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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

Prepared For:

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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 107' bgs (SB-4 @ 90') to 701 mg/kg in the soil sample collected at 27' bgs (SB-4 @ 90') to 701 mg/kg in the soil sample collected at 27' bgs (SB-4 @ 90') to 701 mg/kg in the soil sample collected at 27' bgs (SB-4 @ 90') to 701 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 internals 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" @ 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" @ 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 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' to11.3 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:**

- Copy 1: Dr. Tomas Oberding New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (District 1) 1625 French Drive Hobbs, NM 88240 tomas.oberding@state.nm.us
- Copy 2: Dana Strang New Mexico State Land Office 310 Old Santa Fe Trail P.O. Box 1148 Santa Fe, NM 87504-1148 dvackar@slo.state.nm.us
- Copy 3: Jeff Dann Plains All American Pipeline, LP 333 Clay Street, Suite 1600 Houston, TX 77002 jpdann@paalp.com
- Copy 4: Camille Bryant Plains All American Pipeline, LP 2530 State Highway 214 Denver City, TX 79323 cjbryant@paalp.com
- Copy 5: Basin Environmental Service Technologies, LLC P.O. Box 301 Lovington, NM 88260

Figures



















Tables

				METHOD: EPA SW 846-8021B, 5030						METHOD: 8015M			TOTAL	E 300
SAMPLE LOCATION	DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	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	-
	10	7/05/0000	la Oitu	0.0010	0.0001	0.0010	0.0001	0.0010	0.0001	15.4	15.4	15.4	45.4	
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	-
SR 2 @ 10'	10'	7/25/2009	In Citu	-0.0010	-0.0021	-0.0010	-0.0021	-0.0010	-0.0021	-15.6	-15.6	-15.6	-15.6	
SB-3@10	10	7/25/2008	In-Situ In Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.0	<15.0	<15.0	<15.0	-
SB-3 @ 20	20	7/25/2008	In-Situ In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.5	<15.7	<15.7	<15.7	-
	50	1/23/2000	in-oitu	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<13.7	<13.7	<13.7	<13.7	-
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	-

SAMPLE LOCATION Diam/Le (DGS) SOIL BAT SOIL (mg/Kg) ENZ/LEN (mg/Kg) MP (mg/Kg) VILENS (mg/Kg) TOTAL (mg/Kg) OPO (mg/Kg) TOLOPE (mg/Kg) Church (mg/Kg) Church (mg/Kg)		SAMPLE DEPTH (BGS)	SAMPLE DATE		METHOD: EPA SW 846-8021B, 5030							METHOD: 8015M			E 300
MM2 @ 010 10" 17/2009 In-Situ -0.0001 -0.0020 -0.0001 -0.0020 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53 -1.53<	SAMPLE LOCATION			SOIL STATUS	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)
MM-2 @ 30" 30" 17/2009 In-Situ <0.0010 <0.0020 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <th< td=""><td>MW-2 @ 10'</td><td>10'</td><td>1/7/2009</td><td>In-Situ</td><td><0.0010</td><td><0.0020</td><td><0.0010</td><td>,0.0020</td><td><0.0010</td><td><0.0020</td><td><15.3</td><td><15.3</td><td><15.3</td><td><15.3</td><td>-</td></th<>	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	-
MM 2 @ 50' 50' 1772009 In-Situ <0.0010 <0.0020 <0.0020 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <0.152 <	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	-
MM 2 @ P7 T7 T7 T72009 In-Situ <0.001 <0.0020 <0.0020 <0.153 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7	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 @ 95' 95' 17/2009 In-Situ -0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0011	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	-
MM-2 @ 110" 110" 117/2009 In-Situ -0.0011 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010	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 @ 120 120' 17/2009 In.Siu -0.0010 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <th< td=""><td>MW-2@110'</td><td>110'</td><td>1/7/2009</td><td>In-Situ</td><td><0.0010</td><td><0.0021</td><td><0.0010</td><td><0.0021</td><td><0.0010</td><td><0.0021</td><td><15.6</td><td><15.6</td><td><15.6</td><td><15.6</td><td>-</td></th<>	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	-
W 3 @ 10' 10' 18/2009 In-Situ c0.001 c0.0021 c0.001 c0.0021 c15.8 c15.8 <thc15.8< th=""> c15.8 c15.8</thc15.8<>	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" 118/2009 In-Situ <0.0011 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>															
MW 3 @ 95 35 18/2009 In-Situ <0.0001 <0.0021 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <	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 @ 50' 50' 1 //8 2009 In-Situ -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0010 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011 -0.0021 -0.0011	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 @ 970' 70' 1 /8/2009 In-Situ <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021	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 @ 90' 90' 1/8/2009 In-Situ <0.0011 <0.0021 <0.0021 <0.0021 <1.57 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7 <15.7<	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 @ 110' 110' 118' 118' 118' 0.0011 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021	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 @ 113' 113' 118' 118' 118' 118' 0.0001 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0022 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.011 <0.0021 <0.011 <0.0021	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	-
SB-5@10' 27 1/9/2009 In-Situ <0.0011 <0.0022 <0.0010 <0.0021 <0.0011 <0.0021 <0.0010 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <0.0021 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.57 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50 <1.50	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' 119/2009 In-Situ <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0021 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.6 <1.6.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.6 <1.5.6 <1.5.6 <1.5.6 <1.5.6 <1.5.6 <1.5.6 <1.5.6 <1.5.6 <1.5.6 <1.5.6 <1.5.6 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7 <1.5.7															
SB-6@20 37 1/9/2009 In-Situ <0.0011 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0010 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011	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 @ 30' 47' 1/9/2009 In-Situ <0.0011 <0.0021 <0.0011 <0.0021 <0.0011 <0.0021 <1.00 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6.0 <1.6	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 @ 40' 57' 1/9/2009 In-Situ <0.0010 <0.0021 <0.0010 <0.0021 <15.6 <15.6 <15.6 <15.6 <15.6 <15.6 <15.6 <15.6 <15.6 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <11.9 <15.9 <11.	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 @ 50' 67' 1/9/2009 In-Situ <0.0011 <0.0021 <0.0021 <0.0021 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <15.9 <17.7 <17.8 <17.	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 @ 60' 77' 1/9/2009 In-Situ <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0011 <0.0022 <0.0012 0.0064 0.0012 0.0064 0.0012 <0.0012 <0.0051 0.0127 47.6 412 51.7 511 - SP #2 N/A 6117/2009 Stockpiled <0.0010	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	-
SP #1 N/A 6/17/2009 Stockpiled <0.001 <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	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 IV/A 61/1/2009 Stockpiled 200010 200020 0.0012 0.0036 0.0017 0.0113 0635 003 63.7 7/24 SP #2 N/A 6/17/2009 Stockpiled <0.0010	CD #1	NI/A	6/17/2000	Stockpilled	-0.0010	-0.0020	0.0012	0.0056	0.0047	0.0115	FC 0	602	62.7	704	
Sh #2 IN/A 6/17/2009 Stockpiled <0.0010 <0.0012 0.0012 0.00131 0.0127 47.8 412 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7 51.7	SF #1	N/A	6/17/2009	Stockpiled	<0.0010	<0.0020	0.0012	0.0056	0.0047	0.0113	30.0 47.6	410	51.7	7 <u>2</u> 4 511	-
SP #3 N/A 01/7/2009 Slotkpilled <0.0310 4.38 0.039 14.3 7.84 33.2 7.51 2.940 207 3,38 - SP #4 N/A 6/22/2009 Stockpilled 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 Stockpilled 0.0213 0.4974 1.05 4.69 2.97 9.22 491 2.640 234 3,365 - SP #6 N/A 6/22/2009 Stockpilled 0.0088 0.1090 0.0334 0.1183 0.1528 0.4203 362 2.360 210 2.932 - SP #6 N/A 6/25/2009 Stockpiled 0.0088 0.0190 0.0384 0.0183 0.1720 1.72 473 2.450 234 3.157 SP #7 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 <td>SF #2</td> <td>N/A</td> <td>6/17/2009</td> <td>Stockpiled</td> <td><0.0010</td> <td><0.0020</td> <td>0.0012</td> <td>0.0064</td> <td>7.94</td> <td>0.0127</td> <td>47.0</td> <td>412</td> <td>267</td> <td>2 5 2 0</td> <td>-</td>	SF #2	N/A	6/17/2009	Stockpiled	<0.0010	<0.0020	0.0012	0.0064	7.94	0.0127	47.0	412	267	2 5 2 0	-
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	SF #3	IN/A	0/17/2009	Stockpiled	<0.0510	4.30	0.09	14.5	7.04	33.2	731	2,340	207	3,556	-
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 #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 #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	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															
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 <0.0010 <0.0020 <0.0010 <0.0022 <0.0011 <0.0022 <16.5 16.7 <16.5 16.7 < Over Burden-3 N/A 7/6/2009 In-Situ <0.0010 <0.0020 <0.0010 <0.0020 <16.51 <16.5 22.6 <16.5 22.6 <16.5	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	-
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	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															
SP #8 N/A 7/2/2009 Stockpiled <0.011 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	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	-
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 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5 16.7 <16.5	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-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	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	-
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 <15.3 <15.3 <15.3 <15.3 <15.3 <15.3 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1	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		19/74	1/0/2003	11/71	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.00LL	<10.5	22.0	<10.5	22.0	
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 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1 <15.1	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 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" @ 20' 20' 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	SVF 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	2.2.300p #2 @ 10									.0.0020					
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	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" @ 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 -	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	-
												,		,	

		SAMPLE DATE		METHOD: EPA SW 846-8021B, 5030							METHOD: 8015M			E 300
SAMPLE LOCATION	DEPTH (BGS)		SOIL STATUS	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)
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
										1 /	1			
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	-

		_		METHOD: EPA SW 846-8021B, 5030							METHOD: 8015M			E 300
SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	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

		METHODS: EPA 18M T104704215									
SAMPLE NAME	SAMPLE DATE	BENZENE (ppmv)	TOLUENE (ppmv)	ETHYL- BENZENE (ppmv)	M,P- XYLENES (ppmv)	O-XYLENES (ppmv)	TOTAL XYLENE (ppmv)	TOTAL BTEX (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

			METHODS	: EPA SW 8	46-8021B, 50	30				
SAMPLE LOCATION	SAMPLE DATE	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL- BENZENE (mg/L)	M,P- XYLENES (mg/L)	O-XYLENES (mg/L)	TOTAL XYLENE (mg/L)	TOTAL BTEX (mg/L)	CHLORIDE (mg/L)	TDS (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	-	-
MM 0	01/00/0000	0.0010	.0.0000	0.0010	.0.0000	.0.0010	.0.0000	.0.0000	000	570
10100-2	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	-	-
	11/10/2009	<0.0020	<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	-	-
	10/10/00/0		0.0050	0.0050		0.0400	0.0100			
IVIVV-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	-	-
	03/07/2014	<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	тот	AL XYLENES	0.62		250	10,000

TABLE 4GROUNDWATER 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 4GROUNDWATER 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

							7 11 001	F		ls 200 7 2	00 8 245 1							
SAMPLE LOCATION	SAMPLE DATE	Aluminum	Arsenic	Barium	Boron	Cadmium	Chromium	Cobalt	Copper	nor	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 Conta from NM WQCC standards Section and 3-103.A.	minant Levels Drinking water ons 1-101.UU	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

							I	EPA Meth	nod SW-8	46 8260E	3					
Date Sampled	Sample Location	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 Contam NMWQCC Drinkin Sections 1-101.	inant Levels from g water standards JU 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

									EPA	Method S	W-846 82	260B							
Date Sampled	Sample Location	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	Dichlorodifluormethane	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 Contam NMWQCC Drinkin Sections 1-101.	iinant Levels from g water standards 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

									EPA Meth	nod SW-8	46 8260E	3						
Date Sampled	Sample Location	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 Contan NMWQCC Drinkin Sections 1-101.	inant Levels from g water standards 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

							EF	PA Metho	d SW-84	6 8260B						
Date Sampled	Sample Location	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 Contam NMWQCC Drinking Sections 1-101.	inant Levels from g water standards JU 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

								EPA	Method S	W846-827	70C						
SAMPLE LOCATION	SAMPLE DATE	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 concentratio	ons are reporte	a in ng/L					
SAMPI F	SAMPI F				E	PA Methods	200.7, 300/300).1, SM2320	В			
DATE	LOCATION	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 Con Levels from NI Drinking water Sections 1-101 103.A.	taminant M WQCC r standards I.UU and 3-				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	
Drilling S Depth Colu	oil P Imns Rea	'ID adina	Petroleum F Odor	Petroleum Stain	Soil Description	<u> </u>	Monitor Well MW-1
F° 58	573	ang	0001	otam			Date DrilledJanuary 6, 2009 Thickness of Bentonite Seal139 Ft
		3	None	None	0 - 10' bos - Caliche white dry		Depth of Exploratory Boring <u>139 Ft bgs</u> Depth to Groundwater <u>126 Ft</u>
	× '	.5	None	None			Ground Water Elevation
		.2	Nama	Nama	10 - 12' bgs - Caliche, white, dry		Indicates the PSH level measured
15	1	.3	None	None			on Indicates the groundwater level measured on _January 6, 2009
			None	None	12 - 25' bgs - Sand, tan with caliche nodules, dry		Indicates samples selected for Laboratory Analysis.
- 20 		.1	None	None			with a photo-ionization detector.
- 25	1	.6			25 - 32' bas - Sand white - tan caliche nodules		
30		.4	None	None	silicious		
		_	None	None	32 - 34' bgs - Sandstone, hard, dry, silicious		
- 35	<u>. S.</u> 1	.3	None	None	34 - 36' bgs - Sand, tan, very fine grained		
40	1	.5	Nono	Nono	36 - 40 bgs - Sanusione, nard, dry, silicious		
- - 45		3	None	None			
Ē			None	None			
= 50		.2	Nono	Nono	40 - 70' bas - Sand, brown, very fine grained, dry		
55		.4	None	None	with caliche nodules		
E.		5	None	None			Bentonite Pellet Seal
Ē	<u> </u>	.5	None	None			Sand Back
- 65 -	1	.2					
70		.5	None	None			Screen
			None	None	70, 80' bas. Sand brown yony fine grained damp		
- 75 		.4	None	None	with caliche nodules		
80	1	.1					
- 85	inen Trett Sing 1	.7	None	None			
	n (m) Kadan Kadan Kadan	_	None	None	80 - 95' bgs - Sand, brown with clay and sandstone nodules, damp		
- 90		.8)	None	None			
- 95	1	.5					
100	1	.6	None	None	95 - 100 bgs - Clay, brown, sandy, damp		
			None	None			
105	1	.6	None	None			
110	2	1		1 tono			Completion Notes
	2	4	None	None	100 - 127 bas - Clay, brown with Sandstone		1.) The monitor well was advanced on date using air rotary drilling techniques
		••	None	None	nodules, damp		 The well was constructed with 2" ID, 0.010 Inch factory slotted, threaded joint, schedule
- 120	2	.2	None	None			40 PVC pipe. 3.) The well is protected with a locked stick up steel over and compression con
125	2	.2	None	None			 The lines between material types shown on the profile log represent approximate
	2	.6	None	None			boundaries. Actual transitions may be gradual.
- 130 					127 - 139 bgs - Clay, brown, sandy		 The depths Indicated are referenced from ground surface.
135							
E 139	TD						
Monito	r Well	Det	tails ^E	E.K. Q	ueen 6-Inch Pearce Bas	in Enviror	nmental Services
	MW-1			Lea C Plair	ounty, New Mexico	Prep By: CDS	Checked By: CDS
				i ian	ю таповну, с.т.	November 17, 2008	

Drilling	Soil	PID	Petroleum	n Petroleum	Monitor Well MW-2		Monitor Well MW-2
Depth C	Columns	Reading	<u>Odor</u>	Stain	Soli Description	זרו	Date Drilled January 6, 2009
E s		1.8	None	None	0 - 5' bgs - Caliche, white, dry		Inckness of Bentonite Seal <u>135 Ft</u> Depth of Exploratory Boring <u>135 Ft bqs</u> Depth to Groundwater <u>120 Ft</u> Ground Water Elevation
E		(27)	None	None			
15		2.4	None	None	5 - 21' bgs - Sand, tan, very fine grained, dry		 Indicates the PSH level measured on Indicates the groundwater level measured on January 6, 2009
E 20		21	None	None			 Indicates samples selected for Laboratory Analysis. PID Head-space reading in ppm obtained
25		1.8	None	None	21 - 23' bgs - Sandstone, tan, silicious 23 - 25' bgs - Sand, tan, very fine grained, dry		with a photo-ionization detector.
E.		$\overline{28}$	None	None	25 - 27' bgs - Sandstone, tan, silicious		
	X	32	None	None	27 - 35' bgs - Sand, tan, with caliche nodules, dry		
E	\sum	3.5	None	None			
Ē		0.4	None	None			
- 45	\sum	3.4	None	None			
50	<u>}</u>	3.2	None	None	35 - 60' bgs - Sand, brown, very fine grained, dry with caliche nodules		Grout Surface Seal
-	\geq	3.2	None	None			Bentonite Pellet Seal
- 60 -		3.0	None	None	60 - 65' bgs - Sand, brown, very fine grained, dry		Sand Pack
- 65 		3.0	None	None	65 - 70' bgs - Sand, brown, very fine grained, damp		Screen
Ē	\sum	3.0	None	None	70 - 80' bos - Sand brown damp with caliche		
- 75	\sum	3.7	None	None	nodules		
		3.3	None	None	80 - 85' bgs - Sand, brown, very fine grained, damp		
- 85 -		3.3	None	None			
- 90 		3.2	None	None			
- 95 	X	4.0	None	None			
		2.9	None	None			
105	X	2.8	None	None	85 - 135' bgs - Clay, brown, sandy, damp with caliche nodules		
- 110 		<u>3.1</u>	None	None			1.) The monitor well was advanced on date
115	Ş	2.5	None	None			using air rotary drilling techniques. 2.) The well was constructed with 2" ID, 0.010 Inch factory slotted, threaded joint, schedule 4.0 DV/G sistorted.
		(2.1)	None	None			3.) The well is protected with a locked stick up steel cover and compression cap.
125	$\mathbf{\mathbf{x}}$						 The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be
130							gradual. 3.) The depths indicated are referenced from ground surface.
E ₁₃₅	ТС	ı					
Maa	tor M		toile	EK O	ueen 6-Inch Pearce Basi	n Enviro	onmental Services
	MV	V-2	10115	Lea C	ounty, New Mexico	Prep By: CDS	Checked By: CDS
				Plair	ns Marketing, L.P.	November 17, 2008	ł

Drilling Soil PID Petrole	um Petroleum	Monitor Well MW-3		Monitor Well MW-3		
Depth Columns Reading Odor	<u>Stain</u>	Soil Description	107	Date DrilledJanuary 8, 2009		
	e None	0 - 5' bgs - Clay, dark brown with caliche nodules and some organic material, dry		Thickness of Bentonite Seal <u>126 Ft</u> Depth of Exploratory Boring <u>126 Ft bgs</u> Depth to Groundwater <u>106 Ft</u>		
None	e None	5 - 10' bgs - Clay, brown, silty with caliche nodules, dry		Ground water Elevation		
	e None	10 - 15' bgs - Sand, brown, very fine grained with caliche nodules, dry		 Indicates the PSH level measured on Indicates the groundwater level 		
-20 2.6	e None	15 - 25' bgs - Sand, brown, very fine grained,damp		measured on January 9, 2009 Indicates samples selected for Laboratory Analysis. PID Head-space reading in ppm obtained		
None	e None			with a photo-ionization detector.		
	e None	25 - 27' bgs - Caliche, white, hard				
None	e None					
None	e None					
None	e None	27 - 60' bgs - Sand, brown with caliche nodules,				
2.3 None	e None	damp				
-50 (2.2)	e None			Grout Surface Seal		
-55 2.6 - 10 None	e None			Bentonite Pellet Seal		
- 60 3.0 E None	e None					
2.3	e None					
2.0 E None	e None			Screen		
-75 1.9	e None					
- 80 1.7	a None					
-85 1.8	e None					
	e None	60 - 126' bgs - Sand, brown, very fine grained, damp				
- None - 95 2.2	e None					
L None 100 1.6	e None					
105 ▼ 2.4	e None					
110 3.4	e None			Completion Notes		
3.6 None	e None			 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 		
TD				on the profile log represent approximate boundaries. Actual transitions may be gradual.		
				 The depins indicated are referenced from ground surface. 		
Monitor Well Details E.K. Queen 6-Inch Pearce Basin Environmental Services						
MW-3 Lea		County, New Mexico	ep By: CDS	Checked By: CDS		
March 9, 2009						
				Monitor Well MW-	-4	Monitor Well MW-4
---------------------------------------	------------------------	-------------------	----------------------------	-----------------------------------------------------------------------------------------	-------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------
Drilling Soil <u>Depth</u> Columns	PID <u>Rea</u> ding	Petroleum Odor	Petroleum <u>St</u> ain	Soil Description		Date Drilled December 11, 2012
F°	3	None	None	0' - 1' bgs - Brown silty sand with clay 1' - 3' bgs - Tan fine sand, soft sandstone		Thickness of Bentonite Seal 97 Ft Depth of Exploratory Boring 140 Ft bgs
5	3.3	None	None	3' - 8' bgs - Tan fine sand, caliche, calicified hard sandstone		Depth to Groundwater117 Ft Ground Water Elevation
	6.6	None	None	8' - 16' bgs - Tan fine sand, sandstone		Indicates the PSH level measured on
	0.5	None	None			 Indicates the groundwater level measured on <u>January 6, 2009</u> Indicates samples selected for laboratory Analysis
	4.9	None	None	16' - 25' bgs - Tan very fine sand, soft sandstone		PID Head-space reading in ppm obtained with a photo-ionization detector.
	2.5	None	None	25' - 27' bgs - Red siliceous sandstone 27' - 28' bgs - Tan fine sand		
	4.9	None	None	28' - 33' bgs - Pale tan fine sand, sandstone		
- 35 	2.2	None	None			
- 40 	7.4	None	None			
45	5.0	None	None			
50 50	2.8	None	None			
55	3.0	None	None			
E 60	4.2	None	None			Bentonite Pellet Seal
E 65	3.3	None	None			Sand Pack
E 70	0.4	None	None			Screen
- - 75 -		None	None			
- 80 -		None	None			
85		None	None	33' - 140' has - Reddish tan verv fine sand (damn)		
90		None	None			
- - 95		None	None			
- 100		None	None			
105		None	None			
- - 110		None	None		111111 をまたです	Completion Notes
115		None	None			 The monitor well was advanced on date using air rotary drilling techniques.
		None	None			 The well was constructed with 2" ID, 0.010 inch factory slotted, threaded joint, schedule 40 PVC pipe.
125						 The well is protected with a locked stick up steel cover and compression cap. The lines between material types shown
130						on the profile log represent approximate boundaries. Actual transitions may be gradual.
135						ground surface.
Monitor W	ell De	taile	EK Q	ueen Pearce 6-Inch	Basin Environme	ental Service Technologies, LLC
MW-4 Lea C			Lea C Plai	ounty, New Mexico	Prep By: BJA	Checked By: BRB
			1 10	no marketing, El	November 17, 2014	















Depth Below				Sc	oil Bor	ing SB-1	
Ground Surface	Drilling Depth (Soil Columns	PID <u>Reading</u>	Petroleum I <u>Odor</u>	Petroleum <u>Stain</u>	Soil Description	Soil Boring Details
			0	None	None	0 - 8' - Clay, silty, brown, some organics, moist	Thickness of Bentonite Seal <u>40 Ft</u> Depth of Exploratory Boring <u>40 Ft bgs</u> Depth to Groundwater Ground Water Flevation
	-			None	None	8 - 10' - Clay, sandy, brown, drv	
			0	None	None	10 - 20' - Sand, brown,	 Indicates the PSH level measured on Indicates the groundwater level
Ē	Ē			None	None	moist, very fine grained	Indicates samples selected for Laboratory Analysis.
20 	20 		0	None	None	20 - 22' - Caliche, white	PID Head-space reading in ppm obtained with a photo-ionization detector.
Ē	Ē			None	None	22 40' Sand brown	
- 30 - 35	- 30 		0	None	None	moist, very fine grained	
E ₄₀	L 40			None	None		
			\smile				

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	
November 17, 2008	I

Checked By: CDS

Depth Below				S	oil Bor	ring SB-2	
Ground Surface	Drilling <u>Depth</u>	Soil Columns	PID <u>Reading</u>	Petroleum <u>Odor</u>	Petroleum <u>Stain</u>	Soil Description	Soil Boring Details Date DrilledJuly 25, 2008
			0	None	None	0 - 13' - Caliche, white, dry,	Thickness of Bentonite Seal <u>30 Ft</u> Depth of Exploratory Boring <u>30 Ft bgs</u> Depth to Groundwater Ground Water Elevation
- 10 - 10 - 15	- 10 - 10 - 15		0	None	None	13 - 15' - Sand, brown, very fine grained 15 - 16' - Caliche, white 16 - 17' - Sand, brown, very	 Indicates the PSH level measured on Indicates the groundwater level measured on
20	20		0	None	None	tine grained 17 - 18' - Caliche, white 18 - 20' - Sand, brown, very fine grained	 Indicates samples selected for Laboratory Analysis. PID Head-space reading in ppm obtained with a photo-ionization detector.
25	- 		0	None None	None None	20 - 28' - Sand, brown, very fine grained with some caliche nodules 28 - 29' - Chert, white, hard	
E ₃₀	E ₃₀		0			29 - 30' - Sand, brown, very fine grained	

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-2 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				S	oil Bor	ring SB-3	
Ground Surface	Drilling Depth (Soil Columns	PID <u>Reading</u>	Petroleum <u>Odor</u>	Petroleum <u>Stain</u>	Soil Description	Soil Boring Details Date Drilled July 25, 2008
	0 		0	None	None	0 - 5' - Caliche, sandy, white to brown	Thickness of Bentonite Seal <u>30 Ft</u> Depth of Exploratory Boring <u>30 Ft bgs</u> Depth to Groundwater Ground Water Elevation
Ē			(01)	None	None	5 - 17' - Sand, brown, very	
			0.1	None	None	fine grained	 Indicates the PSH level measured on Indicates the groundwater level measured on
Ē	E	88888		None	None		 Indicates samples selected for Laboratory Analysis.
20	20		0.1	None	None	17 - 24' - Caliche, sandy, white to brown	PID Head-space reading in ppm obtained with a photo-ionization detector.
25 	25 		0	None	None	24 - 26' - Chert, white, hard 26 - 30' - Sand, brown, very fine grained, with chert laminations	

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
November 17, 2008

Checked By: CDS

Depth Below				Sc	oil Bor	ring SB-4		
Ground Surface	Drilling Depth	Soil <u>Columns</u>	PID Reading	Petroleum F <u>Odor</u>	Petroleum <u>Stain</u>	Soil Descrip	otion	Soll Boring Details Date Drilled July 25. 2008
20	0 		861	Heavy	Slight	0 - 9' - Sand, yellow fine grained	, very	Thickness of Bentonite Seal <u>100 Ft</u> Depth of Exploratory Boring <u>100 Ft bgs</u> Depth to Groundwater <u>110 Ft</u> Ground Water Elevation
- 25 - -	10		545	Heavy	Slight	9 - 10' - Chert, white	e, hard	Indicates the PSH level measured
	15		1348	Moderate	Slight	10 - 15' - Sand, yello brown, very fine gra	owish ained	Indicates the groundwater level measured on
- 35 	20		(1436)	Moderate	None			 Indicates samples selected for Laboratory Analysis. PID Head-space reading in ppm obtained with between between between
40	- 25		597	Moderate	None			with a photo-ionization detector.
- 			283	Moderate	None			
50			100	Moderate	None			
- - - 55	- 35 - -		133	Moderate	None			
60	- 40 -		(275)	Slight	None	15 - 75' bgs - Sand,	brown,	
- 65	- 45 -		132	Slight	None	very fine grained		
			22.2	Slight	None			
	- 55 -		219	Moderate	None			
	60		76	Mederate	None			
- 80 -	65		144	Moderate	None			
- 85 -	70		158	Moderate	None			
- 90 -	75		47.9	Moderate	None			
- 95 -	80		(139)	Slight	None			
100	- 85		106	Slight	None	75 - 100' bas - Sand	l/Clay	
- 105			35.2	Slight	None	brown, dry	i / Olay,	Notos
- 110 -			00.0	Slight	None			1.) The soil boring was advanced on date
- 115 - 117	100	T	35.2	Slight	None			 The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradient
		Dar		Dataila				yrauua.
	E	Soi .K. Qu	il Boring een 6-In	SB-4 ch Pearce	e	Bas	sin En∖	vironmental Services
	L	ea Co. Plains	unty, Ne Marketi	w Mexico			Prep By: CDS	Checked By: CDS
		1 101113	manou				November 17, 2	2008

