.265	0	35	U
Ethylbenzene	<0.230	<0.230	0	35	U
m,p-Xylenes	<0.230	<0.230	0	35	U
o-Xylene	<0.230	<0.230	0	35	U

Lab Batch #: 908325

Date Analyzed: 02/28/2013 19:24

Date Prepared: 02/28/2013

Analyst: ZHO

QC- Sample ID: 458384-003 D

Batch #: 1

Matrix: Air

Reporting Units: ppmv

SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH GRO by EPA 8015 Mod.	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
TPH-GRO	<24.5	<24.5	0	35	U

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

**12600 West I-20 East
Odessa, Texas 79765**

Phone: 432-563-1800
Fax: 432-563-1713

Project Name: **EK Queen Pearce**

Project #: 2008-113

Project Loc: Lea County, NM

PO #: PAA-J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: bjarguijo@basinenv.com

ORDER #:**Special Instructions:****Laboratory Comments:**

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier?	UPS	DHL FedEx Lone Star
Temperature Upon Receipt:	Ambient (Airs) °C	

Relinquished by:	Date: 2.27.13	Time: ~~00:15~~	Received by:	Date: 2/27/13	Time: 10:20
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by ELOT:	Date: 2/28/13	Time: 4:40



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 02/28/2013 09:40:00 AM

Work Order #: 458430

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	20
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	N/A
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	N/A
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: fov

PH Device/Lot#:

Checklist completed by:

Tanya

Tanya Torres

Date: 02/28/2013

Checklist reviewed by:

Date: 02/28/2013

Appendix H

Release Notification &

Corrective Action (Form C-141)

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

OPERATOR

☒ Initial Report

☐ Final Report

Name of Company Plains Pipeline	Contact Camille Bryant
Address 3112 W. US Hwy 82, Lovington, NM 88260	Telephone No. 505-441-0965
Facility Name E.K. Queen Pearce 6 Inch	Facility Type 6" Steel Pipeline

Surface Owner SLO	Mineral Owner	Lease No. 30-025-35783

LOCATION OF RELEASE

Unit Letter O	Section 16	Township 18S	Range 34E	Feet from the	North/South Line	Feet from the	East/West Line	County Lea

Latitude 32° 44' 31.2" Longitude 103° 33' 46.6"

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 10 barrels	Volume Recovered 0 barrels
Source of Release 6" Steel Pipeline	Date and Hour of Occurrence 05/06/2008 @ 11:00	Date and Hour of Discovery 05/06/2008 @ 11:40
Was Immediate Notice Given? X Yes ☐ No ☐ Not Required	If YES, To Whom? Larry Johnson	
By Whom? Camille Bryant	Date and Hour 05/06/2008 @ 16:00	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED
MAY 6, 2008
HOBBS UCD

Describe Cause of Problem and Remedial Action Taken Internal corrosion of the 6 inch steel pipeline resulted in release of sweet crude oil. The line is a 6-inch steel gathering line that produces approximately 600 barrels of oil per day. The pressure on the line is approximately 90 psi and the gravity of the sweet crude oil is 40. The sweet crude has an H₂S content of <10 ppm. The line is approximately 1 foot bgs at the release point.

Describe Area Affected and Cleanup Action Taken.* The impacted soil was excavated and stockpiled on plastic.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Camille Bryant</i>	OIL CONSERVATION DIVISION <i>L. Johnson</i>	
Printed Name: Camille Bryant	Approved by District Supervisor ENVIRONMENTAL ENGINEER	
Title: Remediation Coordinator	Approval Date: 5.8.08	Expiration Date: 7.8.08
E-mail Address: cjbrant@paalp.com	Conditions of Approval:	Attached ☐
Date: 05/08/2008	Phone: 505-441-0965	1RP-1853

* Attach Additional Sheets If Necessary

FOH0812939424