November 17, 2008

Depth				So	il Bo	ring SB-5		
Ground	Drilling	Soil	PID	Petroleum P	etroleum	Soil Docorin	tion	Soil Boring Details
Surface	_ <u>Depth (</u> ⊏⁰		Reading	<u>Odor</u>	<u>Stain</u>	0 - 2' - Chert and cal	cified	Date DrilledJanuary 9, 2009 Thickness of Bentonite Seal60 Ft
 20			17 5	None	None	Sandstone, white, ha 2 - 7' - Sand, brown,	ard	Depth of Exploratory Boring <u>Approx. 77 Ft t</u> Depth to Groundwater
25			17.5	None	None	medium grained with well rounded	n gravel,	Ground Water Elevation
	- 10 -		50.2	None	None	medium grained with well rounded, moist	n gravel,	✓ Indicates the PSH level measured
	- 15 -		16.2			,		 Indicates the groundwater level measured on Indicates samples selected for
35 	20		(16.3)	None	None			PID Head-space reading in ppm obtained with a oboto-ionization detector.
- 40 -	- 25		11 8	None	None	10 - 39' - Sand, brow grained, moist	n, fine	
- 				None	None			
 	- 30 -		(10.6)	None	None			
	- 35 -		9.8	Nono	Nono			
- 55 -	40		9.8	None	None	39 - 40' - Sand, brow fine grained, dry	vn, very	
- 60 -	45		6.8	None	None			
- - 65 -	- -		(122)	None	None	40 - 60' - Sand, brow fine grained moist	vn, very	
70				None	None			
- 75	55 		11.3	None	None			
E	E ₆₀	TD	(11.4)					
								Notes
								 The soil boring was advanced on date using air rotary drilling techniques.
								 The lines between material types show on the profile log represent approximate
								boundaries. Actual transitions may be gradual.
		Borir Soil	ng Log [Borina	Details SB-5		Bas	in Env	vironmental Service
	E	K. Que	en 6-In Intv. Ne	ch Pearce w Mexico		ſ	Pren Byr CDC	Checked Dur CDS
	-	Plains	Marketi	ng, L P			мarch 9, 2009	

Depth Below Ground <u>Surface</u> F [°]	Soll <u>Column</u>	Chloride Field <u>Test</u>	PID <u>Reading</u>	Petroleum F <u>Odor</u> None	Petroleum <u>Stain</u> None	Soil Description	Date (Boring SB-6	
5			24.8	None	None		Date L Thickn Depth Depth	ess of Bentonite Seal 60 Ft of Exploratory Boring 60 Ft bgs	
10			67.7	None	None	0' - 18' - Backfill (tan silty sand with clay)	Groun	d Water Elevation	
15			100	None	None		T T	Indicates the PSH level measured	
20			330	Moderate	None	18' - 22' - Tan fine sand - sandstone	0	Indicates and groundwater level Indicates samples selected for Laboratory Analysis.	
25			862	Heavy	None		PID	Head-space reading in ppm obtained with a photo-ionization detector.	
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	35' - 60' - Gold fine to very fine sand			
55			181	Heavy	None				
E ⁶⁰			30.3	Heavy	None				

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

Checked By: BRB

Prep By: BJA

March 15, 2011

Soil Boring SB-6

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

Depth Below Ground	Soll	Chloride Field	PID	Petroleum F	Petroleum	Soil Description		<u> </u>	
		<u>l est</u>	<u>Reading</u>	<u>None</u> None	<u>Stain</u> None None		Date Thick	BORIR Drilled	<u>IQ ЭВ-/</u> January 28, 2011_ eal67 Ft
				None	None	0' - 17' - Backfill (tan silty sand with clay	Depth Depth Grour	Depth of Exploratory Boring <u>67 Ft bgs</u> Depth to Groundwater Ground Water Elevation	
12				None	None		•	Indicates the PSH	level measured
17			34.0	Moderate	None	17' - 22' - Tan fine sand - sandstone	 	Indicates the grou measured on Indicates samples	indwater level
22			622	Heavy	None		PID	Laboratory Analys Head-space readi with a photo-loniza	sis. ng in ppm obtained atlon detector.
27			(1,053)	Heavy	None	22' - 33' - Red fine sand - sandstone			
- ³² - 37			(444)	Heavy	None	33' - 35' - Red silty sand - silty clay			
42			729	Heavy	None				
47			(1,781)	Heavy	None				
52			1,967	Heavy	None	35' - 67' - Gold fine to very fine sand			
57			861	Heavy	None				
62			2,600	Heavy	None				
E 67			3,648	Heavy	None				
								Compl 1.) The soil borin using air rota 2.) The lines betw	etion Notes g was advanced on date y drilling techniques.
			Plains	Pipeline. LP	•		Basin En	gradual vironmental Ser 3100 Plair	vice Technologies, LLC
ring SB-	ing SB-7			n Pearce 6-Ir	nch lico		Prep By: E	Lovington, N BJA	Checked By: BRB
-			200 0001	,,			March 15,	2011	

Soil Bo

Depth Below Soil Field Surface Column Test	PID Reading (48.0) (1,309) (271) (400) (140) (1,389) (1,296) (986)	Petroleum F Odor None None None Moderate Heavy Heavy Heavy Heavy Heavy Heavy	Petroleum Stain None None None None None None None Non	Soil Description 0' - 18' - Backfill (tan silty sand with clay) 18' - 22' - Tan fine sand - sandstone 22' - 33' - Red fine sand - sandstone 33' - 35' - Red silty sand - silty clay 35' - 70' - Gold fine to very fine sand	Date Thick Depti Orou Y PID	Boriu	Ig SB-8
	<u>892</u> 802	Heavy Heavy	None None	70' - TD - Tan fine sand - sandstone			
						Comp 1.) The soil borin using air rota 2.) The lines bet boundaries. gradual.	etion Notes g was advanced on date ry drilling techniques. ween material types shown log represent approximate Actual transitions may be
ing SB-8	Plains EK Quee	s Pipeline, LP en Pearce 6-Ir	nch	Hasin Environments	Basin En	ivironmental Ser 3100 Plai Lovington, N	vice Technologies, LLC ns Hwy. IM 88260
	Lea Cou	nty, New Mex	lco	Service Technologie	Prep By: May 15, 2	ВЈА 2012	Checked By: BRB

Soil Bor

Depth Below Ground <u>Surface</u>	Soil <u>Column</u>	Chloride Field <u>Test</u>	PID <u>Reading</u>	Petroleum P Odor	etroleum <u>Stain</u>	Soil Description		Boring SB-9
F°				NONE	None		Date I	Drilled January 23, 2012
E 5				None	None		Depth	of Exploratory Boring <u>35 Ft bgs</u>
- 10				None	None	0' - 18' - Brown fine sandy clay	Groun	d Water Elevation
15				None	None		T	Indicates the PSH level measured on
20			45.1	None	None	18' - 21' - Tan fine sand - calcified sandstone 21' - 22' - Tan fine sand - siliceous sandstone		Indicates and a selected for Laboratory Analysis.
25			6.0	None	None		FID	with a photo-ionization detector.
30			8.6	None	None	22' - 35' - Tan fine sand - sandstone (layers)		
E 35			7.9	None	None			

Completion Notes

1.) The soil boring was advanced on date using air rotary drilling techniques.

Soil Boring SB-9

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



	doing air rota	ry animig toorningaoor	
 The lines between material types sho on the profile log represent approxin boundaries. Actual transitions may ligradual. 			
Basin Environmental Service Technologies			
	3100 Plair	ns Hwy.	
	Lovington, N	IM 88260	
	Prep By: BJA	Checked By: BRB	
	May 15, 2012		

Depth Below Ground Surface Colu 5 5 5 10 10 10 15 10 10 10 10 10 10 10 10 10 10 10 10 10	Chloride Field Test	PID Reading (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115) (115)	Petroleum P <u>Odor</u> None None None Moderate Heavy Slight Slight Slight Slight	Petroleum <u>Stain</u> None None None None None None None None None None	Soil Des 0' - 19' - Back 19' - 21' - Tar 21' - 26' - Tar 26' - 60' - Tar	Scription (fill (tan fine sandy clay) fine sand - silty sandstone in fine sandstone (layers) to gold fine sand	Date Thick Deptt Groun	Borin	g SB-10 January 23, 2012 eat 60 Ft ing 60 Ft bgs t level measured indwater level is selected for is. ing in ppm obtained ation detector.
						in Environme.	Basin En	Compl 1.) The soil borin using air rota 2.) The lines bet boundaries. gradual. vironmental Sere 2100 Disi	letion Notes g was advanced on date ry drilling techniques. ween material types shown tog represent approximate Actual transitions may be rice Technologies, LLC
ring SB-10		Plains EK Quee Lea Cour	Pipeline, LP n Pearce 6-In nty, New Mex	ich Ico		Bass Effective Solutions	Prep By: I	3100 Plai Lovington, N BJA	IN 71WY. IM 88260 Checked By: BRB
						Vice Technology	May 15, 2	2012	

Soil Bo

Appendix C SVE Discharge Graph



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,

They on

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

Enclosures

cc: File

EKQueen (Bearce) 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. <u>Grant:</u> For consideration, including the covenants herein, the Commissioner renews and grants to Grantee a Water Easement within the area described as follows:

Quarter-Quar	rter Section	Township	Range	Acreage
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:

 Well Designation(name/number)
 Expected Volume

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

Less than 500 gallons

These well-sites may overlap.

2. <u>Purpose:</u> 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. <u>Related Uses:</u> 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:

2012 OCT 15 AM 10 14

1. <u>Consideration for Grant:</u> 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. <u>Annual Rental; Payment:</u> Grantee shall pay annual rental in the amount of <u>\$2,000.00</u> to be due on or before <u>November 25</u> 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. <u>Term of Easement:</u> The grant of this Water Monitoring Easement is for a term of five (5) years, commencing <u>November 25, 2008</u> and expiring <u>November 24, 2013</u> 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. <u>Amendment:</u> 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. <u>Relationship With Other State Agencies:</u> 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. <u>Grantee Standard of Care:</u> 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. <u>Grantee Improvements:</u> 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. <u>Non-impairment:</u> 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. <u>Rights-of-way:</u> 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. <u>Assignment:</u> 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. <u>Relinquishment:</u> 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. <u>Grantee Breach:</u> 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. <u>Documentation:</u> 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. <u>Survey, Posting and Fencing:</u> 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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15. <u>Applicable Land Office Rules</u>: 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. <u>Compliance With Laws:</u> 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. <u>Indemnity:</u> 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. <u>Bond:</u> 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. <u>Dispute Resolution</u>: 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. <u>No Waiver by Commissioner:</u> 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. <u>Scope of Agreement</u>: 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. <u>Amendment</u>: This easement shall not be altered, changed, or amended except by a written instrument executed by both the Commissioner and Grantee.

24. <u>Non-Impairment:</u> 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. <u>Applicable Law</u>: 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. <u>Successors In Interest</u>: 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. <u>Time</u>: 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. <u>Singular And Plural; Use Of Genders</u>: 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. <u>Headings and Titles</u>: 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. <u>Severability</u>: 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. <u>No Joint Venture</u>: 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. <u>Security</u>: 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. <u>No Commissioner Personal Liability</u>: 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. <u>Notices</u>: 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

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GRANTEE:
By Jeffrey & Darm, Sr. Environmental & Regulatory Specialist
STATE OF TEXAS)) ss COUNTY OF HARRIS) Subscribed and sworn to before me this <u>11</u> ⁴ day of <u>October</u> 20 <u>12</u> , by <u>Seffrey I. Dann</u> , Grantee.
S <u>September 19, 2016</u> A MY COMMISSION EXPIRES L Received on \$500.00 July 26 2012
$\boxed{1}$ \$500.00 per well fee, total cash due \$ 0 ; and
\$500.00 single-well bond, or
\$1,000.00 blanket bond \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,00

COMMISSIONER

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

dated: 10-19-12

S E **A L**

STOT WH ST 100 ZIOZ

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,

Åndy Morley

(575) 622-6521

Enclosure

		e No.		
Interstate Stream Commission	NEW MEXICO OFFICE OF APPLICATION FOR PERM WITH NO CONSUMPTIN	THE STATE ENGINEER		
	(check applica	able box):		
	For fees, see State Engineer websit	e: 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 Operat	ions Submitted? 🗋 Yes 🛛 No			
Purpose: Exploratory Monitoring A separate permit will be Temporary Request Plugging Plan of Operat	For fees, see State Engineer websit Pollution Control And / Or Recovery Construction Site De-Watering Mineral De-Watering required to apply water to beneficial use. Requested Start Date: 11/6/2012 ions Submitted? Yes No	e: http://www.ose,state.nm.us/ Geo-Thermal Other (Describe): Requested End Date: 11/6/2013		

1. APPLICANT(S)

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.

Name: Plains Pipeline, LP		Name:	
Contact or Agent: Ben J. Arguijo (Basin Env	check here if Agent 🛛 ironmental)	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 Phone (Work): (713)646-46	Home 🛛 Cell	Phone: Phone (Work):	Home Cell
E-mail (optional): jpdann@ bjarguijo@basinenv.c	paalp.com om	E-mail (optional):	

01 d V 8-300 260	FOR OSE INTE	ERNAL USE	Application for Permit, Form wr-07, Rev 4/12/12
	File Number:	1-13211	Trn Number: 516944
Entre spaceto BIAIS	Trans Descripti	ол (optional):	
	Sub-Basin:		
	PCW/LOG Due	Date: 11-30-	/3
	·····		Page 1 of 4

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

te



Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).							
District II (Roswell) and Dist	rict VII (Cimarron) c	ustomers, provide	a PLSS location in addition to above.				
Image: MM State Plane (NAD83) (Feet) Image: UTM (NAD83) (Meters) Image: Lat/Long (WGS84) (to the nearest in the second) Image: MM West Zone Image: Zone 12N Image: Lat/Long (WGS84) (to the nearest in the second) Image: MM East Zone Image: Zone 13N Image: Lat/Long (WGS84) (to the nearest in the second) Image: MM Central Zone Image: Zone 13N Image: Lat/Long (WGS84) (to the nearest in the second)							
Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (<i>Quarters or Halves , Section, Township, Range</i>) 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:							
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	w Mexico State Land	d Office					
Well Information: NOTE: If r If yes, how many	Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? [] Yes [] No If ves. how many						
Approximate depth of well (fe	et): 140.00		Dutside diameter of well casing (inches): 2.00				
Driller Name: Straub Corpor	ation		Driller License Number: WD1478				
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.

fordiel des aussi Sivis -

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:

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

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 Signa	ature
, ,	ACTION O	F THE STATE ENGINEER	
	7	This application is:	
7	approved	partially approved	🗖 denied
provided it is not exercised to the detriment Mexico nor detrimental to the public welfar	of any others ha and further sub	aving existing rights, and is n ject to the <u>attached</u> conditior	ot contrary to the conservation of water in New ns of approval.
Witness my hand and seal this	ay of <u>Nove</u>	ember 20 ¹²	_ , for the State Engineer,
Acott A. Verl	nines, P.E.	, State Engineer	
By: Signature		Print	
Tille: Andy Morley, Acting Mana	iger Distric	et II	
	FOR OSE	INTERNAL USE	Application for Permit, Form wr-0
	File Numbe	er: 1-132/1	Trn Number: 511944

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: 11/08/2012Pub. 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	16 day of Nov	A.D.,	2012
	Scott A. Verhines, P.E.	, State Engineer		
	By: Ardy Moly			
	Andy Morley			
Trn	Desc: L-13211 MONITOR	Fi	le Number:	L 13211
		T	rn Number:	516944

page: 1

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 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

	Lab Id:	305463-001			
Analysis Proprested	Field Id:	Floor @ 17'			
Analysis Kequesieu	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.

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(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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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, Suite 104, San Antonio, TX 78238	(210) 509-3334	(210) 509-3335
2505 N. Falkenburg Rd., Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
6017 Financial Dr., Norcross, GA 30071	(770) 449-8800	(770) 449-5477





Project Name: E K Queen 6" Pearce

Vork Order #: 305463			Project II	D: 2008-113							
Lab Batch #: 725253 Sa	ample: 305463-001 / SM	P Ba	tch: 1 Matri	x: Soil							
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY						
TPH by SW8015 I Analytes	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane		152	100	152	70-135	**					
o-Terphenyl		163	50.0	326	70-135	**					
Lab Batch #: 725253 S	ample: 305532-001 S / N	IS Ba	tch: ¹ Matri	x: Soil							
Units: mg/kg		SURROGATE RECOVERY STUDY									
TPH by SW8015 I Analytes	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane		97.2	100	97	70-135						
o-Terphenyl		52.5	50.0	105	70-135						
Lab Batch #: 725253 S	ample: 305532-001 SD /	MSD Ba	tch· 1 Matri	v. Soil							
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY						
TPH by SW8015 I Analytes	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane		96.0	100	96	70-135						
o-Terphenyl		53.9	50.0	108	70-135						
Lab Batch #: 725253 S	ample: 510516-1-BKS / 1	BKS Ba	tch: 1 Matri	x: Solid							
Units: mg/kg	•	SU	RROGATE RE	ECOVERY S	STUDY						
TPH by SW8015 I Analytes	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane		87.2	100	87	70-135						
o-Terphenyl		49.9	50.0	100	70-135						
Lab Batch #: 725253	ample: 510516-1-BLK /	BLK Ba	tch: 1 Matri	x: Solid							
Units: mg/kg	•	SU	RROGATE RE	COVERY	STUDY						
TPH by SW8015 I Analytes	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
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





Project Name: E K Queen 6" Pearce

Work Order #: 305463	Project ID: 2008-113												
Lab Batch #: 725253 Sample: 510516-	Sample: 510516-1-BSD / BSDBatch:1Matrix: Solid												
Units: mg/kg	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





Project Name: E K Queen 6" Pearce

Work Order #: 305463 Analyst: ASA Lab Batch ID: 725253	Sample: 510516-1-B	Da KS	Date Prepared: 06/11/2008 Project ID: 2008-113 S Batch #: 1 Date Analyzed: 06/11/2008									
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH by SW8015	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes			[2]	[0]	[2]		Result [1]	[0]				
C6-C12 Gasoline Range Hydrocarb	ons	ND	1000	906	91	1000	928	93	2	70-135	35	
C12-C28 Diesel Range Hydrocarbo	ns	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 Q	C- Sample ID:	305532-	001 S	Ba	tch #:	1 Matrix	k: Soil						
Date Analyzed: 06/12/2008	Date Prepared:	06/11/20	008	An	alyst:	ASA							
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	STUDY				
TPH by SW8015 Mod	Parent	Spiles	Spiked Sample	Spiked	Enilto	Duplicate	Spiked	חחח	Control	Control	Flag		
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	Dup. %R [G]	%	%R	%RPD	гıag		
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 $[D] = 100^{*}(C-A)/B$ Relative Percent Difference $RPD = 200^{*}(D-G)/(D+G)$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

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





Project Name: E K Queen 6" Pearce

Work Order #: 305463

Lab Batch #: 725130			Project I	D: 2008-113	3						
Date Analyzed: 06/10/2008 Date Pr	epared: 06/1	0/2008	st: WRU	: WRU							
QC- Sample ID: 305463-001 D	Batch #: 1 Matrix: Soil										
Reporting Units: %	SAMPLE / SAMPLE DUPLICATE RECOVER										
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag						
Analyte		[B]									
Percent Moisture	3.25	3.11	4	20							

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

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 C	DF 01										-	Pr	ojec	t Na	me:	ΕK	QL	JEE	N 6	" Pe	arce	e				
	Company Name	Basin Environme	ntal Serv	ice Te	chnol	ogies, LLC											-		Ρ	rojec	:t#:	200	8-1	13								
	Company Address:	P.O. Box 301															_	I	Proj	ect L	.oc:	Lea	Cou	inty,	NM							
	City/State/Zip:	Lovington, NM 88	260														_			P)#:		- C	. J. I	leyr	old	5				.	
	Telephone No:	(505) 441-2244					Fax No:		(50	5) 39)6-14	429					_ F	lepor	t Fo	rmal	::	X	Stan	daro	i	Γ] TR	RP		۱	I₽ÐE	S
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O</th><th>lone</th><th>)ther (Specify)</th><th>w=Drinking water SL = Sludg</th><th>W - Groundwater 5 - Soil/Soil P = Non-Potable Specify Othe</th><th>PH: 418.1 (8015M) 801</th><th>PH: TX 1005 TX 1006</th><th>ations (Ca, Mg, Na, K)</th><th>nions (Cl, SO4, Alkalınıty)</th><th>AR / ESP / CEC</th><th>etals' As Ag Ba Cd Cr Pb Hg S</th><th>olaties</th><th>emivolalies TEV 80218/5030 Ar BTEX 826</th><th></th><th>MAD</th><th></th><th></th><th>tUSH TAT (Pre-Schedule) 24.</th><th>tandard TAT</th></tr><tr><td></td><td>FIE</td><td>or @ 17'</td><td></td><td>_#2</td><td><u> </u></td><td>6/6/2008</td><td>1400</td><td>Ē</td><td><u>۲</u></td><td>_ x</td><td><u>+</u></td><td><u> </u></td><td>-</td><td></td><td></td><td>Ť</td><td>۵ S</td><td><u>ç z</u> Oli</td><td>X</td><td>F</td><td>0</td><td><</td><td>S I</td><td>2:</td><td>> 0</td><td><u>, </u></td><td><u>, </u></td><td>z</td><td>$\left \right$</td><td>+</td><td>╇</td><td>- x</td></tr><tr><td>(//</td><td></td><td></td><td></td><td></td><td></td><td>0.0.2000</td><td></td><td></td><td></td><td>Ĥ</td><td>_†</td><td>_†</td><td></td><td>╈</td><td>\top</td><td></td><td></td><td>0.2</td><td>Ê</td><td>\square</td><td></td><td>1</td><td>╈</td><td></td><td>+</td><td></td><td>+</td><td>\uparrow</td><td></td><td></td><td>-</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>T</td><td></td><td></td><td></td><td></td><td></td><td>\bot</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td>_</td><td>_</td><td></td><td></td><td>_</td><td></td><td></td><td>┞</td><td> </td><td></td><td>\dashv</td><td>_</td><td>+</td><td>+</td><td>+</td><td>∔</td><td>₋</td><td>\vdash</td><td></td><td>╇</td><td>+-</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-+</td><td></td><td>+</td><td></td><td><u> </u></td><td></td><td>┢</td><td>┢</td><td></td><td>\dashv</td><td>+</td><td>╀</td><td>+</td><td>+</td><td>┢</td><td>┼─</td><td>┝─┤</td><td>+</td><td>+</td><td>┢</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>\square</td><td>+</td><td>-+</td><td>╉</td><td></td><td>+</td><td></td><td>\vdash</td><td></td><td>╀─</td><td>╉──</td><td></td><td>-+</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>┼━</td><td>╞┼</td><td>+</td><td>╉</td><td>┢</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>:</td><td></td><td>· · · · · · · · · · · · · · · · · · ·</td><td></td><td></td><td></td><td>-+</td><td>-+</td><td>╉</td><td>-+-</td><td>+-</td><td></td><td></td><td></td><td>┢</td><td>┢</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>┢</td><td></td><td></td><td>+</td><td>╋</td><td>╈</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>- 1-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>T</td><td></td><td>T</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Special</td><td></td><td></td><td>Date</td><td>Tir</td><td>ne</td><td>Pessived by</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td>ate</td><td></td><td>Tim</td><td></td><td>Lab Sarr VOC</td><td>orate iple Cs Fr</td><td>ory (Cont ree o</td><td>Com taine of He</td><td>men rs In adsj</td><td>itact' pace</td><td>? 17</td><td></td><td></td><td>CLC CLC</td><td>NNN</td><td></td></tr><tr><td>Relinquis</td><td>shed by:</td><td></td><td>Date</td><td>90 Tir</td><td>) 2 ne</td><td>Received by: Received by: Received by EL</td><td>OT:</td><td>67</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Da</td><td>ite</td><td>-+</td><td>Tim</td><td>e e</td><td>Cus Cus Cus San</td><td>tody tody tody tple by Si by Ci</td><td>Seal seal Hand ampli ourie</td><td>d De er/Cl</td><td>ion son coo liver ient U</td><td>taine ler(s ed Rep. 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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client:	Broin Enu.	Plains
Date/ Time:	6 10 08	-1 CZ
Lab ID # :	3054	63
initials:	CNL	

Sample Receipt Checklist

Client Initials

Temperature of container/ cooler?	Ves	No	4.5 °C
Shipping container in good condition?	(es)	No	
Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present /
Custody Seals intact on sample bottles/ container?	Ves'	No	Not Present
Chain of Custody present?	Yes	No	
Sample instructions complete of Chain of Custody?	Yes?	No	
Chain of Custody signed when relinquished/ received?	Yes	No	
Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid
Container label(s) legible and intact?	Yes	No	Not Applicable
Sample matrix/ properties agree with Chain of Custody?	Yes)	No	
Containers supplied by ELOT?	Yes	No	
Samples in proper container/ bottle?	Yes	No	See Below
Samples properly preserved?	Yes	No	See Below
Sample bottles intact?	Ves'	No	
Preservations documented on Chain of Custody?	Yes	No	
Containers documented on Chain of Custody?	Yes	No	
Sufficient sample amount for indicated test(s)?	Yes	No	See Below
All samples received within sufficient hold time?	Yes	No	See Below
Subcontract of sample(s)?	Yes	No	Not Applicable
VOC samples have zero headspace?	Yes	No	Not Applicable
	Temperature of container/ cooler? Shipping container in good condition? Custody Seals intact on shipping container/ cooler? Custody Seals intact on sample bottles/ container? Chain of Custody present? Sample instructions complete of Chain of Custody? Chain of Custody signed when relinquished/ received? Chain of Custody agrees with sample label(s)? Container label(s) legible and intact? Sample matrix/ properties agree with Chain of Custody? Containers supplied by ELOT? Samples in proper container/ bottle? Samples properly preserved? Sample bottles intact? Preservations documented on Chain of Custody? Containers documented on Chain of Custody? Sufficient sample amount for indicated test(s)? All samples received within sufficient hold time? Subcontract of sample(s)?	Temperature of container/ cooler?YesShipping container in good condition?YesCustody Seals intact on shipping container/ cooler?YesCustody Seals intact on sample bottles/ container?YesChain of Custody present?YesSample instructions complete of Chain of Custody?YesChain of Custody signed when relinquished/ received?YesChain of Custody agrees with sample label(s)?YesContainer label(s) legible and intact?YesSample matrix/ properties agree with Chain of Custody?YesContainers supplied by ELOT?YesSamples in proper container/ bottle?YesSample bottles intact?YesSample bottles intact?YesSample bottles intact?YesSamples properly preserved?YesSample bottles intact?YesAll sample amount for indicated test(s)?YesAll samples received within sufficient hold time?YesVOC samples have zero headspace?Yes	Temperature of container/ cooler?YesNoShipping container in good condition?YesNoCustody Seals intact on shipping container/ cooler?YesNoCustody Seals intact on sample bottles/ container?YesNoCustody Seals intact on sample bottles/ container?YesNoChain of Custody present?YesNoSample instructions complete of Chain of Custody?YesNoChain of Custody signed when relinquished/ received?YesNoContainer label(s) legible and intact?YesNoContainer label(s) legible and intact?YesNoSample matrix/ properties agree with Chain of Custody?YesNoContainers supplied by ELOT?YesNoSamples in proper container/ bottle?YesNoSample poperly preserved?YesNoSample bottles intact?YesNoSample bottles intact?YesNoSample bottles intact?YesNoSample bottles intact?YesNoSample bottles intact?YesNoSufficient sample amount for indicated test(s)?YesNoSubcontract of sample(s)?YesNoSubcontract of sample(s)?

Variance Documentation

Contact:		Contacted by:	 	Date/ Time:	
Regarding:			 · · · · · · · · · · · · · · · · · · ·		
Corrective Ad	ction Taken:	8 2110 2 22 1-1410	 ,		

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

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



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.

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. 308807 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 308807



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 Name: E K QUEEN 6'' PEARCE

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

Report Date: 04-AUG-08

								Project Ma	nager:	Brent Barron,	, II		
	Lab Id:	308807-0	01	308807-0	002	308807-0	003	308807-0)04	308807-0	005	308807-0	006
Anglusia Degregated	Field Id:	SB-1 @ 2	10'	SB-1@2	20'	SB-1 @	30'	SB-1 @	40'	SB-2 @	10'	SB-2 @	20'
Anaiysis Kequesiea	Depth:		ļ										
	Matrix:	SOIL	ļ	SOIL		SOIL	_	SOIL	,	SOIL		SOIL	
	Sampled:	Jul-25-08 0	18:55	Jul-25-08 0	9:05	Jul-25-08	09:15	Jul-25-08 ()9:25	Jul-25-08 (09:55	Jul-25-08	10:05
BTEX by EPA 8021B	Extracted:	Jul-30-08 1	0:00	Jul-30-08 1	0:00	Jul-30-08	10:00	Jul-30-08 1	0:00	Jul-30-08	10:00	Jul-30-08	10:00
	Analyzed:	Jul-30-08 1	6:04	Jul-30-08 1	7:16	Jul-30-08	17:40	Jul-30-08 1	8:04	Jul-30-08	18:27	Jul-30-08	18:51
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.0011	ND	0.0011	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	Extracted:												
	Analyzed:	Jul-30-08 (00:80	Jul-30-08 0	08:00	Jul-30-08	08:00	Jul-30-08 ()8:00	Jul-30-08 (08:00	Jul-30-08	08:00
	Units/RL:	%	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	Extracted:	Jul-29-08 1	1:40	Jul-29-08 1	1:40	Jul-29-08	11:40	Jul-29-08 1	1:40	Jul-29-08	11:40	Jul-29-08	13:45
	Analyzed:	Jul-30-08 1	4:27	Jul-29-08 1	4:17	Jul-30-08	12:42	Jul-30-08 1	6:20	Jul-30-08	16:47	Jul-30-08 (02:22
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	16.2	ND	16.4	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	ļ	19.7		ND		ND		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.

Brent Barron

Odessa Laboratory Director



Certificate of Analysis Summary 308807 PLAINS ALL AMERICAN EH&S, Midland, TX Project Name: E K QUEEN 6'' PEARCE

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

Report Date: 04-AUG-08

								Project Ma	nager:	Brent Barron	, II		
	Lab Id:	308807-0	007	308807-0	08	308807-	009	308807-	010	308807-	011	308807-0	012
Anglusia Degregated	Field Id:	SB-2 @	30'	SB-3 @ 1	10'	SB-3 @	20'	SB-3 @	30'	SB-4 @	10'	SB-4 @	20'
Analysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL		SOII		SOIL		SOIL		SOIL	
	Sampled:	Jul-25-08	0:15	Jul-25-08 1	1:25	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 1	0:00	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 1	9:39	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:												
	Analyzed:	Jul-30-08	08:00	Jul-30-08 0	8:00	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		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 1	1:40	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 1	7:43	Jul-30-08	18:11	Jul-30-08	18:40	Jul-30-08	19:39	Jul-30-08 2	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 Name: E K QUEEN 6'' PEARCE

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

Report Date: 04-AUG-08

								Project Ma	nager:	Brent Barron	, II		
	Lab Id:	308807-0	013	308807-0	014	308807-	015	308807-0	016	308807-	017	308807-0	018
Amalusia Dogwootod	Field Id:	SB-4 @	30'	SB-4 @ 4	40'	SB-4 @	50'	SB-4 @	60'	SB-4 @	70'	SB-4 @	80'
Analysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL		SOII		SOIL		SOIL		SOIL	
	Sampled:	Jul-25-08 1	2:55	Jul-25-08 1	3:05	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 1	0:00	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 2	2:50	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 0	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 1	1:40	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 1	9:00	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 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

	Lab Id:	308807-019	308807-020		
Analysis Paguastad	Field Id:	SB-4 @ 90'	SB-4 @ 100'		
Anulysis Kequesteu	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:				
	Analyzed:	Jul-30-08 08:00	Jul-30-08 08:00		
	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



- 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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5332 Blackberry Drive, Suite 104, San Antonio, TX 78238	(210) 509-3334	(210) 509-3335
2505 N. Falkenburg Rd., Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
6017 Financial Dr., Norcross, GA 30071	(770) 449-8800	(770) 449-5477





Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807		Project II	D: 2008-113		
Lab Batch #: 729470 Sample: 308	807-001 / SMP Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	
Lab Batch #: 729470 Sample: 308	807-001 S / MS Ba	tch: ¹ Matri	x: Soil		
Units: mg/kg	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	
Lab Batch #: 729470 Sample: 308	807-001 SD / MSD Ba	tch: 1 Matri	x: Soil	I	
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	
Lab Batch #: 729470 Sample: 308	807-002 / SMP Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	
Lab Batch #: 729470 Sample: 308	807-003 / SMP Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	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





Project Name: E K QUEEN 6" PEARCE

Vork Order #: 308807		Project II): 2008-113		
Lab Batch #: 729470 Sample: 308807-004 / SI	MP Bat	tch: 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	
Lab Batch #: 729470 Sample: 308807-005 / Si	MP Ba	tch: ¹ Matri	ix: Soil		
Units: mg/kg	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	
Lab Batch # 729470 Sample: 308807-006 / Sl	MP Bat	toh: 1 Matri	iv Soil	<u> </u>	
Units: mg/kg		RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	[ت م ا	[20]	[D]		1
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 / St	MP Bat	tch: 1 Matri	ix: Soil		
Units: mg/kg	SU	RROGATE RE	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	0.0327	0.0300	109	80-120	. <u></u>
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	
Lab Batch #: 729470 Sample: 308807-008 / Sl	MP Bat	tch: 1 Matri	ix: Soil	<u>.</u>	
Units: mg/kg	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0339	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





Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807		Project II	D: 2008-113		
Lab Batch #: 729470 Sample: 308807-009 /	SMP Bat	tch: 1 Matri	x: Soil		
Units: mg/kg	SU.	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	
Lab Batch #: 729470 Sample: 308807-010 /	SMP Bat	ch: 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	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	0.0295	0.0300	98	80-120	
Lab Batch #: 729470 Sample: 308807-014 /	SMP Bat	ch· 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0354	0.0300	118	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	
Lab Batch #: 729470 Sample: 308807-015 /	SMP Bat	ch: 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	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	0.0311	0.0300	104	80-120	
Lab Batch #: 729470 Sample: 308807-016 /	SMP Bat	tch: 1 Matri	x: Soil	1	
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0364	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





Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807		Project II): 2008-113		
Lab Batch #: 729470 Sample: 3088	07-017 / SMP Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0403	0.0300	134	80-120	**
4-Bromofluorobenzene	0.0582	0.0300	194	80-120	**
Lab Batch #: 729470 Sample: 3088	07-018 / SMP Ba	tch: 1 Matri	x: Soil	I	
Units: mg/kg	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	0.0344	0.0300	115	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	
Lab Batch #• 729470 Sample: 5129	94-1-BLK / BLK B a	tch· 1 Matri	x: Solid	I <u> </u>	
Units: mg/kg	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0337	0.0300	112	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	
Lab Batch #: 729470 Sample: 5129	94-1-BSD / BKS Ba	tch: 1 Matri	x: Solid		
Units: mg/kg	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	
Lab Batch #: 729725 Sample: 3088	07-019 / SMP Ba	tch: 1 Matri	x: Soil	· · · · ·	
Units: mg/kg	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0347	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





Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807			Project II): 2008-113		
Lab Batch #: 729725	ample: 308807-020 / SM	P Ba	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 80 Analytes)21B	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		0.0396	0.0300	132	80-120	**
Lab Batch #: 729725 S	ample: 308850-001 S / N	IS Ba	tch: ¹ Matri	x: Soil		
Units: mg/kg	-	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 80 Analytes)21B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene		0.0333	0.0300	111	80-120	
4-Bromofluorobenzene		0.0953	0.0300	318	80-120	**
Lab Batch #: 729725	ample: 308850-001 SD /	MSD Bat	tch• 1 Matri	v. Soil	1	
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY	
BTEX by EPA 80 Analytes	21B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0348	0.0300	116	80-120	
4-Bromofluorobenzene		0.0757	0.0300	252	80-120	**
Lab Batch #: 729725 S	ample: 513100-1-BKS /]	BKS Ba	tch: 1 Matri	x: Solid	· ·	
Units: mg/kg	-	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 80 Analytes)21B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0279	0.0300	93	80-120	
4-Bromofluorobenzene		0.0328	0.0300	109	80-120	
Lab Batch #: 729725 S	ample: 513100-1-BLK / 1	BLK Ba	tch: 1 Matri	x: Solid		
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 80 Analytes)21B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0342	0.0300	114	80-120	
4-Bromofluorobenzene		0.0299	0.0300	100	80-120	
			1		I	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B





Project Name: E K QUEEN 6" PEARCE

Vork Order #: 308807		Project I	D: 2008-113		
Lab Batch #: 729725 Sample: 513100-1-BS	D / BSD Ba	tch: 1 Matr	ix: Solid		
Units: mg/kg	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	
Lab Batch #: 729840 Sample: 308807-013 /	SMP Ba	tch: 1 Matr	ix: Soil		
Units: mg/kg	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	0.0351	0.0300	117	80-120	
4-Bromofluorobenzene	0.0375	0.0300	125	80-120	**
Lab Batch #. 729840 Sample: 308887-002 5	S/MS Ba	tch• 1 Matr	iv: Soil		
Units: mg/kg	SU SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	
Lab Batch #: 729840 Sample: 308887-002 S	SD / MSD Ba	tch: 1 Matr	ix: Soil		
Units: mg/kg	SU	BROCATE BI	ECOVERY	STUDY	
BTEX by EPA 8021B		KNOGATE K			
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes 1,4-Difluorobenzene	Amount Found [A] 0.0289	True Amount [B] 0.0300	Recovery %R [D] 96	Control Limits %R 80-120	Flags
Analytes 1,4-Difluorobenzene 4-Bromofluorobenzene	Amount Found [A] 0.0289 0.0331	True Amount [B] 0.0300 0.0300	Recovery %R [D] 96 110 10	Control Limits %R 80-120 80-120	Flags
Analytes 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 729840 Sample: 513177-1-BK	Amount Found [A] 0.0289 0.0331 S / BKS Bat	True Amount [B] 0.0300 0.0300 tch: 1	Recovery %R [D] 96 110 110	Control Limits %R 80-120 80-120	Flags
Analytes 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 729840 Sample: 513177-1-BK Units: mg/kg	Amount Found [A] 0.0289 0.0331 S/ BKS Bat SU	True Amount [B] 0.0300 0.0300 tch: 1 Matr RROGATE R	Recovery %R %R 96 110 ix: Solid ECOVERY \$	Control Limits %R 80-120 80-120 STUDY	Flags
Analytes 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 729840 Sample: 513177-1-BK Units: mg/kg BTEX by EPA 8021B Analytes	Amount Found [A] 0.0289 0.0331 S / BKS Bat SU Amount Found [A]	True Amount [B] 0.0300 0.0300 tch: 1 Matr RROGATE RI True Amount [B]	Recovery %R [D] 96 110 ix: Solid ECOVERY S Recovery %R [D]	Control Limits %R 80-120 80-120 STUDY Control Limits %R	Flags
Analytes 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 729840 Sample: 513177-1-BK Units: mg/kg BTEX by EPA 8021B Analytes 1,4-Difluorobenzene	Amount Found [A] 0.0289 0.0331 S / BKS Bai SU SU Amount Found [A] 0.0280	True Amount [B] 0.0300 0.0300 tch: 1 Matr RROGATE RI Amount [B] 0.0300	Recovery %R [D] 96 110 ix: Solid ECOVERY S Recovery %R [D] 93	Control Limits %R 80-120 80-120 STUDY Control Limits %R 80-120	Flags

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B





Project Name: E K QUEEN 6" PEARCE

Vork Order #: 308807		Project II	D: 2008-113		
Lab Batch #: 729840 Sample: 513	177-1-BLK / BLK Bat	tch: 1 Matri	x: Solid		
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0347	0.0300	116	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	
Lab Batch #: 729840 Sample: 513	177-1-BSD / BSD Bat	tch: ¹ Matri	x: Solid		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	
Lab Batch #: 729864 Sample: 308	807-011 / SMP Bat	tch: ¹ Matri	x: Soil	<u> </u>	
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	0.0442	0.0300	147	80-120	**
4-Bromofluorobenzene	0.0501	0.0300	167	80-120	**
Lab Batch # 729864 Sample: 308	807-012 / SMP Bat	tch· 1 Matri	iv. Soil	<u> </u>	
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0457	0.0300	152	80-120	**
4-Bromofluorobenzene	0.0784	0.0300	261	80-120	**
Lab Batch #: 729864 Sample: 308	887-004 S / MS Bat	tch: 1 Matri	x: Soil	<u> </u>	
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0322	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





Project Name: E K QUEEN 6" PEARCE

Vork Order #: 308807			Project II	D: 2008-113		
Lab Batch #: 729864	Sample: 308887-004 SD /	MSD Ba	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by E Analy	PA 8021B ytes	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		0.0314	0.0300	105	80-120	
Lab Batch #: 729864	Sample: 513197-1-BKS /]	BKS Ba	tch: ¹ Matri	x: Solid	<u>. </u>	
Units: mg/kg	_	SU	RROGATE RE	ECOVERY	STUDY	
BTEX by E	PA 8021B vtes	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		0.0307	0.0300	102	80-120	
L	Samula: 513197-1-BLK / '	RIK Bo	4.a.h. 1 Matri			
Units: mg/kg	Sample: Story, There,	SU	RROGATE RE	COVERY S	STUDY	
	D 4 00.01D	Amount	Тта		Control	
BIEA Dy E	PA 8021B	Found [A]	Amount [B]	Recovery %R [D]	Limits %R	Flags
1 4 Difluorohenzene	, les	0.0346	0.0300	115	<u>0 120</u>	
4-Bromofluorobenzene		0.0340	0.0300	96	80-120	
		0.0207		0.111	00120	
Lab Batch #: /29804	Sample: 513197-1-BSU	BSD Ra	tch: 1 Mauri	x: Solia	3/DE ID X/	
Umits: mg/kg		51	RROGATE KE	COVERY 3	STUDY	
BTEX by E	PA 8021B	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		0.0313	0.0300	104	80-120	
Lab Batch #: 729435	Sample: 308807-006 / SM	P Ba	tch: 1 Matri	x: Soil	<u> </u>	
Units: mg/kg	~	SU	RROGATE RE	ECOVERY S	STUDY	
TPH by SW Analy	'8015 Mod ytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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





Project Name: E K QUEEN 6" PEARCE

Vork Order #: 308807		Project II	D: 2008-113		
Lab Batch #: 729435 Sample: 308	807-006 S / MS Bat	tch: 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.9	100	100	70-135	
o-Terphenyl	51.7	50.0	103	70-135	
Lab Batch #• 729435 Sample: 308	807-018 / SMP Bat	ch· 1 Matri	ix: Soil	1	
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.2	100	96	70-135	
o-Terphenyl	57.0	50.0	114	70-135	
Lab Batch #. 729435 Sample: 308	807-019 / SMP Bat	ch· 1 Matri	iv• Soil	1	
Units: mg/kg	SU	RROGATE RE	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	08.0	100	00	70.135	
o-Terphenyl	53.7	50.0	107	70-135	
Lab Patch # 729/35 Sample: 308	807-020 / SMP Pot	ah. 1 Matri	w Soil		
Units: mg/kg		RROGATE RE	ECOVERY S	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	08.0	100	08	70.135	
o-Terphenyl	54.3	50.0	109	70-135	
Lab Patch # 729/35 Samuels 512	068-1-BKS/BKS D-4	toh. 1 Mot-	v Solid		
Units: mg/kg		RROGATE RE	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
Analytes 1-Chlorooctane	111	100	[D] 111	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B





Project Name: E K QUEEN 6" PEARCE

Vork Order #: 308807			Project II	D: 2008-113		
Lab Batch #: 729435Sample	: 512968-1-BLK / B	BLK Bat	tch: 1 Matri	x: Solid		
Units: mg/kg		SU	RROGATE RE	ECOVERY	STUDY	
TPH by SW8015 Mod Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		98.4	100	98	70-135	
o-Terphenyl		50.7	50.0	101	70-135	
Lab Batch #: 729435 Sample	: 512968-1-BSD / B	SD Bat	tch: ¹ Matri	x: Solid		
Units: mg/kg	Г	SU	RROGATE RE	ECOVERY S	STUDY	
TPH by SW8015 Mod Analytes	E	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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	S Bat	tch: 1 Matri	x: Soil		
Units: mg/kg	Г	SU	RROGATE RE	ECOVERY S	STUDY	
TPH by SW8015 Mod	L	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		94 7	100	95	70-135	
o-Terphenyl	I	49.6	50.0	99	70-135	
Lab Ratch #• 729462 Sample	• 308657-007 SD / N	MSD Bat	teh• 1 Matri	v Soil		
Units: mg/kg	· 500057-007 52 7 .	SU	RROGATE RE	COVERY S	STUDY	
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		92.1	100	92	70-135	
o-Terphenyl		48.5	50.0	97	70-135	
Lab Batch #• 729462 Sample	· 308807-001 / SMP) Bat	tch· 1 Matri	x: Soil		
Units: mg/kg	Г	SU	RROGATE RE	ECOVERY S	STUDY	
TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1-Chlorooctane Analytes		92.2	100	92	70-135	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B





Project Name: E K QUEEN 6" PEARCE

Control Limits %R	Flags
CUDY Control Limits %R	Flags
Control Limits %R	Flags
1	1 1185
70-135	
70-135	
UDY	
Control Limits %R	Flags
70-135	
70-135	
<u> </u>	
UDY	
Control Limits %R	Flags
70-135	
70-135	
UDY	
Control Limits %R	Flags
70.125	
/0-135	
70-135	
70-135	
70-135 70-135	
70-135 70-135 'UDY Control Limits %R	Flags
70-135 70-135 'UDY Control Limits %R 70-135	Flags **
	UDY Control Limits %R 70-135 70-135 YUDY Control Limits %R 70-135 YUDY Control Limits %R 70-135 YUDY Control Limits %R

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B





Project Name: E K QUEEN 6" PEARCE

Vork Order #: 308807			Project II	D: 2008-113		
Lab Batch #: 729462	Sample: 308807-008 / SMP	Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	Γ	SU	RROGATE RE	ECOVERY	STUDY	
TPH by SV	V8015 Mod lytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		87.8	100	88	70-135	
o-Terphenyl		45.1	50.0	90	70-135	
Lab Batch #: 729462	Sample: 308807-009 / SMP	Ba	tch: ¹ Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY	STUDY	
TPH by SV Ana	V8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		89.1	100	89	70-135	
o-Terphenyl		45.7	50.0	91	70-135	
Lab Batch #: 729462	Sample: 308807-010 / SMP	Ba	tch: ¹ Matri	x: Soil	•	
Units: mg/kg	ſ	SU	RROGATE RE	ECOVERY	STUDY	
TPH by SV	V8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		88.7	100	89	70-135	
o-Terphenyl		45.9	50.0	92	70-135	
Lab Batch #: 729462	Sample: 308807-011 / SMP	Bat	tch: 1 Matri	x: Soil	I	
Units: mg/kg	La contra	SU	RROGATE RE	ECOVERY	STUDY	
TPH by SV	V8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Alla 1-Chlorooctane	lytes	700	100	700	70.135	**
o-Terphenyl		667	50.0	1334	70-135	**
Lab Batch #• 729462		Ra	tch• 1 Matri	v Soil	1	
Units: mg/kg		SU	RROGATE RE	ECOVERY	STUDY	
TPH by SV	V8015 Mod lytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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





Project Name: E K QUEEN 6" PEARCE

Vork Order #: 308807			Project II): 2008-113		
Lab Batch #: 729462	Sample: 308807-013 / SMP	Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	Γ	SU	RROGATE RE	COVERY S	STUDY	
TPH by SW8015 Analytes	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		92.4	100	92	70-135	
o-Terphenyl		54.2	50.0	108	70-135	
Lab Batch #: 729462	Sample: 308807-014 / SMP	Ba	tch: ¹ Matri	x: Soil		
Units: mg/kg	ſ	SU	RROGATE RE	COVERY S	STUDY	
TPH by SW8015 Analytes	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		88.6	100	89	70-135	
o-Terphenyl		49.6	50.0	99	70-135	
Lab Batch #• 729462	Sample: 308807-015 / SMP	Ba	tch· 1 Matri	x: Soil	1	
Units: mg/kg			RROGATE RE	COVERY S	STUDY	
TPH by SW8015 Analytes	Mod	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 #: 729462	Sample: 308807-016 / SMP	Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	ſ	SU	RROGATE RE	COVERY S	STUDY	
TPH by SW8015 Analytes	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		91.8	100	92	70-135	
o-Terphenyl		50.3	50.0	101	70-135	
Lab Batch #: 729462	Sample: 308807-017 / SMP	Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	Г	SU	RROGATE RE	COVERY S	STUDY	
TPH by SW8015 Analytes	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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





Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807			Project II	D: 2008-113		
Lab Batch #: 729462 Sar	nple: 512991-1-BKS / B	KS Bat	tch: 1 Matri	x: Solid		
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY	
TPH by SW8015 M Analytes	lod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		113	100	113	70-135	
o-Terphenyl		56.3	50.0	113	70-135	
Lab Batch #: 729462 Sar	nple: 512991-1-BLK / E	BLK Bat	t ch: 1 Matri	x: Solid		
Units: mg/kg	Γ	SU	RROGATE RE	ECOVERY S	STUDY	
TPH by SW8015 M Analytes	lod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		102	100	102	70-135	
o-Terphenyl		52.2	50.0	104	70-135	
Lab Batch #: 729462 Sar	nple: 512991-1-BSD / B	SD Bat	tch: ¹ Matri	x: Solid		
Units: mg/kg	Γ	SU	RROGATE RE	ECOVERY S	STUDY	
TPH by SW8015 M Analytes	lod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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





Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807		Project ID:					
Lab Batch #: 729470	Sample: 51299	Sample: 512994-1-BSD					
Date Analyzed: 07/30/2008	Date Prepared: 07/30/	2008					
Reporting Units: mg/kg	Batch #: 1	BLANK /	BLANK /BLANK SPIKE RECOV				
BTEX by EPA 8021B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags	
Benzene	ND	0.0500	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*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807							Proj	ject ID: 2	2008-113					
Analyst: BRB	Da	ate Prepar	ed: 07/31/200)8			Date A	nalyzed: ()7/31/2008					
Lab Batch ID: 729725 Sample: 513100-1-	BKS Batch #: 1 Matrix: Solid													
Units: mg/kg		BLAN	K /BLANK S	SPIKE / B	BLANK S	PIKE DUPI	LICATE 1	RECOVE	ERY STUD	Y				
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Benzene	ND	0.0500	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	 Da	ate Prepar	ed: 08/01/200)8			Date A	nalyzed: ()8/02/2008					
Lab Batch ID: 729840 Sample: 513177-1-	BKS Batch #: 1 Matrix: Solid													
-			. –					BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY						
Units: ^{mg/kg}		BLAN	K /BLANK S	SPIKE / B	BLANK S	PIKE DUPI	LICATE I	RECOVI	ERY STUD	Y				
Units: ^{mg/kg} BTEX by EPA 8021B	Blank Sample Result [A]	BLAN Spike Added [B]	K /BLANK S Blank Spike Result [C]	SPIKE / F Blank Spike %R [D]	BLANK S Spike Added [E]	Blank Blank Spike Duplicate Result [F]	LICATE I Blk. Spk Dup. %R [G]	RECOVI RPD %	Control Limits %R	Control Limits %RPD	Flag			
Units: ^{mg/kg} BTEX by EPA 8021B Analytes Bergere	Blank Sample Result [A]	BLAN. Spike Added [B]	K /BLANK S Blank Spike Result [C]	SPIKE / F Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RECOVI RPD %	Control Limits %R	Control Limits %RPD	Flag			
Units: mg/kg BTEX by EPA 8021B Analytes Benzene Takana	Blank Sample Result [A] ND	BLAN Spike Added [B] 0.1000	K /BLANK S Blank Spike Result [C] 0.1149	SPIKE / E Blank Spike %R [D] 115	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G] 106	RECOVE RPD %	Control Limits %R 70-130	Control Limits %RPD 35	Flag			
Units: ^{mg/kg} BTEX by EPA 8021B Analytes Benzene Toluene Ethelbarene	Blank Sample Result [A] ND ND	BLAN. Spike Added [B] 0.1000 0.1000	K /BLANK Spike Result [C] 0.1149 0.1132	Blank Spike %R [D] 115 113	Spike Added [E] 0.1 0.1	Blank Spike Duplicate Result [F] 0.1060 0.1050	LICATE] Blk. Spk Dup. %R [G] 106 105	RECOVI	Control Limits %R 70-130 70-130	Control Limits %RPD 35 35	Flag			
Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene	Blank Sample Result [A] ND ND ND	BLAN Spike Added [B] 0.1000 0.1000 0.1000	K /BLANK Spike Result [C] 0.1149 0.1132 0.1230	Blank Spike %R [D] 115 113 123 123 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 <th 125<<="" td=""><td>Spike Added [E] 0.1 0.1</td><td>Blank Spike Duplicate Result [F] 0.1060 0.1050 0.1147</td><td>Blk. Spk Dup. %R [G] 106 105 115</td><td>RECOVE RPD % 8 8 7 7</td><td>ERY STUD Control Limits %R 70-130 70-130 71-129 70.425</td><td>Control Limits %RPD 35 35 35 35</td><td>Flag</td></th>	<td>Spike Added [E] 0.1 0.1</td> <td>Blank Spike Duplicate Result [F] 0.1060 0.1050 0.1147</td> <td>Blk. Spk Dup. %R [G] 106 105 115</td> <td>RECOVE RPD % 8 8 7 7</td> <td>ERY STUD Control Limits %R 70-130 70-130 71-129 70.425</td> <td>Control Limits %RPD 35 35 35 35</td> <td>Flag</td>	Spike Added [E] 0.1 0.1	Blank Spike Duplicate Result [F] 0.1060 0.1050 0.1147	Blk. Spk Dup. %R [G] 106 105 115	RECOVE RPD % 8 8 7 7	ERY STUD Control Limits %R 70-130 70-130 71-129 70.425	Control Limits %RPD 35 35 35 35	Flag		
Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene m,p-Xylenes	Blank Sample Result [A] ND ND ND ND	BLAN Spike Added [B] 0.1000 0.1000 0.1000 0.2000	K /BLANK Spike Result [C] 0.1149 0.1132 0.1230 0.2527	Blank Spike %R [D] 115 113 123 126 117	Spike Added [E] 0.1 0.1 0.1	PIKE DUPI Blank Spike Duplicate Result [F] 0.1060 0.1050 0.1147 0.2359	Blk. Spk Dup. %R [G] 106 105 115 118	RECOVE RPD % 8 8 7 7 7	Control Limits %R 70-130 70-130 71-129 70-135	Control Limits %RPD 35 35 35 35 35	Flag			

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




Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807	Project ID: 2008-113 Data Proposed: 08/02/2008												
Analyst: BRB	Da	ate Prepar	ed: 08/03/200	18			Date A	nalyzed: ()	18/03/2008				
Lab Batch ID: 729864 Sample: 513197-1-1	BKS	Batcl	h#: 1					Matrix: S	olid				
Units: mg/kg		BLAN	K/BLANK S	SPIKE / B	BLANK S	PIKE DUPI	LICATE	RECOVE	ERY STUD	Ŷ			
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Analytes		[B]	[C]	נטן	[E]	Kesuit [F]	[6]						
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	Da	ate Prepar	ed: 07/29/200	18			Date A	nalyzed: ()	7/30/2008				
Lab Batch ID: 729435 Sample: 512968-1-1	3KS	Batcl	h #: 1					Matrix: S	Solid				
Units: mg/kg		BLAN	K/BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	LICATE]	RECOVE	ERY STUD	ŶY			
TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag		
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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





Project Name: E K QUEEN 6'' PEARCE

Work Order #: 308807 Analyst: ASA Lab Batch ID: 729462 Sample:	E 512991-1-BKS	ate Prepar Batc	red: 07/29/200 h #: 1)8			Pro Date A	ject ID: 2 nalyzed: () Matrix: S	2008-113 07/29/2008 Solid		
Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY ST											
TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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			Pr	oject ID:	2008-113	
Date Analyzed: 07/30/2008	Date Prepared:	07/29/2008	3	Analyst:	ASA	
QC- Sample ID: 308807-006 S	Batch #:	1		Matrix:	Soil	
Reporting Units: mg/kg	MAT	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
TPH by SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes	[A]	[B]				
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*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries

Project Name: E K QUEEN 6" PEARCE



Work Order #: 308807						Project II	D: 2008-1	13			
Lab Batch ID: 729470 (Date Analyzed: 07/30/2008)C- Sample ID: Date Prepared:	308807- 07/30/20	-001 S 008	Ba An	tch #: alyst:	1 Matri BRB	x: Soil				
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	STUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	[]	0.1001	0.0264		[L]	0.0240	[0]		70.120	25	
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	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 07/31/2008	Date Prepared:	07/31/2	008	An	alyst:	BRB					
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	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 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: E K QUEEN 6" PEARCE



Work Order #: 308807						Project II	D: 2008-1	13			
Lab Batch ID: 729840 Date Analyzed: 08/02/2008	QC- Sample ID: Date Prepared:	308887 08/01/2	-002 S 008	Ba An	tch #: alyst:	1 Matri ASA	x: Soil				
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	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	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 08/04/2008	Date Prepared:	08/03/2	008	An	alyst:	BRB					
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	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 $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}(D-G)/(D+G)$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

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



Form 3 - MS / MSD Recoveries

Project Name: E K QUEEN 6" PEARCE



Work Order #: 308807	Project ID: 2008-113											
Lab Batch ID: 729462 Q	C- Sample ID:	308657-	007 S	Ba	tch #:	1 Matri	x: Soil					
Date Analyzed: 07/29/2008	Date Prepared:	07/29/20	008	An	alyst:	ASA						
Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH by SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag	
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD		
C6-C12 Gasoline Range Hydrocarbons	ND	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*(C-A)/B Relative Percent Difference RPD = 200*(D-G)/(D+G) Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

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





Project Name: E K QUEEN 6" PEARCE

Work Order #: 308807

Lab Batch #: 729500 Date Analyzed: 07/30/2008	Date Prepared: 07/3	Project 2 30/2008 Anal	ID: 2008-113 yst: IRO	3
QC- Sample ID: 308807-001 D	Batch #:	Mat	rix: Soil	
Reporting Units: %	SAMPLE	SAMPLE DUPLIC	CATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate RPD Result	Control Limits %RPD	Flag
Analyte		[B]		
Percent Moisture	7.47	6.59 13	20	

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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

	Project Manager:	ect Manager: Curt Stanley PAGE 02 OF 02													Pr	ojec	t Na	me:	ΕK	QL	JEE	N 6	;" P	'EA	RCI	<u>E</u>						
	Company Name	Basin Environmental Ser	vice Te	echnol	ogies, LLC											 +		Pr	ojec	:t#:	200	8-1	13									
	Company Address:	P. O. Box 301												- <u>-</u>		·	I	Proje	ect l	.oc:	Lea	Соц	nty,	NM	۱							
	City/State/Zip:	Lovington, NM 88260					•												P	D#:	PA/	<u> - c</u>	. J. I	Rey	nole	ds						
	Telephone No:	(505) 441-2244				Fax No:		(50	(5) 3	96-1	429)					Repor	t Fo	rmai	t:	X	Stan	daro	ł			TRR	P	[] NI	PDE	5
	Sampler Signature:	CHEN	<u> </u>	_		e-mail:		<u>cs</u>	tar	nley	@	bas	ine	nv.	co	<u>m</u>		_														-
(lab use c		~~																⊢			т	LP:	Ana	alyze	∍Fo T	ir:			Τ	—	- s	
	# 328807	7						,	Dr	00001	atio	008	Lof C	onte	ine	<i>rc</i>	Matrix		1		тот	AL:		1	_	X					8, 72	
th use only)	** 00000		ng Depth	Depth	ampied	ampied	ed.	Containers		eser			, or c			Pecify)	undwater S Sulda undwater S Soil/Soil Potable Specify Other	8.1 401545 8015E	(1005 TX 1006	2a, Mg, Na. K)	I, SO4, Alkalinity)	P/CEC	s Ag Ba Cd Cr Pb Hg Se		lies	21B/5030 or BTEX 8260					AT (Pre-Schedule) 24, 4	d TAT
LAB # (la	FIEI	D CODE	Beginning Ending Dr Date San Time San Time San HNO ₅ HNO ₅ HNO ₅ HO ⁵ Na ₅ S ₅ O ₅ None None										None	Other (S)	GW = Gro NP-Non-F	TPH: 41	TPH. TX	Calions (C	Anions (C	SAR / ESI	Metałs: A	Volatiles	Semivolat	BTEX 802	RCI RCI	N.O.R.M.			RUSH T	Standard		
11	SB	4@10'			7/25/2008	1235		1	х								SOIL X X							x								
12	SB	4 @ 20'			7/25/2008	1245		1	х								SOIL	x								x		·		\perp	⊥	X
13	\$B	-4 @ 30			7/25/2008	1255		1	x								SOIL	x								x		\perp		\perp	⊥	x
14	SB	4 @ 40'			7/25/2008	1305		1	x								SOIL	x					_		\downarrow	X	$ \rightarrow $	\perp			┶	x
15	SB	4 @ 50'			7/25/2008	1315		1	x								SOIL	X								x	\downarrow	\perp	\perp	\perp	┶	x
16	SB-	4 @ 60'			7/25/2008	1335		1	x								SOIL	x				_				x	$ \rightarrow$		_	\perp	┺	x
17	SB-	4 @ 70'			7/25/2008	1355		1	x								SOIL	X			_					x	\downarrow		\perp	\perp	┺	X
18	SB-	4 @ 80'			7/25/2008	1430		1	x				\square		\downarrow	\bot	SOIL	X					\perp	\downarrow	\downarrow	x	\rightarrow	\downarrow	\perp	<u> </u>	┺	×
19	SB	4 @ 90'			7/25/2008	1515		1	X								SOIL	X								x	_	\perp			┺	X
20	\$B-	4@100'			7/25/2008	1640		1	х								SOIL	X								x						X
Special In Relinquish Relinquish	Relinquished by:										Date Date	3 3	Tim.	e	Lab San VOC Lab Cus Cus San	orat nple Cs Fi els c tody tody nple by S	Con ree con sea sea Han ampl	Contained of He Is or Is or d De en/S	anne eads ner(a co a co elive lient	nts: ntac ipac s) ntail olen red Rej	:t? :e? ner(: (s) p. ?	s)	ſ	a control		Z Z Z Z Z Z	lar					
Relinquish	ned by:	Date	Tir	me		חד:		-							7	Pater Time 7 7 2 2 3 5 Temperature Upon Receipt: 407 0.5 °C																

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 O	F 02										- Pro	oject	Nam	e: <u>E</u>	ĸq	UE	EN 6	" Pi	EAR	CE				
	Company Name	Basin Environmental Ser	vice Te	echnol	ogies, LLC											_	Pre	oject	#: <u>2(</u>	08-	113								
	Company Address:	P. O. Box 301														_ P	roje	ect La	c: <u>L</u> e	a Co	unt	, NM							
	City/State/Zip:	Lovington, NM 88260														_		РО	#: <u>P/</u>	\A -	C. J.	Reyr	nold	s				. — —	
	Telephone No:	(505) 441-2244				Fax No:	(505	i) 39	6-14	29					Report	For	mat:	X	Sta	Indai	d	[] тғ	RP		П и	IPDE!	s
	Sampler Signature:	CAA	R	- 		e-mail:		cst	anl	ey(Qb	asi	ne	ņv.c	:om	-							-						٦
(lab use d	only)	<	\sum														_			TCLP:	Ar	nalyze	+ or		Τ	Π	<u> </u>	- Lu	
ORDER	un: 30880	1						r	Pres	serva	atior	1&∦	of C	ontai	ners	Matrix	58		T	OTAL:)e		1	<u>×</u> 3				48, 72	
AB # (lab use only)	FIE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO3	HCI	H ₂ SO ₄	NaCH	Na _z S ₂ O ₃ None	Other (Specify)	DW – Drinking water st – sludg GW = Groundwater S=Solifsol NP – Non-Potable Specify Oth	ТРН 418 1 (4015) 8015	TPH TX 1005 TX 1006	Cations (Ca, Mg, Na, K) Anions (CI, SO4, Alkalinity)	SAR / ESP / CEC	Metals' As Ag Ba Cd Cr Pb Hg S	Volatiles	Semivoladies	61 EX 0021000000 01 B1 EX 020 	N.O.R.M.			RUSH TAT (Pre-Schedule) 24,	Standard TAT
1	SB	-1 @ 10'			7/25/2008	855		1	x							SOIL	x					İ)	x _					X
2	SB	-1 @ 20'			7/25/2008	905		1	x							SOIL	X						<u> </u>	× _					<u> ×</u>
3	\$B	-1 @ 30			7/25/2008	915		1	x							SOIL	х							×L			<u> </u>	╇	<u> </u>
4	SB	-1 @ 40'			7/25/2008	925		1	x	_						SOIL	X				Ļ			×L			╞╼╋		<u> ×</u>
5	SB	-2 @ 10'			7/25/2008	955		1	x							SOIL	X			_	L			<u>×</u>			⊢∔	-	<u> x</u>
6	SB	-2 @ 20'			7/25/2008	1005		1	x							SOIL	X							<u>×</u>	<u> </u>		┝╼╇		X
7	SB	-2 @ 30'			7/25/2008	1015		1	x							SOIL	X						;	<u>×</u>		\square	┝╍╇╸	╇	<u> x</u>
8	SB	-3 @ 10'			7/25/2008	1125		1	x						<u> </u>	SOIL	X						;	<u>×</u>				╇	<u> x</u>
9	SB	-3 @ 20'			7/25/2008	1140		1	x				_		1	SOIL	X		_				;	<u>× </u>		$\downarrow \downarrow$	\vdash		<u> <u> </u> </u>
10	SB	-3 @ 30'		-	7/25/2008	1150		1	X							SOIL	Х							×				<u> </u>	X
Special I Relinquish Relinquish	hed by:	Date 7/24/54 Date Date		me 3 C me me	Received by: Received by: Received by:	भः 🔿										ate	Time		abor Samp /OCs Labels Custo Custo Samp by	le Co Free dy se dy se le Ha Cou	ntain of F contr als c als c gd C glect rier?	mme hers i leads ainer(: on cou on cou on cou on cou on cou on cou on cou on cou on cou on cou	nts: pace s) ntain oler(: red Rep)PS	er(s) s)) HL	f Fed	L TELEVERSE	N N N N N Sone S	Star
					May)									7	29	1/26 8	}; 3	30 1	ſemp	eratu	re U	pon F		pt:	4	0	10	<i>⊊</i> °¢	;

Variance/ Corrective Action Report- Sample Log-In

Client:	Basin Environmental
Date/ Time:	7129/08 8:30
Lab ID # :	308807
Initials:	<u>J</u> G

Sample Receipt Checklist

Client Initials °C #1 Temperature of container/ cooler? (Yes) No 0.5 Shipping container in good condition? Yes #2 No Custody Seals intact on shipping container/ cooler? Yes #3 No Not Present #4 Custody Seals intact on sample bottles/ container? Yes No Not Present #5 Chain of Custody present? Ye No Sample instructions complete of Chain of Custody? Yes #6 No Yes #7 Chain of Custody signed when relinquished/ received? No #8 Chain of Custody agrees with sample label(s)? (Yes) No ID written on Cont./ Lid #9 (Yes) Container label(s) legible and intact? No Not Applicable #10 Sample matrix/ properties agree with Chain of Custody? (Tes) No #11 Containers supplied by ELOT? (Yes) No #12 Samples in proper container/ bottle? (Yes) No See Below Yes #13 Samples properly preserved? No See Below #14 Sample bottles intact? Yes No #15 Preservations documented on Chain of Custody? (Yes) No Yes #16 Containers documented on Chain of Custody? No #17 Sufficient sample amount for indicated test(s)? Tes 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: 5	Date/ Time:
Regarding:			<u>.</u>
Corrective Action Taker	N.		
Check all that Apply:		See attached e-mail/ fax	
		Official states and the state of the states	

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

Page 1 of 17



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

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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 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 Lab Id: 315760-001 315760-002 315760-003 315760-004 315760-005 315760-006 Field Id: N-1 S/W E-1 S/W W-1 S/W E-2 S/W S-1 S/W N-2 S/W Analysis Requested Depth: Matrix: SOIL SOIL SOIL SOIL SOIL SOIL Sampled: 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 Oct-30-08 16:15 Oct-30-08 16:15 Oct-30-08 16:15 Oct-30-08 16:15 Extracted: BTEX by EPA 8021B Analyzed: Oct-30-08 21:51 Oct-30-08 22:13 Oct-30-08 22:35 Oct-30-08 22:57 Units/RL: mg/kg RL mg/kg RL mg/kg RL mg/kg RL ND ND 0.0051 ND 0.0052 ND 0.0052 0.0051 Benzene ND 0.0102 ND 0.0104 0.0101 Toluene ND 0.0104 ND ND 0.0051 ND 0.0052 ND 0.0052 ND 0.0051 Ethylbenzene ND 0.0102 ND 0.0104 ND 0.0101 m,p-Xylenes ND 0.0104 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 Extracted: **Percent Moisture** Analyzed: 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 RL RL RL RL Units/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 Extracted: 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 TPH By SW8015 Mod 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 Analyzed: 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 15.2 33.1 16.3 16.6 16.5 ND 15.6 ND 15.6 ND 15.2 771 C12-C28 Diesel Range Hydrocarbons ND 15.2 16.3 1160 16.5 21.8 15.6 ND 15.6 ND 15.2 C28-C35 Oil Range Hydrocarbons 15.2 16.3 ND ND ND 117 279 16.5 21.9 15.6 15.6 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.

Brent Barron

Odessa Laboratory Director



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

	Lab Id:	315760-0	07	315760-0	08		
Analysis Pognostad	Field Id:	S-2 S/W	V	W-2 S/V	V		
Analysis Kequesied	Depth:						
	Matrix:	SOIL		SOIL			
	Sampled:	Oct-23-08 1	6:34	Oct-23-08 1	6:38		
BTEX by EPA 8021B	Extracted:	Oct-30-08	16:15				
	Analyzed:	Oct-30-08 2	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:						
	Analyzed:	Oct-27-08	17:00	Oct-27-08 1	7:00		
	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 1	4:30		
j	Analyzed:	Oct-28-08 (09:53	Oct-28-08 1	0:18		
	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.

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(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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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, Suite 104, San Antonio, TX 78238	(210) 509-3334	(210) 509-3335
2505 N. Falkenburg Rd., Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
6017 Financial Dr., Norcross, GA 30071	(770) 449-8800	(770) 449-5477



Project Name: EK Queen Pearce 6"

	Project II	D: 2008-113									
IP Ba	tch: 1 Matri	x: Soil									
SU	RROGATE RI	ECOVERY S	STUDY								
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
0.0336	0.0336 0.0300 112 80-120										
0.0234	0.0300	78	80-120	**							
P Pag	toh. 1 Matri	v. Soil									
MP Batch: I Matrix: Soil SURROGATE RECOVERY STUDY											
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
0.0330	0.0300	110	80-120								
0.0250	0.0300	83	80-120								
IP Bat	tch· 1 Matri	x: Soil									
SU	RROGATE RI	ECOVERY S	STUDY								
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
0.0325	0.0300	108	80-120								
				**							
0.0212	0.0300	71	80-120								
0.0212 IP Ba i	0.0300 tch: 1 Matri	71 x: S oil	80-120								
0.0212 IP Bai SU	0.0300 tch: 1 Matri RROGATE RH	71 x: Soil ECOVERY S	80-120 STUDY								
0.0212 IP Ba SU Amount Found [A]	0.0300 tch: 1 Matri RROGATE RH True Amount [B]	71 x: Soil ECOVERY S Recovery %R [D]	80-120 STUDY Control Limits %R	Flags							
0.0212 P Bar SU Amount Found [A] 0.0332	0.0300 tch: 1 Matri RROGATE RH True Amount [B] 0.0300	71 x: Soil COVERY S Recovery %R [D] 111	80-120 STUDY Control Limits %R 80-120	Flags							
0.0212 P Bar SU Amount Found [A] 0.0332 0.0230	0.0300 tch: 1 Matri RROGATE RI Amount [B] 0.0300 0.0300	71 x: Soil ECOVERY S Recovery %R [D] 111 77	80-120 STUDY Control Limits %R 80-120 80-120	Flags **							
0.0212 IP Ba SU Amount Found [A] 0.0332 0.0230 IS Ba	0.0300 tch: 1 Matri RROGATE RH True Amount [B] 0.0300 0.0300 tch: 1 Matri	71 x: Soil COVERY S %R [D] 111 77 x: Soil	80-120 STUDY Control Limits %R 80-120 80-120	Flags							
0.0212 P Ba SU Amount Found [A] 0.0332 0.0230 As Ba SU	0.0300 tch: 1 Matri RROGATE RH True Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RH	71 x: Soil COVERY S %R [D] 111 77 x: Soil COVERY S	80-120 STUDY Control Limits %R 80-120 80-120 STUDY	Flags **							
0.0212 P Bai SU Amount Found [A] 0.0332 0.0230 IS Bai SU Amount Found [A]	0.0300 tch: 1 Matri RROGATE RF Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RF True Amount [B]	71 x: Soil COVERY S Recovery %R [D] 111 77 x: Soil COVERY S Recovery %R [D]	80-120 STUDY Control Limits %R 80-120 80-120 STUDY Control Limits %R	Flags ** Flags							
0.0212 P Ba SU Amount Found [A] 0.0332 0.0230 NS Ba SU Amount Found [A] 0.0312	0.0300 tch: 1 Matri RROGATE RH Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RH True Amount [B] 0.0300	71 x: Soil COVERY S Recovery %R [D] 111 77 x: Soil COVERY S Recovery %R [D] 104	80-120 STUDY Control Limits %R 80-120 80-120 STUDY Control Limits %R 80-120	Flags ** Flags							
	IP Bat SU Amount Found [A] 0.0336 0.0234 IP Bat SU Amount Found [A] 0.0330 0.0250 IP Bat SU Amount Found [A] 0.0330 0.0250	Project II IP Batch: 1 Matri SURROGATE RF Amount True Found Amount [A] [B] 0.0336 0.0300 0.0234 0.0300 IP Batch: 1 Matri SURROGATE RF Amount True Found Amount [A] [B] 0.0330 0.0300 0.0330 0.0300 0.0325 0.0300 IP Batch: 1 Matri [B] 0.0325 0.0300	Project ID: 2008-113 IP Batch: 1 Matrix: Soil SURROGATE RECOVERY Superstandard Recovery Superstandard Amount True Amount Recovery %R [D] 0.0336 0.0300 112 0.0336 0.0300 112 0.0234 0.0300 78 112 0.0234 0.0300 78 IP Batch: 1 Matrix: Soil SURROGATE Recovery %R [D] 0.0330 0.0300 110 0.0300 83 110 0.0325 0.0300 83 83 110 Matrix: Soil SURROGATE RECOVERY Superstand Recovery %R [D] 100 0.0325 0.0300 83 83 100 100 100 Output Image: Image: Recovery %R [D] 100 0.0325 0.0300 108 108 Recovery %R [D] Image: Mamount Image: Mamount </th <th>Project ID: 2008-113 IP Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY Amount Found [A] True (B] Recovery %R [D] Control Limits %R 0.0336 0.0300 112 80-120 0.0234 0.0300 78 80-120 IP Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY Amount Found [A] True [B] Recovery %R [D] Control Limits %R Matrix: Soil SURROGATE RECOVERY STUDY Amount Found (A) True Amount [B] Recovery %R [D] Control Limits %R 0.0330 0.0300 110 80-120 0.0250 0.0300 83 80-120 Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Matrix: Soil SURROGATE RECOVERY STUDY Control Limits %R Output True Amount [D] Recovery %R Control ID Matrix: Soil Sourd Output True</th>	Project ID: 2008-113 IP Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY Amount Found [A] True (B] Recovery %R [D] Control Limits %R 0.0336 0.0300 112 80-120 0.0234 0.0300 78 80-120 IP Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY Amount Found [A] True [B] Recovery %R [D] Control Limits %R Matrix: Soil SURROGATE RECOVERY STUDY Amount Found (A) True Amount [B] Recovery %R [D] Control Limits %R 0.0330 0.0300 110 80-120 0.0250 0.0300 83 80-120 Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Matrix: Soil SURROGATE RECOVERY STUDY Control Limits %R Output True Amount [D] Recovery %R Control ID Matrix: Soil Sourd Output True							

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

^{***} Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: EK Queen Pearce 6"

Work Orders : 315760,		Project II	D: 2008-113		
Lab Batch #: 738706 Sample: 31576	0-006 SD / MSD Ba	tch: 1 Matri	ix: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY	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	0.0342	0.0300	114	80-120	
Lab Batch #: 738706 Sample: 31576	0-007 / SMP Ba	tch: 1 Matri	ix: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERYS	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0210	0.0300	70	80-120	**
Lab Batch #: 738706 Sample: 51835	1-1-BKS/BKS Box	toh: 1 Matri	iv Solid		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-biomonuorobenzene	0.0296	0.0300	99	80-120	
Lab Batch #: 738706 Sample: 51835	1-1-BLK / BLK Ba	tch: 1 Matri	ix: Solid		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0213	0.0300	71	80-120	**
Lab Batch #: 738706 Sample: 51835	1-1-BSD / BSD Ba	tch: 1 Matri	ix: Solid		
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0277	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



Project Name: EK Queen Pearce 6"

Work Orders : 315760,		Project II): 2008-113										
Lab Batch #: 738479 Sample: 315	760-001 / SMP Bat	tch: 1 Matri	x: Soil										
Units: mg/kg	SU	RROGATE RH	COVERY S	STUDY									
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
Analytes	100	100	[2]	70.125									
1-Chlorooctane	54.2	<u> </u>											
	54.5	50.0	109	70-133									
Lab Batch #: 738479 Sample: 315	760-001 S / MS Bat	MS Batch: 1 Matrix: Soil											
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	120	100	120	70-135									
o-Terphenyl	59.5	50.0	119	70-135									
Lab Batch #: 738479 Sample: 315	760-001 SD / MSD Bat	tch: ¹ Matri	x: Soil										
Units: mg/kg	SU	RROGATE RE	COVERY S	STUDY									
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
1-Chlorooctane	122	100	122	70-135									
o-Terphenyl	60.9	50.0	122	70-135									
Lab Batch #: 738479 Sample: 315	760-002 / SMP Bat	tch: 1 Matri	x: Soil										
Units: mg/kg	SU	RROGATE RE	COVERY	STUDY									
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
Analytes	112	100	112	70.125									
o-Terphenyl	63.0	50.0	126	70-135									
	760.002 / SMD		Soil	, , , , , , , , , , , , , , , , , , , ,									
Lab Batch #: 738479 Sample: 515		DDOCATE DI	X: SOIL										
Units: mg/kg	50.	KKUGATE KI											
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
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



Project Name: EK Queen Pearce 6"

Vork Orders: 315760,			Project II	D: 2008-113		
Lab Batch #: 738479	Sample: 315760-004 / SM	P Ba	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW80	015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analyte	28			נען		
1-Chlorooctane		132	100	132	70-135	
o-Terphenyl		64.5	50.0	129	70-135	
Lab Batch #: 738479	Sample: 315760-005 / SM	P Ba	tch: ¹ Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY	STUDY	
TPH By SW8()15 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	-5	111	100	111	70.135	
o-Terphenyl		55.8	50.0	112	70-135	
	~	D -		G '1		
Lab Batch #: 738479	Sample: 315/60-006 / SM	P Ba	tch: 1 Matri	X: SOIL		
Units: mg/kg		50	KRUGATE KI			
TPH By SW8)15 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analyte	28			נען		
1-Chlorooctane		112	100	112	70-135	
o-Terphenyl		55.6	50.0	111	70-135	
Lab Batch #: 738479	Sample: 315760-007 / SM	P B a	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY	STUDY	
TPH By SW8 Analyte)15 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		107	100	107	70-135	
o-Terphenyl		54.7	50.0	109	70-135	
Lab Batch #: 738479	Sample: 315760-008 / SM	P Ra	tch: 1 Matri	x: Soil	1	
Units: mg/kg	~	SU	RROGATE RI	ECOVERY S	STUDY	
TPH By SW8 Analyte	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
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



Project Name: EK Queen Pearce 6"

Work Orders : 315760,	Project ID: 2008-113												
Lab Batch #: 738479 Sample: 518217-1-E	BKS / BKS Bat	tch: 1 Matri	x: Solid										
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY									
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
1-Chlorooctane	124	100	124	70-135									
o-Terphenyl	59.2	50.0	118	70-135									
Lab Batch #: 738479 Sample: 518217-1-E	BLK / BLK Bat	tch: 1 Matri	x: Solid	· · · ·									
Units: mg/kg	SU	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										
o-Terphenyl	58.8	50.0	118	70-135									
Lab Batch #: 738479 Sample: 518217-1-E	BSD / BSD Bat	tch: ¹ Matri	x: Solid	1 1									
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY									
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
1-Chlorooctane	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





Project Name: EK Queen Pearce 6"

Work Order #: 315760	Project ID: 2008-113											
Analyst: ASA	Da	ate Prepar	red: 10/30/200	8			Date A	nalyzed: 1	0/30/2008			
Lab Batch ID: 738706 Sample: 518351-1-	3KS	Bate	h#: 1					Matrix: S	Solid			
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Besult [E]	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes		[D]			[E]	Kesunt [F]	[6]					
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	1.023 102		70-135	35		
o-Xylene	ND	0.5000	0.5111	102	0.5	0.4732	95	8	71-133	35		
Analyst: ASA	Da	ate Prepar	ed: 10/27/200	8			Date A	nalyzed: 1	0/28/2008			
Lab Batch ID: 738479 Sample: 518217-1-1	3KS	Bate	h #: 1					Matrix: S	Solid			
Units: mg/kg		BLAN	K /BLANK S	SPIKE / B	BLANK S	PIKE DUPI	LICATE	RECOVI	ERY STUD	Y		
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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 II	D: 2008-1	13			
Lab Batch ID: 738706 Date Analyzed: 10/31/2008 Reporting Units: mg/kg	QC- Sample ID: Date Prepared:	315760 10/30/2	-006 S 008	Ba An	tch #: alyst:	1 Matrix ASA	x: Soil				
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	E / MAT Spiked Sample %R [D]	Spike Added [E]	KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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	Х
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 Date Analyzed: 10/28/2008	QC- Sample ID: Date Prepared:	315760 10/27/2	-001 S 008	Ba An	tch #: alyst:	1 Matri ASA	k: Soil				
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	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	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*(C-A)/BRelative 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 #: 315760

Lab Batch #: 738311			Project I	D: 2008-113	3
Date Analyzed: 10/27/2008 Date Pr	repared: 10/2	27/2008	Analy	st: BEV	
QC- Sample ID: 738311-1 D	Batch #: 1		Matr	ix: Soil	
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	7.28	7.28	NC	20	

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

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:	anager: Camille Bryant											_			_ F	Proje	ect N	ame	: E	K Q	uee	<u>n P</u>	ear	ce	6"						_
	Company Name	Basin Environmenta	al Service T	echnol	ogies, LLC	-										_	I	Proje	ect #	: <u>2(</u>	08-	113	1									
	Company Address:	P. O. Box 301														_	Pro	oject	Loc	:: <u>Le</u>	a Co	ount	y, N	м								_
	City/State/Zip:	Lovington, NM 8826	60									_						I	PO #	: <u>P</u> /	A -	D. B	Iryai	nt								
	Telephone No:	(575)605-7210 Fax No: (505) 396-1429 Report Format: X									X Standard TRRP				RP				ES													
	Sampler Signature:	C Bujar	<u>t</u>			e-mail:		cit	orya	ante	@b	asi	n-c	ons	ulti	ng.com	<u>1</u>															
(ish uce)	only)	······································															F		_			A: I	naïya T	ze F	or:			<u> </u>	- -	_		
	215	140																		T(DTAL:				X						72 hr	
ORDEF (lab use only)	₹#: <u>315 i</u> FIEL	.0 CODE	3eginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	otal #. of Containers	Pre	Ser.		H.SO.	NaOH Na CH	Nave	Other (Specify)	ow - DrinkIng Water SL ≟ Sludg GW = Groundwater 5 - Solitsoll PP 21	PH-NOR-POTABLE SPECIFY OTH	PH- TX 1005 TX 1006	Cations (Ca Mg, Na, K)	Mions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Aelais: As Ag Ba Cd Cr Pb Hg Se	/olatites	Semivolatites	31EX 80218/3030 or BTEX 8260	gci	4.0 R M				RUSH IAT (Pre-Schedule) 24, 48.	
	N-	1 S/W		<u> </u>	23-Oct-08	1600	ш	1	x	_						SOU	<u> </u>	× –	. 0	4	0	2		S	-	Ľ,	ŕ	\vdash		Ť	X	J
07.	E-'	1 S/W			23-Oct-08	1604		1	x		+	+	-		┢	sou	Ŧ,	x	+-	┢	\vdash	<u> </u>		\neg			\square	H	- †	╉		đ
03		1 S/W			23-Oct-08	1611		1	x		1	╈		+	╉─	sou	1,	Ť		┢	<u> </u>					\vdash				-		ć
04	E-	2 S/W			23-Oct-08	1620		1	x			+	+	+	┢	SOIL	Ť,	<u>,</u>	\uparrow	+			\square					\square	-		Tx	2
66	S-1	1 S/W			23-Oct-08	1625		1	X		\uparrow	╈	+		\uparrow	SOIL	1,	Ċ	Τ	┢	1	\square			Π			\square		T		ส
où	N-3	2 S/W			23-Oct-08	1630		1	x		\top					SOIL	٦,	(1	T					Π	\square	\square			T	X	$\langle $
07	S-:	2 S/W			23-Oct-08	1634		1	х							SOIL)	(_		\square	\Box				×	(
03	W-	2 S/W			23-Oct-08	1638		1	х							SOIL)]								\Box			X	(
																								i								
Speciat I Please ru Relinquist Relinquist	nstructions: un BTEX 8021B on all s ded by: tight hed by: hed by:	amples below 100 pp Date		пе 27 пе 27	Received by Received by Received by		~		2	 }				10			ті /У Тіг	me 77 ne	La Sa VC La Cu Sa	bora mpk DCs I bels istod istod imple	atory a Co Free on c ly se b Ha Sam Cour Cour	Contain of H contails of als of als of als of pler/f ier?	mme hers lead ainer on co on co Delive Citer	ents Inta Spa (s) onta oolei erec it Re UP(ict? ice? iner r(s) d sp. ? S	(s) DHL	L	((((Fed)	DOG MARY XXX	N N N N N	l l l Star	
	2				12at	20	1		7					ic	24	1/08	17	25	⊤e	mpe	ratur	έU	pon	Rec	eipt	:			2	l °	с	

Variance/ Corrective Action Report- Sample Log-In

Client:	Plains Basin Enu.
Date/ Time:	10 14 08 17:27
Lab ID # :	315740
Initials:	

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	l Yes	No		
#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?	(es)	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	Sce Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Ves	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?	Ves	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 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. 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 322297



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



Project Id: 2008-113 **Contact:** Daniel Bryant ... T C N TN / Project L

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

Project Name: EK Queen Pearce 6"



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

roject Location: Lea County NM								Report	Date:	15-JAN-09			
ojee Locaton. Lea County, 1011								Project Mai	nager:	Brent Barron,	II		
	Lab Id:	322297-0	001	322297-0	322297-002		003	322297-0	04	322297-0	005	322297-0	006
A malua in Democrate I	Field Id:	MW-1 10'		MW-1 3	0'	MW-1	50'	MW-1 7	0'	MW-1 90'		MW-1 110'	
Analysis Requestea	Depth:												
	Matrix:	SOIL		SOIL		SOIL	,	SOIL		SOIL		SOIL	
	Sampled:	Jan-06-09	10:00	Jan-06-09 1	0:10	Jan-06-09	10:30	Jan-06-09 1	0:55	Jan-06-09 11:20		Jan-06-09 11:50	
BTEX by EPA 8021B	Extracted:	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	
DILA by LIA 0021D	Analyzed:	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	
	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	0.0010	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	Extracted:												
	Analyzed:	Jan-13-09	17:00	Jan-13-09 17:00		Jan-13-09 17:00		Jan-13-09 1	7:00	Jan-13-09	17:00	Jan-13-09 17:00	
	Units/RL:	%	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	Extracted:	Jan-13-09	13:30	Jan-13-09 1	3:30	Jan-13-09	13:30	Jan-13-09 1	3:30	Jan-13-09	13:30	Jan-13-09	13:30
	Analyzed:	Jan-13-09 2	21:50	Jan-13-09 2	22:15	Jan-13-09	22:40	Jan-13-09 2	3:05	Jan-13-09	23:30	Jan-13-09	23:55
	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	15.6	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 Name: EK Queen Pearce 6"



Date Received in Lab: Tue Jan-13-09 10:36 am Report Date: 15-JAN-09

Toject Docation. Lea County, TWI								Project Mai	nager:	Brent Barron,	Π			
	Lab Id:	322297-0	322297-007		322297-008		322297-009		322297-010		322297-011		322297-012	
Anglusis Deguested	Field Id:	MW-1 12	MW-1 127'		MW-2 10'		MW-2 30'		MW-2 50'		MW-2 70'		5'	
Analysis Kequesiea	Depth:													
	Matrix:	SOIL	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-06-09 1	Jan-06-09 12:35		1:00	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	Jan-13-09 13:30		Jan-14-09 14:30		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		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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Brent Barron

Odessa Laboratory Director



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

Project Name: EK Queen Pearce 6"



Date Received in Lab: Tue Jan-13-09 10:36 am Report Date: 15-JAN-09

roject Location: Lea County, NM								-						
								Project Ma	nager:	Brent Barron,	Π			
	Lab Id:	322297-0	007	322297-	008	322297-	009	322297-0	010	322297-0	011	322297-0	012	
An alusia Deau estad	Field Id:	MW-1 12	27'	MW-2	10'	MW-2 30'		MW-2 50'		MW-2 70'		MW-2 95'		
Analysis Kequestea	Depth:													
	Matrix:	SOIL		SOIL	_	SOIL		SOIL		SOIL		SOIL		
	Sampled:	Jan-06-09 1	2:35	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	Extracted:	Jan-13-09	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	
	Analyzed:	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		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Benzene		ND	0.0011	ND	0.0010	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	Extracted:													
	Analyzed:	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		
	Units/RL:	%	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



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

Project Name: EK Queen Pearce 6"



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

Report Date: 15-JAN-09

								Project Ma	nager:	Brent Barron	, II		
	Lab Id:	322297-0	013	322297-0	014	322297-	015	322297-(016	322297-	017	322297-	018
Amalusia Dogwootod	Field Id:	MW-2 1	MW-2 110'		20'	MW-3	10'	MW-3 35'		MW-3 50'		MW-3 70'	
Analysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL	,	SOIL		SOIL	
	Sampled:	Jan-07-09 1	2:40	Jan-07-09 1	3:15	Jan-08-09	09:30	Jan-08-09	09:40	Jan-08-09 09:55		Jan-08-09 10:15	
BTEX by EPA 8021B	Extracted:	Jan-13-09	13:15	Jan-13-09 1	3:15	Jan-13-09	13:15	Jan-13-09	13:15	Jan-13-09	13:15	Jan-13-09 13:15	
	Analyzed:	Jan-14-09 ()9:36	Jan-14-09 (9:57	Jan-14-09 10:39		Jan-14-09	11:00	Jan-14-09	11:21	Jan-14-09 11:43	
	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	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	Extracted:												
	Analyzed:	Jan-13-09	17:00	Jan-13-09 17:00									
	Units/RL:	%	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	Extracted:	Jan-14-09 1	14:30	Jan-14-09 1	4:30	Jan-14-09	14:30	Jan-14-09	14:30	Jan-14-09	14:30	Jan-14-09	14:30
	Analyzed:	Jan-14-09	18:17	Jan-14-09 1	9:03	Jan-14-09	19:27	Jan-14-09	19:50	Jan-14-09	20:13	Jan-14-09	20:37
	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	15.6	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



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

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 Lab Id: 322297-019 322297-020 322297-021 322297-022 322297-023 322297-024 Field Id: MW-3 90' MW-3 110' MW-3 113 SB-5 10' SB-5 20' SB-5 30' Analysis Requested Depth: Matrix: SOIL SOIL SOIL SOIL SOIL SOIL Sampled: 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 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 Extracted: BTEX by EPA 8021B Analyzed: 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 Units/RL: mg/kg RL mg/kg RL mg/kg RL mg/kg RL mg/kg RL mg/kg RL ND 0.0010 ND 0.0010 ND 0.0010 ND 0.0011 ND 0.0010 ND 0.0011 Benzene ND 0.0021 0.0021 Toluene ND 0.0021 ND 0.0021 ND 0.0021 ND 0.0022 ND ND 0.0010 ND 0.0010 ND 0.0010 ND 0.0011 ND 0.0010 ND 0.0011 Ethylbenzene ND 0.0021 ND 0.0021 ND 0.0021 m,p-Xylenes ND 0.0021 ND 0.0022 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 ND 0.0010 ND 0.0010 ND 0.0011 0.0011 Extracted: **Percent Moisture** Analyzed: 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 RL RL RL RL Units/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 Extracted: 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 TPH By SW8015 Mod Jan-14-09 21:46 Jan-14-09 22:33 Jan-14-09 21:23 Jan-14-09 22:10 Jan-15-09 02:47 Analyzed: Jan-14-09 21:00 Units/RL: mg/kg RL mg/kg RL mg/kg RL mg/kg RL mg/kg RL mg/kg RL C6-C12 Gasoline Range Hydrocarbons ND 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 15.7 15.5 ND ND ND ND 15.6 ND 16.6 ND 15.7 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



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

	Lab Id:	322297-0)25	322297-0	26	322297-0	027		
Analysis Pognostad	Field Id:	SB-5 40	0'	SB-5 50)'	SB-5 6	0'		
Analysis Kequestea	Depth:								
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Jan-09-09	10:45	Jan-09-09 1	1:00	Jan-09-09	11:20		
BTEX by EPA 8021B	Extracted:	Jan-13-09	13:00	Jan-13-09 1	3:00	Jan-13-09	13:00		
	Analyzed:	Jan-13-09 2	23:32	Jan-13-09 2	3:53	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 1	5:00	Jan-14-09	15:00		
<i></i>	Analyzed:	Jan-15-09 (03:10	Jan-15-09 0	3:33	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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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116
	Phone (281) 240-4200 (214) 902 0300 (210) 509-3334 (813) 620-2000 (305) 823-8500 (432) 563-1800 (361) 884-0371


Project Name: EK Queen Pearce 6"

Work Orders: 322297,			Project II): 2008-113		
Lab Batch #: 746367	Sample: 322296-001 S / M	IS Ba	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by D	EPA 8021B lvtes	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		0.0310	0.0300	103	80-120	
	g 1 20006 001 SD /	MCD D		Seil		
Lab Batch #: /4030/	Sample: 322296-001 SD7	MSD Bat	tch: 1 Matri	x: Soll		
Units: mg/kg		50	RRUGATE RE			
BTEX by D	EPA 8021B lytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	<u> </u>	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene		0.0309	0.0300	103	80-120	
Lab Batch #: 746367	Sample: 322297-021 / SM	P Ba	tch: ¹ Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by Ana	EPA 8021B lvtes	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		0.0315	0.0300	105	80-120	
Lab Batch #: 746367	Sample: 322297-022 / SM	P Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	L	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by D	EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Alla 1 4-Difluorobenzene	lytts	0.0309	0.0300	103	80.120	
4-Bromofluorobenzene		0.0336	0.0300	112	80-120	
L - L D - 4 - L # 746267	Samely, 20007-002 / SM					
Lab Balch #: 740307	Sample: 522297-0257 SM			X: SOIL	STUDV	
		30	KRUGATE RE			
BTEX by D	EPA 8021B lvtes	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		0.0324	0.0300	108	80-120	
		1				

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: EK Queen Pearce 6"

Vork Orders: 322297,			Project II): 2008-113		
Lab Batch #: 746367	Sample: 322297-024 / SM	P Ba	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE R	COVERY S	STUDY	
BTEX by EPA	A 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Allalyu				105		
1,4-Difluorobenzene		0.0316	0.0300	105	80-120	
4-Bromonuorobenzene		0.0323	0.0500	108	80-120	
Lab Batch #: 746367	Sample: 322297-025 / SMI	P Ba	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY	
BTEX by EPA Analyte	A 8021B es	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		0.0325	0.0300	108	80-120	
Lab Batch #: 746367	Sample: 322297-026 / SM	P Ba	tch: ¹ Matri	x: Soil	<u>ı </u>	
Units: mg/kg]	SURROGATE RECOVERY STUDY				
BTEX by EPA	BTEX by EPA 8021B Amount Found [A]		True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4 Diffuorohonzana		0.0212	0.0200	104	90.120	
1,4-Dilluorobenzene		0.0315	0.0300	104	80-120	
		0.0310	0.0500		00-120	
Lab Batch #: 746367	Sample: 322297-027 / SMI	P Ba	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY	
BIEX by EPA Analyte	A 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
BIEX by EPA Analyte	A 8021B 25	Amount Found [A] 0.0312	True Amount [B] 0.0300	Recovery % R [D] 104	Control Limits %R 80-120	Flags
Analyte 4-Bromofluorobenzene	A 8021B 25	Amount Found [A] 0.0312 0.0322	True Amount [B] 0.0300 0.0300	Recovery % R [D] 104 107	Control Limits %R 80-120 80-120	Flags
Analyte 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 746367	A 8021B es Sample: 522852-1-BKS / H	Amount Found [A] 0.0312 0.0322 3KS Ba	True Amount [B] 0.0300 0.0300 tch: 1 Matri	Recovery % R [D] 104 107 x: Solid	Control Limits %R 80-120 80-120	Flags
BIEX by EP2 Analyte 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 746367 Units: mg/kg	A 8021B es Sample: 522852-1-BKS / H	Amount Found [A] 0.0312 0.0322 3KS Ba SU	True Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RH	Recovery %R [D] 104 107 x: Solid COVERY S S	Control Limits %R 80-120 80-120 STUDY	Flags
Analyte Analyte 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 746367 Units: mg/kg BTEX by EPA Analyte	A 8021B es Sample: 522852-1-BKS / F 4 8021B	Amount Found [A] 0.0312 0.0322 3KS Ba SU Amount Found [A]	True Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RH True Amount [B]	Recovery %R [D] 104 107 x: Solid ECOVERY S Recovery %R [D]	Control Limits %R 80-120 80-120 STUDY Control Limits %R	Flags
Analyte 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 746367 Units: mg/kg BTEX by EPA Analyte 1 4-Difluorobenzene	A 8021B es Sample: 522852-1-BKS / F A 8021B es	Amount Found [A] 0.0312 0.0322 3KS Ba SU SU Amount Found [A] 0.0292	True Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RH True Amount [B] 0.0300	Recovery %R [D] 104 107 x: Solid COVERY S Recovery %R [D] 97	Control Limits %R 80-120 80-120 STUDY Control Limits %R 80-120	Flags

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: EK Queen Pearce 6"

	Project II): 2008-113		
BLK Ba	tch: 1 Matri	x: Solid		
SU	RROGATE RE	COVERY S	STUDY	
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
0.0315	0.0300	105	80-120	
0.0313	0.0300	110	80-120	
BSD Bai	tch· 1 Matri	x• Solid		
SU SU	RROGATE RE	COVERY S	STUDY	
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
0.0293	0.0300	98	80-120	
0.0295	0.0300	98	80-120	
IP Ba	tch: ¹ Matri	x: Soil	· ·	
SU	RROGATE RE	COVERY	STUDY	
AmountTrueControlFoundAmountRecoveryLimits[A][B]%R%R[D][D][D]		Control Limits %R	Flags	
0.0308	0.0300	103	80-120	
0.0308	0.0300	103	80-120	
			· ·	
IP Bat	tch: 1 Matri	x: Soil		
IP Bai	tch: ¹ Matri RROGATE RF	x: Soil COVERY S	STUDY	
IP Ba SU Amount Found [A]	tch: 1 Matri RROGATE RE True Amount [B]	x: Soil COVERY S Recovery %R [D]	STUDY Control Limits %R	Flags
IP Bai SU Amount Found [A] 0.0308	tch: 1 Matri RROGATE RE True Amount [B] 0.0300	x: Soil COVERY S Recovery %R [D] 103	Control Limits %R 80-120	Flags
IP Bai SU Amount Found [A] 0.0308 0.0311	tch: 1 Matri RROGATE RE True Amount [B] 0.0300 0.0300	x: Soil COVERY S Recovery %R [D] 103 104	Control Limits %R 80-120 80-120	Flags
IP Bai SU Amount Found [A] 0.0308 0.0311 IP Bai	tch: 1 Matri RROGATE RE Amount [B] 0.0300 0.0300 tch: 1 Matri	x: Soil COVERY S Recovery %R [D] 103 104 x: Soil	STUDY Control Limits %R 80-120 80-120	Flags
IP Bai	tch: 1 Matri RROGATE RE Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RE	x: Soil COVERY S Recovery %R [D] 103 104 x: Soil COVERY S	STUDY Control Limits %R 80-120 80-120 STUDY	Flags
IP Bai SU Amount Found [A] 0.0308 0.0311 IP Bai SU Amount Found [A]	tch: 1 Matri RROGATE RF Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RF True Amount [B]	x: Soil COVERY S Recovery %R [D] 103 104 x: Soil COVERY S Recovery %R [D]	STUDY Control Limits %R 80-120 80-120 80-120 STUDY Control Limits %R	Flags
IP Bai SU Amount Found [A] 0.0308 0.0311 IP Bai SU Amount Found [A] 0.0307	tch: 1 Matri RROGATE RF Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RF True Amount [B] 0.0300	x: Soil COVERY S %R [D] 103 104 x: Soil COVERY S Recovery %R [D] 102	STUDY Control Limits %R 80-120 80-120 STUDY Control Limits %R 80-120	Flags Flags
	BLK Bai SU Amount Found [A] 0.0315 0.0331 BSD Bai SU Amount Found [A] 0.0293 0.0295 IP Bai SU Amount Found [A] 0.0308	Project II BLK Batch: 1 Matri SURROGATE RE Amount [A] True Amount [A] [B] 0.0315 0.0300 0.0331 0.0300 BSD Batch: 1 Matri SURROGATE RE Amount [A] [B] 0.0293 0.0300 0.0295 0.0300 0.0295 0.0300 1P Batch: 1 Matri SURROGATE RE Amount [A] [B] 0.0308 0.0300	Project ID: 2008-113BLKBatch:1Matrix:SolidSURROGATE RECOVERY SAmount [A]True (B]Recovery %R [D]0.03150.03001050.03310.0300110BSDBatch:1Matrix:SolidSURROGATE RECOVERY SAmount [A]True %R [D]0.02930.0300980.02950.030098OutputTrue %R [D]0.02950.030098IPBatch:1Matrix:SoilSURROGATE RECOVERY SAmount Found [A]True %R [D]Recovery %R [D]0.03080.03001030.03080.03001030.03080.0300103	Project ID: 2008-113BLKBatch:1Matrix: SolidSURROGATE RECOVERY STUDYAmountTrue Amount [A]Recovery %R [D]Control Limits %R0.03150.030010580-1200.03110.030011080-120BSDBatch:1Matrix: SolidSURROGATE RECOVERY STUDYAmount Found [A]True [B]Recovery %R [D]Control Limits %RMatrix:SolidSURROGATE RECOVERY STUDYAmount Found (A]True (B]Recovery %R [D]Control Limits %RMatrix:SoilSURROGATE RECOVERY STUDYAmount Found (A]True (B]Recovery %R (D]Control Limits %RMatrix:SoilSURROGATE RECOVERY STUDYAmount Found [A]True (B]Recovery %R %RControl Limits %RMatch:1Matrix:SoilSurrogate0.030010380-1200.03080.030010380-120

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: EK Queen Pearce 6"

Work Orders: 322297,		Project II	D: 2008-113			
Lab Batch #: 746371 Sample: 322297-00	4 / SMP Bat	tch: 1 Matri	x: Soil			
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY		
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			נען			
1,4-Difluorobenzene	0.0307	0.0300	102	80-120		
4-Bromofluorobenzene	0.0306	0.0300	102	80-120		
Lab Batch #: 746371 Sample: 322297-00.	5 / SMP Bat	tch: ¹ Matri	x: Soil			
Units: mg/kg	SU	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	0.0309	0.0300	103	80-120		
Lab Batch #: 746371 Sample: 322297-00	6 / SMP Bat	tch: ¹ Matri	x: Soil	1 1		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY		
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1.4-Difluorobenzene	0.0305	0.0300	102	80-120		
4-Bromofluorobenzene	0.0310	0.0300	103	80-120		
Lab Batch #: 746371 Sample: 322297-00	7 / SMP Bat	tch: 1 Matri	ix: Soil	1		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY		
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes	0.0207	0.0200	102	80.120		
4-Bromofluorobenzene	0.0306	0.0300	102	80-120		
	0.0500	0.0500	102	80-120		
Lab Batch #: 746371 Sample: 322297-00	8 / SMP Bat	tch: 1 Matri	x: Soil			
Lab Batch #: 746371 Sample: 322297-00 Units: mg/kg	8 / SMP Bat	tch: 1 Matri RROGATE RI	ix: Soil ECOVERY S	STUDY		
Lab Batch #: 746371 Sample: 322297-00 Units: mg/kg BTEX by EPA 8021B Analytes	8 / SMP Bat SU Amount Found [A]	tch: 1 Matri RROGATE RI True Amount [B]	x: Soil ECOVERY S Recovery %R [D]	STUDY Control Limits %R	Flags	
Lab Batch #: 746371 Sample: 322297-00 Units: mg/kg BTEX by EPA 8021B Analytes	8 / SMP Bat SU Amount Found [A] 0.0305	tch: 1 Matri RROGATE RI True Amount [B] 0.0300	x: Soil ECOVERY S Recovery %R [D] 102	Control Limits %R 80-120	Flags	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: EK Queen Pearce 6"

Work Orders : 322297,			Project II	D: 2008-113		
Lab Batch #: 746371	Sample: 322297-009 / SMI	P Bat	tch: 1 Matri	x: Soil		
Units: mg/kg]	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 80	021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4 Difluorohenzene		0.0205	0.0300	102	80.120	
4-Bromofluorobenzene		0.0306	0.0300	102	80-120	
		0.0500	0.0000	0.11	00 120	
Lab Batch #: 740371	Sample: 322297-0107 SMI	r Bat	ch: 1 Matri	X: SOIL	STUDY	
		30.	T			
BTEX by EPA 8 Analytes	021B	Amount Found [A]	Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 / SM	P Bat	tch: 1 Matri	x: Soil		
Units: mg/kg]	SU	RROGATE RE	COVERY	STUDY	
BTEX by EPA 8 Analytes	021B	AmountTrueControlFoundAmountRecoveryLimits[A][B]%R%R[D]%R%R		Control Limits %R	Flags	
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 / SMI	P Bat	ch: 1 Matri	x: Soil		
Units: mg/kg]	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8 Analytes	021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	A	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene		0.0312	0.0300	104	80-120	
Lab Batch #: 746371	Sample: 322297-013 / SM	P Bat	ch: 1 Matri	x: Soil		
Units: mg/kg]	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8 Analytes	021B	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		0.0307	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



Project Name: EK Queen Pearce 6"

Work Orders: 322297,			Project II	D: 2008-113		
Lab Batch #: 746371	Sample: 322297-014 / SM	IP Ba	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by	EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Alla	ily ics	0.0206	0.0200	102	80.120	
4-Bromofluorobenzene		0.0316	0.0300	102	80-120	
	~	0.0010	0.0300	0.11	00 120	
Lab Batch #: 746371	Sample: 322297-015 / SM	P Ba	tch: 1 Matri	x: Soil		
Units: mg/kg		50				
BTEX by Ana	EPA 8021B lytes	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		0.0318	0.0300	106	80-120	
Lab Batch #: 746371	Sample: 322297-015 S / M	AS Ba	tch: ¹ Matri	x: Soil	· · ·	
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by	EPA 8021B llvtes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene		0.0312	0.0300	104	80-120	
Lab Batch #: 746371	Sample: 322297-015 SD /	MSD Ba	tch: 1 Matri	x: Soil	1 1	
Units: mg/kg	ľ	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by	EPA 8021B llvtes	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	
Lab Batch #: 746371	Sample: 322297-016 / SM	IP Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	ľ	SU	RROGATE RE	ECOVERYS	STUDY	
BTEX by	EPA 8021B llytes	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		0.0323	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



Project Name: EK Queen Pearce 6"

Vork Orders: 322297,			Project I	D: 2008-113		
Lab Batch #: 746371	Sample: 322297-017 / SM	P B a	tch: 1 Matr	ix: Soil		
Units: mg/kg		SU	IRROGATE R	ECOVERYS	STUDY	
BTEX by E	PA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	les	0.0206	0.0200	102	00.120	
4-Bromofluorobenzene		0.0306	0.0300	102	80-120	
		0.0322	0.0500	107	00 120	
Lab Batch #: 746371	Sample: 322297-018 / SM	P Ba	tch: 1 Matr	ix: Soil		
Units: mg/kg		st	RROGATE R	ECOVERY	STUDY	
BTEX by E Analy	PA 8021B /tes	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		0.0326	0.0300	109	80-120	
Lab Batch #: 746371	Sample: 322297-019 / SM	P Ba	tch: ¹ Matr	ix: Soil		
Units: mg/kg	r r	SU	JRROGATE R	ECOVERY	STUDY	
BTEX by E	PA 8021B	Amount True Control Found Amount Recovery Limits [A] [B] %R %R			Flags	
Allaly	les	0.0207	0.0200	102	00.120	
1,4-Diffuorobenzene		0.0307	0.0300	102	80-120	
		0.0328	0.0300	109	80-120	
Lab Batch #: 746371	Sample: 322297-020 / SM	P Ba	tch: 1 Matr	ix: Soil		
Units: mg/kg		st	RROGATE R	ECOVERY	STUDY	
BTEX by E Analy	PA 8021B /tes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0308	0.0300	103	80-120	
4-Bromofluorobenzene		0.0329	0.0300	110	80-120	
Lab Batch #: 746371	Sample: 522855-1-BKS / 1	BKS Ba	tch: 1 Matr	ix: Solid	· · · ·	
Units: mg/kg	-	SU	RROGATE R	ECOVERY	STUDY	
BTEX by E	PA 8021B /tes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0277	0.0300	92	80-120	
1						

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: EK Queen Pearce 6"

Vork Orders: 322297,			Project II): 2008-113		
Lab Batch #: 746371 San	nple: 522855-1-BLK / 1	BLK Ba	tch: 1 Matri	x: Solid		
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8021	1B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4 Difluorobenzene		0.0212	0.0200	104	80.120	
4-Bromofluorobenzene		0.0303	0.0300	104	80-120	
LID (1) // 746271	1 522855 1 DSD / 1			Solid	00 120	
Lab Batch #: 746371 San Units: mg/kg	ple: 522855-1-BSD7	BSD Bat	RROGATE RE	x: Solid	STUDY	
BTEX by EPA 802	1B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes				[D]		
1,4-Difluorobenzene		0.0291	0.0300	97	80-120	
4-Bromofluorobenzene		0.0278	0.0300	93	80-120	
Lab Batch #: 746422 San	nple: 322296-001 S / N	IS Ba	tch: ¹ Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY	
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes						
1-Chlorooctane		114	100	08	70-135	
0-Telphenyi		48.9	50.0	98	70-155	
Lab Batch #: 746422San	nple: 322296-001 SD /	MSD Bat	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY S	STUDY	
TPH By SW8015 M Analytes	od	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		113	100	113	70-135	
o-Terphenyl		48.4	50.0	97	70-135	
Lab Batch #: 746422 San	nple: 322297-001 / SM	P Ba	tch: 1 Matri	x: Soil	<u> </u>	
Units: mg/kg	-	SU	RROGATE RE	ECOVERY S	STUDY	
TPH By SW8015 M Analytes	od	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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



Project Name: EK Queen Pearce 6"

Vork Orders: 322297,			Project II	D: 2008-113		
Lab Batch #: 746422	Sample: 322297-002 / SM	P Ba	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY	STUDY	
TPH By SW8	015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analyt			100	[2]	70.107	
1-Chlorooctane		96.8 51.4	100	97	70-135	
0-Terpitenyi		51.4	50.0	103	70-133	
Lab Batch #: 746422	Sample: 322297-003 / SM	P Ba	tch: ¹ Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	ECOVERY	STUDY	
TPH By SW8	015 Mod es	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		97.6	100	98	70-135	
o-Terphenyl		51.5	50.0	103	70-135	
Lab Batch #: 746422	Sample: 322297-004 / SM	P Ba	tch: ¹ Matri	x: Soil	1	
Units: mg/kg		SU	RROGATE RE	ECOVERY	STUDY	
TPH By SW8	015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		98.8	100	99	70-135	
o-Terphenyl		52.4	50.0	105	70-135	
Lab Batch #: 746422	Sample: 322297-005 / SM	P Ba	tch: 1 Matri	ix: Soil	1	
Units: mg/kg		SU	RROGATE RE	ECOVERY	STUDY	
TPH By SW8	015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		99.0	100	90	70-135	
o-Terphenyl		53.0	50.0	106	70-135	
Lah Batch #: 7464??	Sample: 322297-006 / SM	P Ba	tch: 1 Matri	iv. Soil		
Units: mg/kg	Sample: 322277 0007 511	SU	RROGATE RE	ECOVERY S	STUDY	
TPH By SW8 Analyt	015 Mod es	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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



Project Name: EK Queen Pearce 6"

Work Orders : 322297,			Project II): 2008-113		
Lab Batch #: 746422 S	ample: 322297-007 / SM	P Bat	tch: 1 Matri	x: Soil		
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY	
TPH By SW8015	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		93.5	100	94	70-135	
o-Terphenyl		50.6	50.0	101	70-135	
Lab Batch #• 746422 S	amnle• 522884-1-BKS /]	BKS Bat	ch· 1 Matri	x: Solid	11	
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY	
TPH By SW8015	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		118	100	118	70-135	
o-Terphenyl		51.6	50.0	103	70-135	
Lab Batch #: 746422 S	ample: 522884-1-BLK /]	BLK Bat	tch: ¹ Matri	x: Solid	· · · · · ·	
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY	
TPH By SW8015	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		98.4	100	98	70-135	
o-Terphenyl		54.6	50.0	109	70-135	
Lab Batch #: 746422 S	ample: 522884-1-BSD /]	BSD Bat	ch: 1 Matri	x: Solid	· · · · ·	
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY	
TPH By SW8015	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		117	100	117	70-135	
o-Terphenyl		52.5	50.0	105	70-135	
Lab Batch #: 746545 S	ample: 322297-008 / SM	P Bat	ch: 1 Matri	x: Soil	· · ·	
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY	
TPH By SW8015 Analytes	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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



Project Name: EK Queen Pearce 6"

Work Orders : 322297,			Project II): 2008-113			
Lab Batch #: 746545	Sample: 322297-009 / SMI	Bat	tch: 1 Matri	x: Soil			
Units: mg/kg]	SU	RROGATE RE	COVERY S	STUDY		
TPH By SW8015	5 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes		10.5	100	[2]	70.107		
I-Chlorooctane		106	100	106	70-135		
0-1 erphenyl		53.5	50.0	107	/0-135		
Lab Batch #: 746545	Sample: 322297-010 / SMI	Bat	tch: 1 Matri	x: Soil			
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY		
TPH By SW8015 Analytes	5 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		104	100	104	70-135		
o-Terphenyl		51.7	50.0	103	70-135		
Lab Batch #: 746545	Sample: 322297-011 / SMI	Bat	ch: ¹ Matri	x: Soil	· ·		
Units: mg/kg]	SU	RROGATE RE	COVERY	STUDY		
TPH By SW8015 Analytes	5 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		103	100	103	70-135		
o-Terphenyl		51.6	50.0	103	70-135		
Lab Batch #: 746545	Sample: 322297-012 / SMI	e Bat	ch: 1 Matri	x: Soil			
Units: mg/kg]	SU	RROGATE RE	COVERY S	STUDY		
TPH By SW8015	5 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		104	100	104	70-135		
o-Terphenyl		52.7	50.0	105	70-135		
Lab Batch # 746545	Sample: 322297-013 / SMI) Rai	ch• 1 Mətri	x• Soil	<u> </u>		
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY		
TPH By SW8015 Analytes	5 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		106	100	106	Control File %R 000000000000000000000000000000000000		
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



Project Name: EK Queen Pearce 6"

Vork Orders: 322297,		Project II	D: 2008-113		
Lab Batch #: 746545 Sample: 322297-014 / S	SMP Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			נען		
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	56.6	50.0	113	70-135	
Lab Batch #: 746545 Sample: 322297-015 / S	SMP Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY S	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.6	100	100	70-135	
o-Terphenyl	50.8	50.0	100	70-135	
	())(0) -				
Lab Batch #: 746545 Sample: 322297-015 S	/ MS Ba	tch: 1 Matri	X: Soll		
Units: mg/kg	<u> </u>	RROGATE RI			
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	110	100	110	70.125	
o-Ternhenyl	56.0	50.0	119	70-135	
0-replicity	50.9	50.0	114	70-133	
Lab Batch #: 746545 Sample: 322297-015 Si	D/MSD Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	57.9	50.0	116	70-135	
Lab Batch #: 746545 Sample: 322297-016/	SMP Ba	tch: 1 Matri	x: Soil	<u> </u>	
Units: mg/kg	SU	RROGATE RI	ECOVERYS	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.8	100	100	70-135	
		1	1		

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: EK Queen Pearce 6"

Vork Orders : 322297,		Project II	D: 2008-113					
Lab Batch #: 746545 Sample: 322	297-017 / SMP Ba	tch: 1 Matri	ix: Soil					
Units: mg/kg	SU	RROGATE RI	ECOVERYS	STUDY				
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[0]					
1-Chlorooctane	102	100	102	70-135				
o-1erphenyl	51.7	50.0	103	70-135				
Lab Batch #: 746545 Sample: 322	297-018 / SMP Ba	tch: 1 Matri	ix: Soil					
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY				
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	102	100	102	70-135				
o-Terphenyl	51.8	50.0	102	70-135				
L + D + H 746545 Same 222	207.010 / SMD	Line 1 Madrid	Soil					
Lab Batten #: 140345 Sample: 522	ST	IRROCATE RI	FCOVERV	STUDY				
TPH By SW8015 Mod	Amount Found [A]	Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	99.4	100	99	70-135				
o-Terphenyl	50.6	50.0	101	70-135				
Lab Patch #, 746545 Sample, 322	297-020 / SMP P o	tah. 1 Matri	iv. Soil	1				
Lab batten #: 140345 Sample: 522	ST	IRROCATE RI	FCOVERV	STUDV				
	50							
TPH By SW8015 Mod Analytes	Amount Found [A]	Amount [B]	Recovery %R [D]	Limits %R	Flags			
1-Chlorooctane	102	100	102	70-135				
o-Terphenyl	51.7	50.0	103	70-135				
Lab Batch #: 746545 Sample: 322	297-021 / SMP Ba	tch: 1 Matri	ix: Soil	11				
Units: mg/kg	SU	RROGATE RI	ECOVERYS	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	52.6	52.6 50.0 105						

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: EK Queen Pearce 6"

Work Orders : 322297,		Project II	D: 2008-113		
Lab Batch #: 746545 Sample: 322297-022	e / SMP Ba	tch: 1 Matr	ix: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERYS	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			נען		
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	51.4	50.0	103	70-135	
Lab Batch #: 746545 Sample: 322297-023	S / SMP Ba	tch: 1 Matri	ix: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERYS	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	51.1	50.0	102	70-135	
Lah Batch #: 746545 Sample: 522939-1-B	KS/BKS Ba	tch· 1 Matri	iv Solid	1	
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount	True		Control	
Analytes	Found [A]	Amount [B]	Recovery %R [D]	Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	60.6	50.0	121	70-135	
Lab Batch #: 746545 Sample: 522939-1-B	LK / BLK Ba	tch: 1 Matri	ix: Solid		
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	56.0	50.0	112	70-135	
Lab Batch #: 746545 Sample: 522939-1-B	SD / BSD Ba	tch: 1 Matr	ix: Solid		
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	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



Project Name: EK Queen Pearce 6"

Work Orders: 322297,		Project II	D: 2008-113		
Lab Batch #: 746564 Sample: 322297-02	24 / SMP Ba	tch: 1 Matri	ix: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			נען		
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	52.0	50.0	104	70-135	
Lab Batch #: 746564 Sample: 322297-02	25 / SMP Ba	tch: 1 Matri	ix: Soil		
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	51.5	50.0	103	70-135	
Lab Batch #: 746564 Sample: 322297-0	26 / SMP Bai	tch: 1 Matri	ix: Soil	1	
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	52.4	50.0	101	70-135	
Lah Batch #• 746564 Sample• 322297-0	27 / SMP Bat	tch· 1 Matri	iv Soil		
Units: mg/kg		RROGATE RI	ECOVERY S	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	53.5	50.0	107	70-135	
Lab Batch #: 746564 Sample: 322381-0	02 S / MS Rat	tch: 1 Matri	ix: Soil	1	
Units: mg/kg	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	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



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															
Lab Batch #: 746564	Sample: 322381-002 SD /	MSD Bat	tch: 1 Matri	x: Soil											
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY										
TPH By SW801 Analytes	5 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags									
1-Chlorooctane		123	100	123	70-135										
o-Terphenyl		63.0	50.0	126	70-135										
Lab Batch #: 746564	Sample: 522946-1-BKS /	BKS Bat	tch: ¹ Matri	x: Solid	<u>.</u>										
Units: mg/kg		SU	RROGATE RE	COVERY S	STUDY										
TPH By SW801 Analytes	5 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags									
1-Chlorooctane		120	100	120	70-135										
o-Terphenyl		57.4	50.0	115	70-135										
Lab Batch #: 746564	Sample: 522946-1-BLK /	BLK / BLK Batch: 1 Matrix: Solid													
Units: mg/kg		SURROGATE RECOVERY STUDY													
TPH By SW801 Analytes	5 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags									
1-Chlorooctane		101	100	101	70-135										
o-Terphenyl		50.8	50.0	102	70-135										
Lab Batch #: 746564	Sample: 522946-1-BSD / 2	BSD Bat	tch: 1 Matri	x: Solid											
Units: mg/kg		SU.	RROGATE RE	COVERY S	STUDY										
TPH By SW801 Analytes	.5 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags									
1-Chlorooctane		119	100	119	70-135										
o-Terphenyl		62.9 50.0 126 70-1													

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B





Work Order #: 322297	Project ID: 2008-113 Date Prepared: 01/13/2009 Date Analyzed: 01/13/2009															
Analyst: ASA	Da	ate Prepare	ed: 01/13/200	19			Date A	nalyzed: (01/13/2009							
Lab Batch ID: 746367 Sample: 522852-1-F	3KS	Batch	1 #: 1					Matrix: S	Solid							
Units: mg/kg		BLAN	K /BLANK S	SPIKE / B	BLANK S	PIKE DUPI	LICATE 1	RECOVE	ERY STUD	Y						
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag					
Benzene	ND	0.1000	0.0988	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	D:	ate Prepar	ed: 01/13/200	19		Date Analyzed: 01/14/2009										
Lab Batch ID: 746371 Sample: 522855-1-E	3KS	Batch	1#: 1			Matrix: Solid										
Units: mg/kg		BLAN	K /BLANK S	SPIKE / B	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					
BTEX by EPA 8021B Analytes Benzene	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag					
BTEX by EPA 8021B Analytes Benzene Toluene	Blank Sample Result [A] ND	Spike Added [B] 0.1000 0.1000	Blank Spike Result [C] 0.0923	Blank Spike %R [D] 92 88	Spike Added [E] 0.1	Blank Spike Duplicate Result [F] 0.0939	Blk. Spk Dup. %R [G] 94	RPD %	Control Limits %R 70-130 70-130	Control Limits %RPD 35 35	Flag					
BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene	Blank Sample Result [A] ND ND	Spike Added [B] 0.1000 0.1000 0.1000	Blank Spike Result [C] 0.0923 0.0880 0.0910	Blank Spike %R [D] 92 88 91	Spike Added [E] 0.1 0.1	Blank Spike Duplicate Result [F] 0.0939 0.0899	Blk. Spk Dup. %R [G] 94 90 93	RPD %	Control Limits %R 70-130 70-130 71-129	Control Limits %RPD 35 35 35	Flag					
BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene m.p-Xylenes	Blank Sample Result [A] ND ND ND	Spike Added [B] 0.1000 0.1000 0.1000 0.1000	Blank Spike Result [C] 0.0923 0.0880 0.0910 0.1791	Blank Spike %R [D] 92 88 91 90	Spike Added [E] 0.1 0.1 0.1 0.1	Blank Spike Duplicate Result [F] 0.0939 0.0899 0.0927 0.1820	Blk. Spk Dup. %R [G] 94 90 93 91	RPD %	Control Limits %R 70-130 70-130 71-129 70-135	Control Limits %RPD 35 35 35 35 35	Flag					

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





Work Order #: 322297						Project ID: 2008-113										
Analyst: BHW	Da	ate Prepar	ed: 01/13/200)9			Date Ai	nalyzed: (01/13/2009							
Lab Batch ID: 746422 Sample: 522884-1-	BKS	Batc	h#: 1					Matrix: S	Solid							
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	LICATE I	RECOVE	ERY STUD	Y						
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag					
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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	Da	ate Prepar	ed: 01/14/200)9		Date Analyzed: 01/14/2009										
Lab Batch ID: 746545 Sample: 522939-1-	BKS	Bate	h#: 1			Matrix: Solid										
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	LICATE 1	RECOVI	ERY STUD	Y						
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag					
C6-C12 Gasoline Range Hydrocarbons	ND 1000 1			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





Work Order #: 322297 Analyst: BHW Lab Batch ID: 746564	Sample: 522946-1-B	Da KS	ate Prepar Batcl	red: 01/14/200 h #: 1	Pro Date A	ject ID: 2 nalyzed: () Matrix: S	2008-113 01/15/2009 Solid									
Units: mg/kg	[BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
TPH By SW801	5 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Besult [F]	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Analytes			[D]	[C]	נטן		Kesuit [F]	[6]								
C6-C12 Gasoline Range Hydrocar	bons	ND	1000	945	95	1000	925	93	2	70-135	35					
C12-C28 Diesel Range Hydrocarb	ons	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 Date Analyzed: 01/14/2009	QC- Sample ID: Date Prepared:	322296 01/13/2	-001 S 009	Ba An	tch #: alyst:	1 Matri ASA	x: Soil									
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	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 0.108 ND 0.1088 0.0647 59 0.109						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	0.1359	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 Date Analyzed: 01/14/2009	QC- Sample ID: Date Prepared:	322297 01/13/2	-015 S 009	Batch #: 1 Matrix: Soil Analyst: ASA												
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY							
BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SParentSpiked SampleSpikedSampleSpikeResultSampleResultAdded[C]%RAdded[A][B][D][E]					Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag					
Benzene	ND 0.1052 0.0710				0.1052	0.0727	69	3	70-130	35	X					
Toluene	ND	0.1052	0.0702	2 67 0.1052 0.0723			69	3	70-130	35	X					
Ethylbenzene	ND 0.1052 0.0743 71 0				71 0.1052 0.0768 73				71-129	35						
m,p-Xylenes	ND 0.2103 0.1464 70 0.2						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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ 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 Matrix: Soil Batch #: 1 Date Prepared: 01/13/2009 Analyst: BHW Date Analyzed: 01/14/2009 Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Duplicate Control Spiked Spiked Control TPH By SW8015 Mod Sample Spiked Sample Spike Result Sample Spike Dup. RPD Limits Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] 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 1 Matrix: Soil Batch #: Date Prepared: 01/14/2009 Analyst: BHW Date Analyzed: 01/14/2009 **Reporting Units:** mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control TPH By SW8015 Mod Sample Spike Result Sample Spike Spiked Sample Dup. RPD Limits Limits Flag Result Added %R Added Result [F] % %R %RPD [C] %R Analytes [A] [**B**] [D] [E] [G] 95 C6-C12 Gasoline Range Hydrocarbons ND 1050 996 1050 999 95 0 70-135 35 ND 101 70-135 35 C12-C28 Diesel Range Hydrocarbons 1050 1060 101 1050 1060 0 Lab Batch ID: 746564 QC- Sample ID: 322381-002 S Batch #: Matrix: Soil 1 Date Prepared: 01/14/2009 Analyst: BHW Date Analyzed: 01/15/2009 Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control TPH By SW8015 Mod Sample Result Sample Spiked Sample Dup. RPD Limits Limits Spike Spike Flag Result Added [C] %R Added Result [F] %R % %R %RPD Analytes [A] [**B**] [D] [E] [G] C6-C12 Gasoline Range Hydrocarbons ND 1110 1030 93 1110 1020 92 1 70-135 35 70.1 1110 1070 90 1110 1060 89 70-135 35 C12-C28 Diesel Range Hydrocarbons 1

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

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





Work Order #: 322297

Lab Batch #: 746380			Project I	D: 2008-113	3
Date Analyzed: 01/13/2009 Date Pr	epared: 01/1	3/2009	Analy	st: BEV	
QC- Sample ID: 322296-001 D	Batch #: 1	l	Matr	ix: Soil	
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	8.07	10.4	25	20	F
Lab Batch #: 746383					
Date Analyzed: 01/13/2009 Date Pr	epared: 01/1	3/2009	Analy	st: BEV	
QC- Sample ID: 322297-015 D	Batch #: 1	l	Matr	ix: Soil	
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte		[10]			

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

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:	anager: <u>Camille Bryant</u>													_	_ Pr	ojec	t Nai	me:	EK (Que	<u>en P</u>	'ear	ce f	;"					
	Company Name	Basin Environmental Se	rvice T	echnol	ogies, LLC											-	Pr	ojec	t #:_	2008	-11:	3								
	Company Address:	P.O. Box 301														-	Proje	ect L	oc:	Lea C	oun	ty, N	M							
	City/State/Zip:	Lovington, NM 88260														-		РС)#:_	PAA	D. E	Згуа	nt							_
	Telephone No:	(575)605-7210	>			Fax No:		(50:	5) 39	96-1	429					Repo	t Fo	mat	:	X s	tanda	ard			TRR	P	Γ] NP[DES	
	Sampler Signature:	ancos \$	Tr.	<u>an</u>	+	e-mail:		<u>cib</u>	orya	ant(@b	asi	n-co	กรเ	ultir	<u>ng.com</u>	-													
(lab use	oniv)	· ·	0	1													_			TCU	<u>م</u> ارد	naly;	ze Fr	or:						
ORDER	32	1797							-			- 0 -					F		_	TOTAL		_	\square	x			Ì		72 ho	
ORDER	······································	0011	, -						Pre	eserv	ratio	n & # I	of Co	ntain	ers	Matrix P g E	015B	6			g Se			3260					* –	-
LAB # (lab use only)	FIEI	LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Fittered	Total #. of Contamers	lce	HNO ₃	HCI	H ₂ SO,	NacH Na ₂ S ₂ O ₃	None	Other (Specify)	DW = Drinking water SL - Slud GW = Groundwater S - Soll ^y Sc NP + Non-Potable Specify Oth	TPH- 418.1 8015M 80	TPIE: TX 1005 TX 1006	Calions (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity) SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg	Volatiles	Semivolatıles	BTEX 8021B/5030 or BTEX 8	RCI	N.O.R.M			RUSH TAT (Pre-Schedule) 24 Standard TAT 4 DAY	
01	M	W-1 10'			6-Jan-09	1000		1	х							SOIL	x	Ż	-		╞			x	-	-	1		<u> </u>	Į,
OL	M	W-1 30'			6-Jan-09	1010		1	x							SOIL	x				1	\square	\square	x	1	\top			X	2
03	M	W-1 50'			6-Jan-09	1030		1	x							SOIL	X							x					X	4
04	M	W-1 70'			6-Jan-09	1055		1	x							SOIL	X							x				\square	X	7
05	M\	W-1 90'			6-Jan-09	1120		1	x							SOIL	Х	_						x					X	$\langle \rangle$
00	<u>м</u> и	V-1 110'			6-Jan-09	1150		1	x							SOIL	х							x					X	
10	MV	V-1 127'			6-Jan-09	1235		1	x							SOIL	x			_				х					X	
09	MV	N-2 10'			7-Jan-09	1100	\downarrow	1	X	_		_				SOIL	x					Ш		x					x	4
09	MV	N-2 30'			7-Jan-09	1110	_	1	×	_	\downarrow	_	_			SOIL	х	_			_	┝╌╽	\square	×	\downarrow			Ш	<u> </u>	4
	MV.	N-2 50'			7-Jan-09	1130		1	X							SOIL	X							x					<u> </u>	1
Relinquist	ed by: Date Time Received by: All Received by: All Beceived by: Hard Date Time Beceived by:											Date Time Date Time Laboratory Comments: Sample Containers Intact? VOCs Free of Headspace? Headspace? Labels on container(s) Labels on container(s) Custody seals on cooler(s) Custody seals on cooler(s) Date Time						z 22222												
Relinquist	ned py.	V 13/09 Date	Date Time Béceived by: /13/04/D: 36 Bate Time Received by ELOT: With Constant in the Consta												Da 131	te 07 10	Time	0	b b Femp	y San y Cou U (xeratu	ipler/ rier? 5 2 ire U	Clien 9(/ pon l	t Rep UPS らうご Rece	o. ? D b eipt:	νHL	Fe	2,1	Lone	I Star ℃	



Environmental Lab of Texas

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

	Project Manager: Camille Bryant														_ 1	Proje	ct Na	ime:	EK	Qu	een l	Pea	rce	6"					
	Company Name Basin Environmental Ser	vice T	echnol	ogies, LLC											_	F	roje	ct #:	200	8-1	13								
	Company Address: P. O. Box 301															Pro	ject	Loc:	Lea	Соц	nty, I	ми							
	City/State/Zip: Lovington, NM 88260														-		P	0#:	PAA	- D	Brva	Int							
	Telephone No: (575)605-7210 Sampler Signature: LAM (DQ R	Seal	int	<u></u>	Fax No: e-mail:		<u>(50</u>	95) 3 bry	96-1 ant	42 9 @t	pas	in-c	ons	sulti	- _ Rep ng.cor	ort F N	orma	it:	X :	Stan	dard			TRF	RP		م []	IPDE	.s
		0			•				••							-Γ				_	Anal	/ze l	or:	_			_	T	1
(lab use																⊢			TCI TOT	LP: AL:	+	┿╌	x		1			72 hrs	
ORDEF	X#: JLLLMI	,	Preservation & # of Containers											Matri	X g					3	+	60				1	48	L	
LAB # (tab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	lce	HNO.4	HCI	H ₂ SO4	NaOH	Nervoui	Other (Specify)	DW - Drinking Water SL - Sludg GW = Groundwater S= SolVSol	NP Non-Potable Specify Othe TPH 418 - 8015M 801	TPH- TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalimty)	SAR/ESP/CEC	Metals: As Ag va Co Cr Pb Hg ; Volaties	Semivolatiles	BTEX 80218/5030 or BTEX 82	RCI	N O.R.M.			RUSH TAT (Pre-Schedule) 24,	Standard TAT & DAY
11	MW-2 70'	<u> </u>	<u> </u>	7-Jan-09	1150	<u> </u>	1	x	t				╈	1	SOIL	SOIL X										T _x			
12	MW-2 95'			7-Jan-09	1215		1	x					+	+	SOIL	5	i i			1		†	x	-+	\square		+	+	T
13	MW-2 110'			7-Jan-09	1240		1	x					+-	\top	SOIL	5						┢	x			-	\uparrow	+-	x
14	MW-2 120'			7-Jan-09	1315		1	x						1	SOIL	.)	(Γ	X			1		T	x
15	MW-3 10'			8-Jan-09	0930		1	x							SOIL	.)	(T			x					T	x
iu	MW-3 35'			8-Jan-09	0940		1	x							SOIL	.)	(x						x
17	MW-3 50'			8-Jan-09	0955		1	х							SOIL	. ,							x						x
10,	MW-3 70'			8-Jan-09	1015		1	х							SOIL	. >							x					Τ	X.
19	MW-3 90'			8-Jan-09	1040		1	x							SOIL	. x							x						X
10	MW-3 110'			8-Jan-09	1110		1	х	ĺ						SOIL	. x							x						x
Special Instructions: Relinquished by Relinquished by										 ∕∕	ate 3/04	†# ?:	ne 15	Lab Sar VO Lab Cus Cus	nple (Cs Fri els or tody	cont cont cont seal seal	f Hea f Hea ntaine s on c s on c	ients i Inta dspa ir(s) conta coole	s: act? ace? ainer(ar(s)	s)		C SC D	0-000-1	É,zzz					
Relinquis	by Date Time Received by 13/04/0-36 by Date Time Received by ELOT:													ne	Tir Tir	ne	Sar Ten	npie H by Sa by Co perai	land mple urier {	I Deliv er/Clie ? Z ク Upon	rerec nt Re UP: (५ : Rec	1 sp.? S 1 SS ceipt:	DHL	e¢ N 20 N HL FedEx Lone Star 				ar	
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Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

	Project Manager: <u>Camille Bryant</u>								_							Pre	ojer	ct Na	me	: <u>E</u> F	(Q	uee	n P	'ear	rce	6"					
	Company Name Basin Environmental Se	rvice T	echnol	ogies, LLC					_								Ρ	roje	ct#	: 20	08-	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			٨	Fax No:		(50)5) 3	96-	429	•					Report Format: X Standard TRRP NP					NPD	ES									
	Sampler Signatule:	in	ivo	<u> </u>	e-mail:	-	cjł	bry	an	@	bas	sin-	cor	ารน	ltin	<u>g.com</u>	 -														_
(iab use	only)	Ŭ															E			Т	CLP:		haiy.	ze F	or:	_	-			-	5
ORDE	R#: 322297							Pr	eser	vati	<u></u> วก &	. 0	f Con	taine	ers f	Matrix				TC T	TAL:		F	\vdash	X						8, 721
LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Tolal #. of Containers	te	"ONH	HCI	H,SO4	NaCH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW Drinking Water SL ~ Sludg CW ~ Groundwater 5 ~ Soli/Soli NP=Non-Potable Specify Oth	TPH: 418.1 8015M 8015	TPH- TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (CI, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 80218/5030 or BTEX 8260	RCI	N.O.R.M.				KUSH IA (Pre-Schedule) 24. 4 Standard TAT 4 DAY
11	MW-3 113'			8-Jan-09	1150		1	x								SOIL	x								x				1	┮	X
U	SB-5 10'			9-Jan-09	1020		1	x								SOIL	x								x		\square				x
13	SB-5 20'			9-Jan-09	1025		1	х							i	SOIL	X								x						X
24	SB-5 30'		Í	9-Jan-09	1035		1	x								SOIL	x								x						X
15	SB-5 40'			9-Jan-09	1045		1	x	L.							SOIL	x								x						X
10	SB-5 50'	[9-Jan-09	1100		1	x							_	SOIL	X		L						x		\Box				X
21	\$B-5 60'			9-Jan-09	1120		1	x			Ļ			\dashv	4	SOIL	X	-							x			-	\downarrow	\downarrow	x
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Special	Instructions:	і т							J				i				I		Lai Sai VO	bora mple Cs F	tory Cor	Co ntair of I	mme ners lead	ents Inta Ispa	s: ict? ice?	1			<u> </u>	N N	
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Environmental Lab of Texas Variance/ Corrective Action Report- Sample Log-In

Cilent:	Basin Env. Plains									
oate/ Time:	1309 1036									
⊾ab 1D # :	320297									
mbals: 1 -	al									

Sample Receipt Checklist

				Client Initials
1	Temperature of container/ cooler?	(es)	No	-2.0 °C
2	Shipping container in good condition?	des	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?	Ves	No	
<u>8</u>	Chain of Custody agrees with sample label(s)?	(es	No	ID written on Cont./ Lid
:9	Container label(s) legible and intact?	es	No	Not Applicable
:10	Sample matrix/ properties agree with Chain of Custody?	Yes	No	
11	Containers supplied by ELOT?	(es)	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	
ŧ15	Preservations documented on Chain of Custody?	Yes	No	
1 6ء	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>
120	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 ana	lysis

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

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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:2008-113Work 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 reanalysis. 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.



Project Id: 2008-113 Contact: Jason Henry Project Location: Lea County, NM

Certificate of Analysis Summary 335951 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: E K Queen 6" Pearce



Date Received in Lab: Fri Jun-19-09 08:40 am

Report Date: 26-JUN-09

I I UICCE Manager. Diem Darion. II

	Lab Id:	335951-0	001	335951-0	02	335951-(003		
Analysis Deguested	Field Id:	SP # 1		SP # 2		SP # 3	3		
Analysis Kequestea	Depth:								
	Matrix:	SOIL		SOIL		SOIL	,		
	Sampled:	Jun-17-09 1	15:00	Jun-17-09 1	5:10	Jun-18-09	14:00		
BTEX by EPA 8021B Extracted:		Jun-24-09	17:00	Jun-24-09 1	7:00	Jun-25-09	17:00		
	Analyzed:	Jun-24-09 2	Jun-24-09 23:35		Jun-24-09 23:56		01:02		
	Units/RL:	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	Extracted:								
	Analyzed:	Jun-22-09	10:23	Jun-22-09 10:23		Jun-22-09 10:23			
	Units/RL:	%	RL	%	RL	%	RL		
Percent Moisture		ND	1.00	ND	1.00	1.94	1.00		
TPH By SW8015 Mod	Extracted:	Jun-22-09 (08:57	Jun-22-09 (8:57	Jun-22-09	08:57		
3	Analyzed:	Jun-23-09 (08:34	Jun-23-09 (9:00	Jun-23-09	09:25		
	Units/RL:	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

XENCO Laboratories



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

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



Project Name: E K Queen 6" Pearce

Nork Orders : 335951	ι,	Project ID: 2008-113								
Lab Batch #: 763558	Sample: 532559-1-BKS / B!	KS Ba	tch: 1 Matri	x: Solid						
Units: mg/kg	Date Analyzed: 06/24/09 21:26	SU	RROGATE RF	ECOVERY ?	STUDY					
ВТЕХ	X 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 / B	SD Ba	tch: 1 Matri	ix: Solid						
Units: mg/kg	Date Analyzed: 06/24/09 21:47	SU	RROGATE RF	ECOVERY S	STUDY					
BTEX	X 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	1				
4-Bromofluorobenzene		0.0331	0.0300	110	80-120					
Lah Batch #: 763558	Sample: 532559-1-BLK / B	LK Ba	tch: 1 Matri	ix: Solid	<u>.</u>					
Units: mg/kg	Date Analyzed: 06/24/09 22:30	SU	RROGATE RF	ECOVERY !	STUDY					
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1.4-Difluorobenzene		0.0259	0.0300	86	80-120	1				
4-Bromofluorobenzene		0.0214	0.0300	71	80-120	*				
Lab Batch #: 763558	Sample: 335951-001 / SMP	Ba	tch: 1 Matri	ix: Soil	<u>.</u>					
Units: mg/kg	Date Analyzed: 06/24/09 23:35	SURROGATE RECOVERY STUDY								
BTEX	X 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	Ba	tch: 1 Matri	ix: Soil	<u>.</u>					
Units: mg/kg	Date Analyzed: 06/24/09 23:56	SU	RROGATE RF	ECOVERY ?	STUDY					
BTEX	X 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	i				
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



Project Name: E K Queen 6" Pearce

Nork Orders : 335951	1,	Project ID: 2008-113									
Lab Batch #: 763672	Sample: 532618-1-BKS / BF	KS Ba	tch: 1 Matri	ix: Solid							
Units: mg/kg	Date Analyzed: 06/25/09 22:10	SU	RROGATE RF	COVERY	STUDY						
ВТЕУ	X 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 / BS	SD Ba	tch: 1 Matri	ix: Solid							
Units: mg/kg	Date Analyzed: 06/25/09 22:31	SU	SURROGATE RECOVERY STUDY								
BTEX	X 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 / BJ	LK Ba	tch: 1 Matri	ix: Solid	<u>. </u>						
Units: mg/kg	Date Analyzed: 06/25/09 23:15	SU	RROGATE RI	ECOVERY	STUDY						
BTEX	X 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	Ba	tch: 1 Matri	ix: Soil	1						
Units: mg/kg	Date Analyzed: 06/26/09 01:02	SU	SURROGATE RECOVERY STUDY								
ВТЕУ	X 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 / BJ	KS Ba	tch: 1 Matri	ix: Solid	<u>. </u>						
Units: mg/kg	Date Analyzed: 06/23/09 07:17	SU	RROGATE RF	ECOVERY S	STUDY						
ТРН Ј	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



Project Name: E K Queen 6" Pearce

Work Orders : 335951 Lab Batch #: 763323	, Sample: 532416-1-BSD / BS	SD Ba	Project II tch: 1 Matri	D: 2008-113 x: Solid							
Units: mg/kg	Date Analyzed: 06/23/09 07:42	SU	RROGATE RE	ECOVERY	STUDY						
ТРН	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 / BI	LK Ba	tch: ¹ Matri	x: Solid							
Units: mg/kg	Date Analyzed: 06/23/09 08:08	SU	RROGATE RE	ECOVERY	STUDY						
ТРН	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	Ba	tch: ¹ Matri	x: Soil							
Units: mg/kg	Date Analyzed: 06/23/09 08:34	SU	RROGATE RE	ECOVERY	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	P Batch: 1 Matrix: Soil									
Units: mg/kg	Date Analyzed: 06/23/09 09:00	SURROGATE RECOVERY STUDY									
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
1 (11)	Analytes			[U]							
1-Chlorooctane		86.5	99.7	87	70-135						
	a 225051.002 (8) B	4/.1	49.9	94	/0-133						
Lab Batch #: 763323	Sample: 335951-003 / SMP	Batch: 1 Matrix: Soil									
Units: mg/kg	Date Analyzed: 06/23/09 09:25				31001						
TPH 1	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



Project Name: E K Queen 6" Pearce

Work Orders : 335951	,	Project ID: 2008-113									
Lab Batch #: 763323	Sample: 335951-001 S / MS	S Bat	tch: 1 Matri	ix: Soil							
Units: mg/kg	Date Analyzed: 06/23/09 17:45	SU	RROGATE RI	ECOVERY S	STUDY						
TPH I	By SW8015 Mod	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 / N	MSD Batch: 1 Matrix: Soil									
Units: mg/kg	Date Analyzed: 06/23/09 18:11	SURROGATE RECOVERY STUDY									
ТРН І	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




Project Name: E K Queen 6'' Pearce

Work Order #: 335951							Proj	ject ID: 2	2008-113		
Analyst: ASA	Da	ate Prepar	ed: 06/24/200)9			Date A	nalyzed: 0	6/24/2009		
Lab Batch ID: 763558 Sample: 532559-1-1	3KS	Batch	n#: 1					Matrix: S	olid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	JICATE J	RECOVE	RY STUD	Y	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.0996	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-Xvlene	ND	0.0996	0.0972	98	0.099	0.0974	98	0	71-133	35	
·j	THE .	0.0770	0.0772	,,,	0.077	0.0774	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		11 100	55	
Analyst: ASA	Da	ate Prepar	ed: 06/25/200)9	0.077	0.0774	Date A	nalyzed: 0	6/25/2009	55	
Analyst: ASA Lab Batch ID: 763672 Sample: 532618-1-1	Da BKS	ate Prepar Batcl	ed: 06/25/200)9	0.099	0.0774	Date A	nalyzed: () Matrix: S)6/25/2009 Jolid		
Analyst: ASA Lab Batch ID: 763672 Sample: 532618-1-1 Units: mg/kg	Da Da	ate Prepar Batcl BLAN	ed: 06/25/200 n#: 1 K/BLANK S)9 SPIKE / E	BLANK S	PIKE DUPI	Date A	nalyzed: () Matrix: S RECOVE)6/25/2009 Solid	Y	
Analyst: ASA Lab Batch ID: 763672 Sample: 532618-1-1 Units: ^{mg/kg} BTEX by EPA 8021B Analytes	Da BKS Blank Sample Result [A]	ate Prepar Batcl BLAN Spike Added [B]	ed: 06/25/200 n #: 1 K /BLANK S Blank Spike Result [C])9 SPIKE / E Blank Spike %R [D]	BLANK S Spike Added [E]	PIKE DUPI Blank Spike Duplicate Result [F]	Date An LICATE 1 Blk. Spk Dup. %R [G]	nalyzed: () Matrix: S RECOVE	06/25/2009 Solid CRY STUD Control Limits %R	Y Control Limits %RPD	Flag
Analyst: ASA Lab Batch ID: 763672 Sample: 532618-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene	Blank Sample Result [A] ND	ate Prepar Batcl BLAN Spike Added [B] 0.1000	ed: 06/25/200 n #: 1 K /BLANK S Blank Spike Result [C] 0.1077	09 SPIKE / E Blank Spike %R [D] 108	BLANK S Spike Added [E] 0.1	PIKE DUPI Blank Spike Duplicate Result [F] 0.1091	Date An Date An None (G] 109	nalyzed: (Matrix: S RECOVE	06/25/2009 Solid ERY STUD Control Limits %R 70-130	Y Control Limits %RPD 35	Flag
Analyst: ASA Lab Batch ID: 763672 Sample: 532618-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene	Da Blank Sample Result [A] ND ND	ate Prepar Batcl BLAN Spike Added [B] 0.1000 0.1000	ed: 06/25/200 n #: 1 K /BLANK S Blank Spike Result [C] 0.1077 0.1054	09 SPIKE / E Blank Spike %R [D] 108 105	Spike Added [E] 0.1 0.1	Blank Spike Duplicate Result [F] 0.1091 0.1069	Date A1 Date A1 Difference of Content /b>	nalyzed: (Matrix: S RECOVE RPD %	06/25/2009 Solid Control Limits %R 70-130 70-130	VY Control Limits %RPD 35 35	Flag
Analyst: ASA Lab Batch ID: 763672 Sample: 532618-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene	Blank Sample Result [A] ND ND ND ND	ate Prepar Batcl BLAN Spike Added [B] 0.1000 0.1000 0.1000	ed: 06/25/200 n #: 1 K /BLANK S Blank Spike Result [C] 0.1077 0.1054 0.1112)9 SPIKE / E Blank Spike %R [D] 108 105 111	BLANK S Spike Added [E] 0.1 0.1 0.1	PIKE DUPI Blank Spike Duplicate Result [F] 0.1091 0.1069 0.1127	Date A1 Date A1 Date A1 Dup. %R [G] 109 107 113	nalyzed: (Matrix: S RECOVE	06/25/2009 Solid ERY STUD Limits %R 70-130 70-130 71-129	VY Control Limits %RPD 35 35 35	Flag
Analyst: ASA Lab Batch ID: 763672 Sample: 532618-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene m,p-Xylenes	Da Blank Sample Result [A] ND ND ND ND ND ND	Spike Added [B] 0.1000 0.1000 0.1000 0.1000	ed: 06/25/200 h #: 1 K /BLANK \$ Blank Spike Result [C] 0.1077 0.1054 0.1112 0.2232	Blank SPIKE / E Blank Spike %R [D] 108 105 111 112	Spike Added [E] 0.1 0.1 0.1	Blank Spike Duplicate Result [F] 0.1091 0.1069 0.1127 0.2261	Date A1 Date A1 Date A1 Date A1 Date A1 Dup. %R [G] 109 107 113 113	nalyzed: (Matrix: S RECOVE RPD % 1 1 1 1 1	06/25/2009 Solid Control Limits %R 70-130 70-130 71-129 70-135	25 Control Limits %RPD 35 35 35 35 35	Flag

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: E K Queen 6" Pearce

Work Order #: 335951 Analyst: BHW Lab Batch ID: 763323 Sample: 53	D 32416-1-BKS	ate Prepar Bate	red: 06/22/200 h #: 1)9			Pro Date A	ject ID: 2 nalyzed: (Matrix: S	2008-113 06/23/2009 Solid		
Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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



Project ID: 2008-113 Work Order #: 335951 Lab Batch ID: 763323 Matrix: Soil QC- Sample ID: 335951-001 S Batch #: 1 Date Prepared: 06/22/2009 Analyst: BHW Date Analyzed: 06/23/2009 Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control TPH By SW8015 Mod Sample Result Spiked Sample RPD Spike Sample Spike Dup. Limits Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] C6-C12 Gasoline Range Hydrocarbons 56.8 998 943 89 999 895 84 5 70-135 35 100 79 C12-C28 Diesel Range Hydrocarbons 603 998 1600 999 1390 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: E K Queen 6" Pearce

Work Order #: 335951

Lab Batch #: 763001			Project I	D: 2008-113	3
Date Analyzed: 06/22/2009 Date	Prepared: 06/2	2/2009	Analy	st: BEV	
QC- Sample ID: 335900-001 D	Batch #: 1		Matr	ix: Soil	
Reporting Units: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	9.45	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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

1	Project Manager: Camille Bryant		_	PAGE 01 OI	= 01	_	_	_			_		_		Proje	ct Na	me:	EK	Que	een	6" F	Pear	ce				
	Company Name Basin Environmental Se	rvice T	echnol	ogies, LLC	1	_		_							F	roje	ct #:	2008	3-11	3							_
	Company Address: P. O. Box 301														Pro	ject	.oc:	Lea (Cour	nty, M	M						
	City/State/Zip: Lovington, NM 88260									-						P	0 #:	PAA	- J. I	Henr	у						
	Telephone No: (575) 605-7210	B	(a.t	Fax No:		(50	5) 39	96-14	129 @ba	ein		eulti	Rep	port F	orma	t:	x s	tand	lard			TRF	RΡ.		NPDE	s
10-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	Sampler Signature	0	A	uur	e-mail.			Лус		w,Da	5111	-cons	Sulli	ng.co	F	_		70	/	Analy	/ze F	or:		-		Τ.	1
(lab use of	* 335951						122	Dee	COR	ation	0 // 0	of Contro	laore	1 Mate		-	_	TOTA	P:	-		X				72 hrs	
AB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers 4028	Ice	EONH Service	HCI HSO.	HOBN	Na ₂ S ₂ O ₃	Other (Specify)	DW = Drinking Water SL = Sludg	NP-Non-Potable Specify oth	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	Metals: As Aa Ba Cd Cr Pb Ha Se	Volatiles	Semivolatiles	BTEX 8021B/5080 or BTEX 8260	RCI .	N.O.R.M.		RUSH TAT (Pre-Schedule) 24, 48	Standard TAT
01	SP #1			06/17/09	1500	LL	1	x						SOI	L)	1				Í		X		-		-	X
07	SP #2			06/17/09	1510		1	x						SOI	L)							x					X
03	5P#3			किशिक	1400		1	X						301	- 7	4		-	-			X				+	X
				3												t			1							1	
Reinquishe Reinquishe Reinquishe	Hed by: Allo Barrint lo 19 0 Hed by: Hed by: Hed by: Hed by: Date Date		me DD me 40 me	Received by: Received by: Received by ELC	Fin Tit	900	3			-		0	dix Di Di Di Di Di	ate 209 ate ate i-09	Tir JSO Tir Tir 081	ne De ne	Sam VOC Labe Cus Cus Sam	ple C S Free als on tody s tody s ple H by Sai py Co perat	conta ee of con seals seals land mple urier	Hea tainers on c on c Delin Clie	s Inta dspa er(s) conta coole verec ups Rec	iner(r(s)	(s) /(DHL	label Fe	SODO Y DY L) tar

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

Client:	Plains / Basin
Date/ Time:	06-19-09 0 0840
Lab ID # :	335951
Initials:	JMF

Sample Receipt Checklist

				Client	Initials
#1	Temperature of container/ cooler?	(Yes)	No	1.6 °C	
#2	Shipping container in good condition?	(res)	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container? /label	(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)?	Fes	No	iD written on Cont./ Lid	
#9	Container label(s) legible and intact?	(Tes)	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	tes	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:

Date/ Time:

Regarding:

Corrective Action Taken:

Check all that Apply:

See attached e-mail/ fax

Contacted by:

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



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.



Project Id: 2008-113 Contact: Jason Henry Project Location: West of Hobbs, NM

Certificate of Analysis Summary 336188 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce 6"



Date Received in Lab: Tue Jun-23-09 09:25 am

Report Date: 29-JUN-09

Project Manager: Brent Barron, II

	Lab Id:	336188-001	336188-002		
Analysis Pognostad	Field Id:	SP # 4	SP # 5		
Analysis Kequesieu	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:				
	Analyzed:	Jun-24-09 10:42	Jun-24-09 10:42		
	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

XENCO Laboratories



- 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	(813) 620-2000	(813) 620-2033
5757 NW 158th St. Miami Lakes. FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Project Name: EK Queen Pearce 6"

Vork Orders: 336188	3,		Project II	J: 2008-113		
Lab Batch #: 763727	Sample: 532647-1-BKS / B!	KS Ba	tch: 1 Matri	x: Solid		
Units: mg/kg	Date Analyzed: 06/26/09 09:16	SU	RROGATE RF	COVERY S	STUDY	
ВТЕУ	X 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		0.0322	0.0300	107	80-120	·
Lab Batch #: 763727	Sample: 532647-1-BSD / B	SD Ba	itch: 1 Matri	ix: Solid	·	
Units: mg/kg	Date Analyzed: 06/26/09 09:37	SU	RROGATE RF	COVERY S	STUDY	
ВТЕУ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	Anaryus	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene		0.0332	0.0300	111	80-120	
Lah Batch #: 763727	Sample: 532647-1-BLK / B	J.K Ba	tch: 1 Matri	ix: Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 06/26/09 10:20	SU	JRROGATE RF	ECOVERY S	STUDY	
ВТЕУ	X by EPA 8021B	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		0.0208	0.0300	69	80-120	*
Lab Batch #: 763727	Sample: 336188-001 / SMP	Ba	tch: 1 Matri	ix: Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 06/26/09 18:08	SU	JRROGATE RF	ECOVERY S	STUDY	
ВТЕУ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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	, Ba	tch: 1 Matri	ix: Soil	<u>. </u>	
Units: mg/kg	Date Analyzed: 06/26/09 18:30	SU	RROGATE RF	ECOVERY S	STUDY	
ВТЕУ	X 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		0.0585	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



Project Name: EK Queen Pearce 6"

Vork Orders : 336188,	G 1 520400 1 DVC / D	VC	Project II): 2008-113		
	Sample: 332498-1-BKS / B		RROGATE RE	X: Sond	STUDY	
TPH E	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 / B	SD Ba	tch: ¹ Matri	x: Solid		
Units: mg/kg	Date Analyzed: 06/24/09 15:04	SU	RROGATE RE	ECOVERY	STUDY	
ТРН Е	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 / B	LK Ba	tch: ¹ Matri	x: Solid	1	
Units: mg/kg	Date Analyzed: 06/24/09 15:30	SU	RROGATE RE	COVERY	STUDY	
ТРН Е	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 / SMF	ber Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	Date Analyzed: 06/24/09 22:50	SU	RROGATE RE	COVERY	STUDY	
ТРН Е	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1 Chloresterre	Analytes	117	100	117	70.105	
o-Terphenyl		63.4	50.0	117	70-135	
L - L D - 4 - L - H - 762477	Same 226199 002 / SMT	D	50.0	127	70-135	
Lab Batch #: /034//	Sample: 330188-002 / SMP		RROGATE RE	x: Soll	STUDY	
TPH E	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



Project Name: EK Queen Pearce 6"

Work Orders: 336188	,		Project II): 2008-113		
Lab Batch #: 763477	Sample: 336111-001 S / MS	S Bat	tch: ¹ Matri	x: Soil		
Units: mg/kg	Date Analyzed: 06/25/09 00:58	SU	RROGATE RE	COVERY S	STUDY	
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	Analytes	118	99.6	118	70-135	
o-Terphenyl		51.9	49.8	104	70-135	
Lab Batch #: 763477	Sample: 336111-001 SD / N	ASD Ba	tch: 1 Matri	x: Soil		
Units: mg/kg	Date Analyzed: 06/25/09 01:23	SU	RROGATE RE	COVERY S	STUDY	
TPH I	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





Project Name: EK Queen Pearce 6"

Work Order #: 336188							Pro	ject ID: 2	2008-113		
Analyst: ASA	D	ate Prepar	red: 06/26/200	9			Date A	nalyzed: (6/26/2009		
Lab Batch ID: 763727 Sample: 532647-1-	3KS	Batc	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	LICATE	RECOVE	ERY STUD	ŶY	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Begult (F1)	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[D]				Kesuit [F]	[6]				
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	D	ate Prepar	red: 06/24/200	9			Date A	nalyzed: ()	6/24/2009		
Lab Batch ID: 763477 Sample: 532498-1-	3KS	Batc	h #: 1					Matrix: S	Solid		
Units: ^{mg/kg}		BLAN	K /BLANK S	SPIKE / B	BLANK S	PIKE DUPI	LICATE	RECOVE	ERY STUD	Y	
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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 Matrix: Soil QC- Sample ID: 336111-001 S Batch #: 1 BHW Date Prepared: 06/24/2009 Analyst: Date Analyzed: 06/25/2009 Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control TPH By SW8015 Mod Sample Result Spiked Sample RPD Spike Sample Spike Dup. Limits Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] C6-C12 Gasoline Range Hydrocarbons ND 1240 1110 90 1240 1130 91 2 70-135 35 1220 98 98 C12-C28 Diesel Range Hydrocarbons ND 1240 1240 1220 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





Project Name: EK Queen Pearce 6"

Work Order #: 336188

Lab Batch #: 763345			Project I	D: 2008-113	3
Date Analyzed: 06/24/2009 Date Pr	epared: 06/2	24/2009	Analy	st: BEV	
QC- Sample ID: 336189-001 D	Batch #: 1		Matr	ix: Soil	
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	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

Xenco Laboratories

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

The Environmental Lab of Texas	-						126 Od	500 lessa	West a, Te	t I-20 xas	Eas	it i5							Ph Fi	one ax:	: 43	2-56	3-18 3-17	800				
Project Manager:	AN	Ke	1		_	_			_	_			_	Р	rojec	t Na	me:	E	2	G	20	2	20	4	2A	RC	E	6
Company Name BASINE	wi	RE	ima	MAL	_				-						P	roje	ct #:	5	20	20	8-	-1	13	>				
Company Address: 2800 F	LA.	ws	Hur	r											Proj	ect l	.oc:	U	E	ST	D	ET	40	B	35	n	JN	L
City/State/Zip: Loungte	~ A	Un	1 882	te d	_	_			1				_			P	0 #:-	PA	A	-	-)	He	EN	RN	1		_
Telephone No: 575-4	41-	- 2	244	Fax No:		_				_			_	Repo	ort Fo	orma	t:	As	tand	ard			TRF	RP	Ē] NF	DES	5
Sampler Signature:	and	h		e-mail:		_					_	_	_		-	_	_	_		Anal	70	-or	_	_	_	_	_	
(lab use only)	5 (J					1								E	_	-	TCL	P:	Analy		-or:		Τ	T	T	2 hrs	
ORDER #: 336188	1 1	-		-		16	D	Prese	rvation	n & # o	of Con	tainers	5	Matrix	015B	6	Π		d Se	5	1	260					24, 48, 7	-
(Aluo esin qui) # BM FIELD CODE 01 SP#4 62 SP#5	Beginning Depth	Ending Depth	222 N Date Sampled	02F1 DTime Sampled	Field Filtered	X X Total #. of Containers	XX Ice	HNO3	HCI	H2504 NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	GW = Groundwater S=Solidge	TPH: 418.1 0015M 8	TPH: TX 1005 TX 100	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	Metals: As Ao Ba Cd Cr Pb H	Volatiles	Semivolatiles	X X BTEX 9021BI3030 or BTEX 8	RCI	N.O.R.M.			RUSH TAT (Pre-Schedule)	X Standard TAT
																						C.		07				
Relinquished by Date 23/00 Date Date	Time 092 Time	e Se	Received by:										Date	•	Tim	ie ie	Sam VOC Labe Cust Cust Sam	ple C s Fre els on ody s ody s ple H by Sar by Col	e of con eals and mpler	inen Hea taine on o Deli	s Int dspa er(s) conta coole vere nt R	act? ace? ainer er(s) d ep. ?	(s) DHL	F	A A A A A A A	Lo		ar
Relinquished by: Date	Time	e	gnut	Valos	r							ae	123,	109	9:5	25	Tem	perat	ure l	Jpor	Re	ceipt	:		4.	1	°C	

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

Client:	
Date/ Time:	

Lab ID #:

Basin | Plams 06/23/09 9:25 336188

Initials:

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	Yes	No	4.1 °C
#2	Shipping container in good condition?	Yes	No	
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present)
#5	Chain of Custody present?	Yes	No	
#6	Sample instructions complete of Chain of Custody?	Yes	No	
#7	Chain of Custody signed when relinquished/ received?	Yes	No	
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	Yes	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No	
#11	Containers supplied by ELOT?	Yes	No	
#12	Samples in proper container/ bottle?	(Yes)	No	See Below
#13	Samples properly preserved?	Yes	No	See Below
#14	Sample bottles intact?	Yes	No	A set of the set of th
#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:

Date/ Time:

Regarding:

Corrective Action Taken:

Check all that Apply:

See attached e-mail/ fax

Contacted by:

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

> Arixona 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



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



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce 6"

Project ID:2008-113Work 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



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



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.



Project Id: 2008-113 Contact: Jason Henry Project Location: Lea County, NM Project Name: EK Queen Pearce 6"



Date Received in Lab: Mon Jun-29-09 11:46 am

Report Date: 07-JUL-09

Project Manager: Brent Barron, II

	Lab Id:	336676-001	336676-002		
Analysis Pognostad	Field Id:	SP # 6	SP # 7		
Analysis Kequesieu	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:				
	Analyzed:	Jun-30-09 08:43	Jun-30-09 08:43		
	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		
<i></i>	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

XENCO Laboratories



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

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St. Miami Lakes. FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Project Name: EK Queen Pearce 6"

Vork Orders : 336676),		Project II	J: 2008-113		
Lab Batch #: 764550	Sample: 533130-1-BKS / B'	KS Ba	tch: 1 Matri	ix: Solid		
Units: mg/kg	Date Analyzed: 07/02/09 22:40	SU	RROGATE RF	COVERY S	STUDY	
ВТЕУ	K 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		0.0306	0.0300	102	80-120	·
Lab Batch #: 764550	Sample: 533130-1-BSD / B'	SD Ba	tch: 1 Matri	ix: Solid		
Units: mg/kg	Date Analyzed: 07/02/09 23:02	SU	RROGATE RF	COVERY S	STUDY	
ВТЕУ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	Allaryus	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene		0.0317	0.0300	106	80-120	
Lah Batch #: 764550	Sample: 533130-1-BLK / B	I.K Ba	utch: 1 Matri	ix: Solid	<u>. </u>	
Units: mg/kg	Date Analyzed: 07/02/09 23:45	SU	RROGATE RF	ECOVERY S	STUDY	
ВТЕУ	X by EPA 8021B	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		0.0146	0.0300	49	80-120	**
Lab Batch #: 764550	Sample: 336676-001 / SMP	, Ba	tch: 1 Matri	ix: Soil		
Units: mg/kg	Date Analyzed: 07/03/09 03:20	SU	RROGATE RF	ECOVERY 5	STUDY	
ВТЕУ	X 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		0.0809	0.0300	270	80-120	**
Lab Batch #: 764550	Sample: 336622-003 S / MS	s Ba	tch: 1 Matri	ix: Soil		
Units: mg/kg	Date Analyzed: 07/03/09 07:36	SU	RROGATE RF	ECOVERY S	STUDY	
ВТЕУ	X 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		0.0305	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



Project Name: EK Queen Pearce 6"

Vork Orders : 336676	,		Project II): 2008-113		
Lab Batch #: 764550	Sample: 336622-003 SD / N	ASD Ba	tch: 1 Matri	x: Soil	CITTINE	
Units: mg/kg	Date Analyzed: 07/03/09 07:58	SU	RROGATE RE	ECOVERY S	STUDY	
ВТЕХ	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4 Difluorohenzene	Anaryus	0.0293	0.0300	08	80-120	i
4-Bromofluorobenzene		0.0295	0.0300	95	80-120	
Lah Datah #, 764617	Samula, 533185-1-BKS / F		tah. 1 Matri	iw. Solid		
	Sample: 555105-1 2.	NO Da	RROGATE RI	X: Sond	STUDY	
Units: nig/kg	Date Analyzea: 07/00/09 10.41					·
BTEX	K by EPA 8021B Analvtes	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	
Lah Batch #: 764617	Sample: 533185-1-BSD / B	SD Ba	tch: 1 Matri	ix: Solid	<u>.</u>	
Units: mg/kg	Date Analyzed: 07/06/09 11:02	SU	RROGATE RF	ECOVERY ?	STUDY	
ВТЕУ	X by EPA 8021B	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 / P	LK Ba	itch: 1 Matri	ix: Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 07/06/09 11:45	SU	RROGATE RF	ECOVERY ?	STUDY	
ВТЕУ	X 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 / SMF	Ba	tch: 1 Matri	ix: Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 07/06/09 12:07	SU	RROGATE RF	ECOVERY S	STUDY	
ВТЕХ	K 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



Project Name: EK Queen Pearce 6"

Work Orders : 336676	5, Samular 532802 1 BKS / B	WS D.	Project II	D: 2008-113		
Lab Balch #: 704121	Date Analyzed: 06/30/09 19:53	SU SU	JRROGATE RI	ECOVERY	STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		116	100	116	70-135	
o-Terphenyl		50.8	50.0	102	70-135	
Lab Batch #: 764121	Sample: 532892-1-BSD / B	SD Ba	atch: 1 Matri	ix: Solid		
Units: mg/kg	Date Analyzed: 06/30/09 20:19	SU	JRROGATE RI	ECOVERY	STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		114	100	114	70-135	
o-Terphenyl		49.9	50.0	100	70-135	
Lab Batch #: 764121	Sample: 532892-1-BLK / B	BLK Ba	atch: 1 Matri	ix: Solid		
Units: mg/kg	Date Analyzed: 06/30/09 20:45	SU	JRROGATE RI	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	A many tes	98.6	100	99	70-135	
o-Terphenyl		53.0	50.0	106	70-135	
Lah Batch #• 764121	Sample: 336676-001 / SMF			iv Soil		
Units: mg/kg	Date Analyzed: 06/30/09 21:11	SU	JRROGATE RI	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1.011	Analytes					
1-Uniorooctane		113 56 1	100	113	70-135	
	a	30.1	30.0		/0-133	
Lab Batch #: 764121	Sample: 330676-0027 SMF		RROGATE RI	IX: SOIL	STUDY	
Units: mg/kg	Date Analyzed: 06/30/09 21:36	50			31001	
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



Project Name: EK Queen Pearce 6"

Work Orders : 336676,		Project ID: 2008-113							
Lab Batch #: 764121	Sample: 336676-001 D / M	D Batch: 1 Matrix: Soil							
Units: mg/kg	Date Analyzed: 06/30/09 23:19	SU	RROGATE RI	ECOVERY S	STUDY				
ТРН В	y 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





Project Name: EK Queen Pearce 6"

Work Order #: 336676							Pro	ject ID: 2	2008-113		
Analyst: ASA	Date Prepared: 07/01/2009 Date Analyzed: 07/02/2009										
Lab Batch ID: 764550 Sample: 533130-1-1	3KS Batch #: 1 Matrix: Solid										
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	LICATE	RECOVI	ERY STUD	Y	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0534	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 Vylene	ND	0.1000	0.0710	70	0.1	0.0000	00	20	71 122	25	
0-Ayiciic	ND	0.1000	0.0719	12	0.1	0.0880	00	20	/1-135		
Analyst: ASA	Da	ate Prepar	ed: 07/06/200)9	0.1	0.0880	Date A	nalyzed: ()7/06/2009	- 33	
Analyst: ASA Lab Batch ID: 764617 Sample: 533185-1-1	Da Da	ate Prepar Batcl	ed: 07/06/200)9	0.1	0.0880	Date A	nalyzed: (Matrix: S)7/06/2009 Solid		
Analyst: ASA Lab Batch ID: 764617 Sample: 533185-1-1 Units: mg/kg	Da Da BKS	ate Prepar Batcl BLAN	ed: 07/06/200 n #: 1 K /BLANK S)9 SPIKE / F	0.1 BLANK S	PIKE DUPI	Date A	nalyzed: (Matrix: S RECOVI)7/06/2009 Solid ERY STUD	Y Y	
Analyst: ASA Lab Batch ID: 764617 Sample: 533185-1-1 Units: mg/kg BTEX by EPA 8021B Analytes	Blank Sample Result [A]	ate Prepar Batcl BLAN Spike Added [B]	ed: 07/06/200 n #: 1 K /BLANK S Blank Spike Result [C])9 SPIKE / E Blank Spike %R [D]	BLANK S Spike Added [E]	Blank Spike Duplicate Result [F]	Date A Date A LICATE Blk. Spk Dup. %R [G]	nalyzed: (Matrix: S RECOVI RPD %	07/06/2009 Solid ERY STUD Control Limits %R	Control Limits %RPD	Flag
Analyst: ASA Lab Batch ID: 764617 Sample: 533185-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene	Blank Sample Result [A]	ate Prepar Batcl BLAN Spike Added [B]	ed: 07/06/200 n #: 1 K /BLANK S Blank Spike Result [C])9 SPIKE / E Blank Spike %R [D]	BLANK S Spike Added [E]	Blank Spike Duplicate Result [F]	Date A Date A LICATE Blk. Spk Dup. %R [G]	20 nalyzed: (Matrix: S RECOVI RPD %	07/06/2009 Solid ERY STUD Control Limits %R	Y Control Limits %RPD	Flag
Analyst: ASA Lab Batch ID: 764617 Sample: 533185-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene	Blank Sample Result [A] ND ND ND	ate Prepar Batcl BLAN Spike Added [B] 0.1000	ed: 07/06/200 n #: 1 K /BLANK S Blank Spike Result [C] 0.0905 0.0872)9 SPIKE / E Blank Spike %R [D] 91 87	0.1 BLANK S Spike Added [E] 0.1	Blank Spike Duplicate Result [F]	Date A Date A LICATE Blk. Spk Dup. %R [G] 94	20 nalyzed: (Matrix: S RECOVI %	71-133 07/06/2009 Solid ERY STUD Control Limits %R 70-130 70-130	SS VY Control Limits %RPD 35 35	Flag
Analyst: ASA Lab Batch ID: 764617 Sample: 533185-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene	Blank Sample Result [A] ND ND ND ND ND	0.1000 ate Prepar Batcl BLAN Spike Added [B] 0.1000 0.1000 0.1000	ed: 07/06/200 n #: 1 K /BLANK S Blank Spike Result [C] 0.0905 0.0872 0.0978	J9 SPIKE / E Blank Spike %R [D] 91 87 98	0.1 Spike Added [E] 0.1 0.1 0.1	Blank Spike Duplicate Result [F] 0.0940 0.0910 0.1017	oo Date A LICATE Blk. Spk Dup. %R [G] 94 91 102	20 nalyzed: (Matrix: S RECOVI % 4 4 4 4	71-133 07/06/2009 Solid ERY STUD Control Limits %R 70-130 70-130 71-129	Y Control Limits %RPD 35 35 35 35	Flag
Analyst: ASA Lab Batch ID: 764617 Sample: 533185-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene m,p-Xylenes	Blank Sample Result [A] ND ND ND ND ND	0.1000 ate Prepar Batcl BLAN Spike Added [B] 0.1000 0.1000 0.1000 0.2000	ed: 07/06/200 n #: 1 K /BLANK S Blank Spike Result [C] 0.0905 0.0872 0.0978 0.2006	72 39 SPIKE / E Blank Spike %R [D] 91 87 98 100	0.1 BLANK S Spike Added [E] 0.1 0.1 0.1 0.2	PIKE DUPI Blank Spike Duplicate Result [F] 0.0940 0.0910 0.1017 0.2085	00 Date A Date A Dup. %R [G] 94 91 102 104	Analyzed: (Matrix: S RECOVI % 4 4 4 4 4 4	71-133 07/06/2009 Solid ERY STUD Limits %R 70-130 70-130 71-129 70-135	S3 Y Control Limits %RPD 35 35 35 35 35 35 35	Flag

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 6"

Work Order #: 336676								Pro	ject ID: 2	2008-113		
Analyst: BHW		Da	ate Prepar	red: 06/30/200	9			Date A	nalyzed: (6/30/2009		
Lab Batch ID: 764121	Sample: 532892-1-B	KS	Batcl	h#: 1					Matrix: S	Solid		
Units: mg/kg			BLAN	K /BLANK S	SPIKE / B	BLANK S	PIKE DUPL	ICATE	RECOVE	ERY STUD	Y	
TPH By SW80	15 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes			[B]	[C]	[D]	[E]	Result [F]	[G]				
C6-C12 Gasoline Range Hydroca	arbons	ND	1000	846	85	1000	832	83	2	70-135	35	
C12-C28 Diesel Range Hydrocar	bons	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 II	D: 2008-1	13			
Lab Batch ID: 764550 Q Date Analyzed: 07/03/2009 1 Reporting Units: mg/kg 1	C- Sample ID: Date Prepared:	336622- 07/01/20	003 S 009 ATRIX SPIK	Ba An F / MAT	tch #: alyst: RIX SPI	1 Matrix ASA KE DUPLICA	: Soil	OVERV	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Benzene	ND	0.1006	0.0873	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	Х
m,p-Xylenes	ND	0.2013	0.0793	39	0.2013	0.0840	42	6	70-135	35	Х
o-Xylene	ND	0.1006	0.0538	53	0.1006	0.0526	52	2	71-133	35	Х

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

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				Project I	D: 2008-113	3
Date Analyzed: 06/30/2009	Date Pro	epared: 06/3	80/2009	Analy	st: BEV	
QC- Sample ID: 336431-004 D	В	atch #: 1		Matr	ix: Soil	
Reporting Units: %		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte			[B]			
Percent Moisture		1.04	7.97	154	20	F
Lah Batch #: 764121						
Lab Daten n.						
Date Analyzed: 06/30/2009	Date Pro	epared: 06/3	80/2009	Analy	st: BHW	
Date Analyzed: 06/30/2009 QC- Sample ID: 336676-001 D	Date Pro B	epared: 06/3 atch #: 1	80/2009	Analy Matr	st: BHW ix: Soil	
Date Analyzed: 06/30/2009 QC- Sample ID: 336676-001 D Reporting Units: mg/kg	Date Pro B	epared: 06/3 atch #: 1 SAMPLE	80/2009	Analy Matr DUPLIC	st: BHW ix: Soil ATE REC	OVERY
Date Analyzed: 06/30/2009 QC- Sample ID: 336676-001 D Reporting Units: mg/kg	Date Pro B	epared: 06/3 atch #: 1 SAMPLE / Parent Sample Result [A]	30/2009 / SAMPLE Sample Duplicate Result	Analy Matr DUPLIC RPD	st: BHW ix: Soil ATE REC Control Limits %RPD	OVERY Flag
Date Analyzed: 06/30/2009 QC- Sample ID: 336676-001 D Reporting Units: mg/kg TPH By SW8015 Mod Analyte	Date Pro B	epared: 06/3 atch #: 1 SAMPLE Parent Sample Result [A]	30/2009 / SAMPLE Sample Duplicate Result [B]	Analy Matr DUPLIC RPD	st: BHW ix: Soil ATE REC Control Limits %RPD	OVERY Flag
Date Analyzed: 06/30/2009 QC- Sample ID: 336676-001 D Reporting Units: mg/kg TPH By SW8015 Mod Analyte C6-C12 Gasoline Range Hydrocarbons	Date Pro B	epared: 06/3 atch #: 1 SAMPLE / Parent Sample Result [A] 362	30/2009 / SAMPLE Sample Duplicate Result [B] 370	Analy Matr DUPLIC RPD 2	st: BHW ix: Soil ATE REC Control Limits %RPD 35	OVERY Flag
Date Analyzed: 06/30/2009 QC- Sample ID: 336676-001 D Reporting Units: mg/kg TPH By SW8015 Mod Analyte C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons	Date Pre B	epared: 06/3 atch #: 1 SAMPLE / Parent Sample Result [A] 362 2360	30/2009 / SAMPLE Sample Duplicate Result [B] 370 2400	Analy Matr DUPLIC RPD 2 2	st: BHW ix: Soil ATE REC Control Limits %RPD 35 35	OVERY Flag
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: Ca	mille Bryant				in and	_				2	_				_	Pr	ojec	t Na	me:	EK	Qu	een	Pea	arce	6"	-	_	_		
	Company Name Ba	sin Environmenatal C	onsult	ing, LL	c	and a					-							P	rojec	:t #:	200	8-1	13								-
	Company Address: P.O	D. Box 381																Proje	ect l	.oc:	Lea	Cou	unty,	NM							
	City/State/Zip: Lo	vington, NM 88260																	P	0#:	PAA	- J.	Hen	iry							
	Telephone No:	5)605-7210	2		~ l	Fax No:		(50	15) 3	96-1	429	120	in-	COD	cult	ling	Repor	t Fo	rma	t	x	Stan	dard	1	C	TR	RP	[] NF	PDE	5
	Sampler Signature.		Qu	Ju	my	e-mail.			JIY	ant	lugi	145	011-0	011	Sun	ung.	com		-			-	Ana	lyze	For:	-	-	_		T	1
(lab use	eonly) 221	676												1				\vdash	-	-	TC TOT.	LP: AL:	+	+	X	-				72 hrs	
ORDE (Aluo e	R#: 204		epth	5	Pa	eq		ainers	Pr	eser	vatio	n &	# of	Conta	ainer	vater SL=Sludg	ater S-Soli/Sol BY	8015M 8015B	TX 1006), Na, K)	I, Alkalinity)	C	a Cd Cr Pb Hg Se		30. dr BTEX 8260					e-Schedule) 24, 48,	T 4 DAY
LAB # (lab us	FIELD C	ODE	Beginning D	Ending Dept	Date Sampl	Time Sampl	Field Filtered	Total #. of Conta	Ice	HNO ₃	HCI	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None Other / Snacky	DW=Drinking v	GW = Groundw NP = Non-Potabl	TPH: 418.1	TPH: TX 1005	Cations (Ca, Mg	Anions (CI, SO4	SAR / ESP / CE	Metals: As Ag B	Volaues Semivolatiles	BTEX 8021B/50	RCI	N.O.R.M.			RUSH TAT (Pr	Standard TA
01	SP #	6			25-Jun-09	1330		1	х					-	-	5	SOIL	X			-	-	-		X			-			X
02	SP #	7	-		25-Jun-09	1345		1	X	_		-	-	+	+	5	SOIL	X	-	-	-	+	+	+	X		+	+	+	\square	X
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Special	Instructions:												-							Lab Sam VOC	ple (s Fr	Cont ee o	Com aine of He	ment rs Int adsp	ts: tact? ace?			33		NN	
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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client:	Basin Env	Plains
Date/ Time:	6.29.09	11:46
Lab ID # :	336	676
Initials:	a	L

Sample Receipt Checklist

		-		Clier	nt Initials
#1	Temperature of container/ cooler?	Yes	No	3.1 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present)	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	(Yes)	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	(Yes)	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20	VOC samples have zero headspace?	(Yes)	No	Not Applicable	-

Variance Documentation

Contact:

Contacted by:

Date/ Time:

Regarding:

Corrective Action Taken:

Check all that Apply:

See attached e-mail/ fax

Client understands and would like to proceed with analysis

Cooling process had begun shortly after sampling event

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

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 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



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: E.K. Queen 6" Pearce

Project ID:2008-113Work 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



Project Id: 2008-113 Contact: Jason Henry Project Location: Lea Co., NM Project Name: E.K. Queen 6" Pearce



Date Received in Lab: Thu Jul-02-09 04:34 pm

Report Date: 09-JUL-09

Project Manager: Brent Barron, II

	Lab Id:	337166-001	337166-002		
Analysis Requested	Field Id:	Over Burden-2	SP # 8		
Analysis Kequesieu	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:				
	Analyzed:	Jul-06-09 12:45	Jul-06-09 12:45		
	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	C12-C28 Diesel Range Hydrocarbons		2620 16.1		
C28-C35 Oil Range Hydrocarbons	C28-C35 Oil Range Hydrocarbons		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

XENCO Laboratories



- 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	(813) 620-2000	(813) 620-2033
5757 NW 158th St. Miami Lakes. FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Project Name: E.K. Queen 6" Pearce

Work Orders : 337166	, Sompley 533308-1-BKS / B	KS Do	Project II	D: 2008-113							
Units: mg/kg	Date Analyzed: 07/08/09 08:37	SU	RROGATE RI	ECOVERY	STUDY						
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1.1.517	Analytes										
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 / B	SD Ba	tch: 1 Matri	x: Solid							
Units: mg/kg	Date Analyzed: 07/08/09 08:59	SURROGATE RECOVERY STUDY									
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1,4-Difluorobenzene		0.0303	0.0300	101	80-120						
4-Bromofluorobenzene		0.0380	0.0300	127	80-120	*					
Lab Batch #: 764887	Sample: 533308-1-BLK / B	BLK Ba	tch: 1 Matri	x: Solid	,,						
Units: mg/kg	Date Analyzed: 07/08/09 09:42	SU	RROGATE RI	ECOVERY	STUDY						
BTE	A polytos	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1.4 Difluorohonzono	Analytes	0.0271	0.0200	00	80.120						
4-Bromofluorobenzene		0.0271	0.0300	90 55	80-120	*					
Lah Datah # 764897	Secondary 227166 001 / SMT) B a	taha 1 Matri	en Soil	00 120						
	Sample: 55/100-001/ SMF	' Batch: I Matrix: Soil									
BTEX	X 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 / SMF	b Ba	tch: 1 Matri	x: Soil							
Units: mg/kg	Date Analyzed: 07/08/09 13:53	SU	RROGATE RI	ECOVERY	STUDY						
BTE	X 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



Project Name: E.K. Queen 6" Pearce

Vork Orders : 337166	,	Project ID: 2008-113									
Lab Batch #: 764887	Sample: 337016-001 S / MS	S Bat	tch: 1 Matri	x: Soil							
Units: mg/kg	Date Analyzed: 07/08/09 20:21	SU	RROGATE RE	COVERY S	STUDY						
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			נען		ļ					
1,4-Difluorobenzene		0.0340	0.0300	113	80-120	<u> </u>					
4-Bromofluorobenzene		0.0404	0.0300	135	80-120	*					
Lab Batch #: 764887	Sample: 337016-001 SD / M	MSD Batch: 1 Matrix: Soil									
Units: mg/kg	Date Analyzed: 07/08/09 20:43	SURROGATE RECOVERY STUDY									
BTEX	K 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 / B	KS Ba	tch: ¹ Matri	x: Solid	<u> </u>						
Units: mg/kg	Date Analyzed: 07/07/09 11:21	SU	RROGATE RE	ECOVERY	STUDY						
ТРН І	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 / B	SD Ba	tch: 1 Matri	x: Solid	<u>, </u>						
Units: mg/kg	Date Analyzed: 07/07/09 11:46	SURROGATE RECOVERY STUDY									
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[10]							
1-Chiorooctane		107	100	107	70-135	·					
o-Terpnenyi		41.4	50.0	83	70-135						
Lab Batch #: 764775	Sample: 533254-1-BLK / B	LK Ba	tch: 1 Matri	x: Solid							
Units: mg/kg	Date Analyzed: 07/07/09 12:12	SU	RROGATE RE	COVERY S	STUDY						
ТРН І	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	 I					
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



Project Name: E.K. Queen 6" Pearce

Work Orders : 337166	j,	Project ID: 2008-113									
Lab Batch #: 764775	Sample: 337166-001 / SMP	Bat	tch: 1 Matri	ix: Soil							
Units: mg/kg	Date Analyzed: 07/07/09 13:05	SU	RROGATE RE	ECOVERY	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	Baí	tch: ¹ Matri	ix: Soil	<u>.</u>	· · · · · · · · ·					
Units: mg/kg	Date Analyzed: 07/07/09 13:31	SURROGATE RECOVERY STUDY									
TPH 1	By SW8015 Mod	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	S Bat	tch: 1 Matri	ix: Soil	<u>. </u>						
Units: mg/kg	Date Analyzed: 07/07/09 21:26	SU	RROGATE RI	ECOVERY	STUDY						
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane	Anaryus	129	100	129	70-135						
o-Terphenyl		51.9	50.0	104	70-135	i					
Lab Batch #: 764775	Sample: 337224-001 SD / N	ASD Bat	tch: 1 Matri	ix: Soil	<u> </u>						
Units: mg/kg	Date Analyzed: 07/07/09 21:51	SU	RROGATE RI	ECOVERY :	STUDY						
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane		129	99.9	129	70-135	[
o-Terphenyl		47.5	50.0	95	70-135	Í					

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B





Project Name: E.K. Queen 6" Pearce

Work Order #: 337166					Project ID: 2008-113									
Analyst: BRB	Da	ate Prepar	red: 07/06/200	9			Date A	nalyzed: ()	7/08/2009					
Lab Batch ID: 764887 Sample: 533308-1-1	BKS	Batc	h #: 1					Matrix: S	Solid					
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	ICATE 1	RECOVE	COVERY STUDY					
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]							
Benzene	ND	0.1000	0.0885	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	Da	ate Prepar	ed: 07/07/200	Date Analyzed: 07/07/2009										
Lab Batch ID: 764775 Sample: 533254-1-1	BKS Batch #: 1 Matrix: Solid													
Units: mg/kg		BLAN	K /BLANK S	SPIKE / B	BLANK S	PIKE DUPI	JCATE]	RECOVE	ERY STUD	Y				
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag			
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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 II	D: 2008-1	13			
Lab Batch ID: 764887 Q Date Analyzed: 07/08/2009 D	C- Sample ID: Date Prepared:	337016 07/06/2	-001 S 009	Ba An	tch #: alyst:	1 Matri BRB	x: Soil				
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup. % P	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	[B]		[D]	[E]	Kesutt [F]	[G]	70	701		
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 Q	C- Sample ID:	337224	-001 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 07/07/2009	Date Prepared:	07/07/2	009	An	alyst:	BHW					
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	729	1130	1840	98	1130	1870	101	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	3940	1130	5230	114	1130	5440	133	4	70-135	35	

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ 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: E.K. Queen 6" Pearce

Work Order #: 337166

Lab Batch #: 764625			Project I	D: 2008-113	3			
Date Analyzed: 07/06/2009 Date Pr	epared: 07/0	6/2009	Analy	st: LATCOF	ł			
QC- Sample ID: 337166-001 D	Batch #: 1	Matrix: Soil						
Reporting Units: %	SAMPLE / SAMPLE DUPLICATE RECOVED							
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag			
Analyte		[B]						
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

Xenco Laboratories The Environmental Lab of Texas Project Manager:							12 00	ecoo dess	We sa, T	CH st I-2 Texas	AIN 20 E s 79	OF ast 765	= cu	STOI	DY R	DECO	ORL	D AN		NAL Pho Fa	YSI one: IX:	43: 43:	EQI 2-56 2-56	UES 3-18 3-17	T 100 13		PE	AB	Œ
Company Name BASIN Company Address: 2000 P City/State/Zip: DUINSTR Telephone No: Sampler Signature:	EAR	Nin Aug	ironn 5 Hu M 88 4	ENT JA JZ60 Fax No: e-mail:	1 4/	10	K	1	3	76	2	14	20	F	Repor	Proje t For	ect L P(:t #: _ .oc: _ D #: _ t:	I f	At Standa	+ (+ - ard	Ze F	-1 5 0r:	13 K) N He	1	ay] NF	DES	
(lab use only)		1					_									F	_		TCL TOTA	.P: AL:	F		X					1, 72 hrs	
Index #. John () de (Aluo estimate of the second of the	Beginning Depth	Ending Depth	Page Sampled	Time Sampled	Field Filtered	Total #. of Containers	⁸⁸ XX	Presi	P	H2SO4	HOR	Cos Soo	None None	DWE Dinking Water St=Studge	NP=Non-Potable Specify Other	XX TPH: 418.1 SQ15M 8015F	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	X BITE 8021BI5030 or BTEX 8260	RCI	N.O.R.M.			RUSH TAT (Pre-Schedule) 24, 4	X Standard TAT
Special Instructions: Relinquished by: Date Relinquished by: Date Relinquished by:	Tim 1763 Tim Tim	ne 34 ne	Received by: Received by: Received by ELC	DT: {		n	1						1	Date Date	1	Tim	e e 3.4	Lab Sam VOC Labo Cus Sam Tem	orato ple (Cs Fri tody tody tody soby Cc cy tody ppera	Conta ee of n conta seals seals Hand mpler δτ ture I	omm iners Head laine on c Delivi /Clie	tents s Inta dspa tr(s) conta coole veren nt Re UP	s: act? ince? tr(s) d ep. ? S s ceipt	(s) DHL	. F	C DE REKEN	A A A A A A A A A A A A A A A A A A A	ZZZZZZ Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	ar

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

Client:	Basin Env	Plains
Date/ Time:	7.2.09	10:34
Lab ID # :	33	1166
Initials:	1	al

Sample Receipt Checklist

				Client Initial
#1	Temperature of container/ cooler?	Yes	No	7.6 °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	Contraction (Sector)
#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 aL

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



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: E.K. Queen 6" Pearce

Project ID:2008-113Work 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



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

	Lab Id:	337283-001	337283-002		
Analysis Requested	Field Id:	Over Burden - 1	Over Burden - 3		
Analysis Requested	Depth:				
	Matrix:	SOIL	SOIL		
	Sampled:	Jul-06-09 15:00	Jul-06-09 15:05		
BTEX by EPA 8021B	Extracted:	Jul-09-09 17:00	Jul-09-09 17:00		
č	Analyzed:	Jul-10-09 10:47	Jul-10-09 11:09		
	Units/RL:	mg/kg RL	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:	Jul-07-09 16:00	Jul-07-09 16:00		
	Units/RL:	% RL	% RL		
Percent Moisture		9.13 1.00	9.34 1.00		
TPH By SW8015 Mod	Extracted:	Jul-08-09 13:39	Jul-08-09 13:39		
	Analyzed:	Jul-08-09 18:33	Jul-08-09 18:59		
	Units/RL:	mg/kg RL	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

XENCO Laboratories



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

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Project Name: E.K. Queen 6" Pearce

Nork Orders : 337283	',		Project II	D: 2008-113		
Lab Batch #: 765081	Sample: 533433-1-BKS / BI	KS Ba	atch: 1 Matri	ix: Solid		
Units: mg/kg	Date Analyzed: 07/10/09 09:22	SU	JRROGATE RI	ECOVERY S	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4 Diffuerohanzana	Allalytes	0.0204	0.0200	101	90.120	
1,4-Diffuorobenzene		0.0366	0.0300	101	80-120	*
	~	0.0500	0.0500	122	00-120	
Lab Batch #: 765081	Sample: 533433-1-BSD / BS	SD Ba	atch: 1 Matri	ix: Solid		
Units: mg/kg	Date Analyzed: 07/10/09 09:43	ວເ	JRKUGAIE KI	COVERY :		
BTEX	K by EPA 8021B Analvtes	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 / B	LK Ba	atch: <u>1</u> Matri	ix: Solid	·	
Units: mg/kg	Date Analyzed: 07/10/09 10:26	SU	JRROGATE RI	ECOVERY S	STUDY	
BTEX	X by EPA 8021B	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	Ba	atch: 1 Matri	ix: Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 07/10/09 10:47	SU	JRROGATE RI	ECOVERY S	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene		0.0276	0.0300	92	80-120	
4-Bromofluorobenzene		0.0190	0.0300	63	80-120	*
Lah Batch #: 765081	Sample: 337283-002 / SMP	Ba	atch: 1 Matri	ix: Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 07/10/09 11:09	SU	JRROGATE RI	ECOVERY S	STUDY	
BTEX	K 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



Project Name: E.K. Queen 6" Pearce

Vork Orders: 337283	',		Project II): 2008-113		
Lab Batch #: 764867	Sample: 533304-1-BKS / B	KS Ba	tch: 1 Matri	x: Solid		
Units: mg/kg	Date Analyzed: 07/08/09 15:03	SU	RROGATE RE	COVERY S	STUDY	
ТРН Ј	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes		, <u> </u>	נען		i
1-Chlorooctane		121	100	121	70-135	<u>.</u>
o-Terphenyl		53.0	50.0	106	70-135	
Lab Batch #: 764867	Sample: 533304-1-BSD / B	SD Ba	tch: 1 Matri	ix: Solid		
Units: mg/kg	Date Analyzed: 07/08/09 15:30	SU	RROGATE RF	COVERY	STUDY	
ТРН І	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 / B	LK Ba	tch: 1 Matri	ix: Solid	<u>.</u>	
Units: mg/kg	Date Analyzed: 07/08/09 15:56	SU	RROGATE RF	ECOVERY S	STUDY	
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1 Chlaracatana	Allalytes	112	100	112	70.125	
o-Terphenyl		55.5	50.0	112	70-135	
L - L D _4_L 4. 76/867	Samelar 227283 001 / SMI	D D C		Soil	10-135	
	Sample: 357203-0017 Sivii Data Analyzad: 07/08/00 18:33		RROGATE RI	X: SON	STUDY	
ТРН Ј	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes		·'	[D]		ı
1-Chlorooctane		107	99.9	107	70-135	·
o-Terphenyl		55.8	50.0	112	70-135	
Lab Batch #: 764867	Sample: 337283-002 / SMP	, Ba	tch: 1 Matri	ix: Soil		
Units: mg/kg	Date Analyzed: 07/08/09 18:59	SU	RROGATE RF	COVERY	STUDY	
ТРН І	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



Project Name: E.K. Queen 6" Pearce

Work Orders : 337283	,		Project II): 2008-113		
Lab Batch #: 764867	Sample: 337279-001 S / MS	S Bat	tch: ¹ Matri	x: Soil		
Units: mg/kg	Date Analyzed: 07/08/09 19:25	SU	RROGATE RE	ECOVERY S	STUDY	
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		126	100	126	70-135	
o-Terphenyl		54.7	50.0	109	70-135	
Lab Batch #: 764867	Sample: 337279-001 SD / M	ASD Ba	tch: ¹ Matri	x: Soil		
Units: mg/kg	Date Analyzed: 07/08/09 19:51	SU	RROGATE RE	ECOVERY S	STUDY	
ТРН І	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





Project Name: E.K. Queen 6" Pearce

Work Order #: 337283	D	ate Prenar	ed: 07/09/200	9			Proj Date A	ject ID: 2 nalvzed: (2008-113					
Lab Batch ID: 765081 Sample: 533433-1-E	SKS	Batcl	h#: 1			Matrix: Solid								
Units: mg/kg		BLAN	K /BLANK S	PIKE / B	BLANK S	PIKE DUPI	LICATE	RECOVE	ERY STUD	Y				
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Analytes		[B]	[C]	נשן	[E]	Result [F]	[G]							
Benzene	ND	0.1000	0.0787	79	0.1	0.0802	80	2	70-130	35				
Toluene	ND	0.1000	0.0751	75	0.1	0.0766	77	2	70-130	35				
Ethylbenzene	ND	0.1000	0.0845	85	0.1	0.0859	86	2	71-129	35				
m,p-Xylenes	ND	0.2000	0.1724	86	0.2	0.1751	88	2	70-135	35				
o-Xylene	ND	0.1000	0.0813	81	0.1	0.0827	83	2	71-133	35				
Analyst: BHW	Da	ate Prepar	ed: 07/08/200	9			Date A	nalyzed: ()	7/08/2009					
Lab Batch ID: 764867 Sample: 533304-1-E	KS	Batcl	h #: 1					Matrix: S	olid					
Units: ^{mg/kg}		BLAN	K /BLANK S	PIKE / E	BLANK S	PIKE DUPI	LICATE 1	RECOVE	ERY STUD	Y				
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag			
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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 Matrix: Soil QC- Sample ID: 337279-001 S Batch #: 1 Date Prepared: 07/08/2009 Analyst: BHW Date Analyzed: 07/08/2009 Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control TPH By SW8015 Mod Sample Result Spiked Sample RPD Spike Sample Spike Dup. Limits Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] C6-C12 Gasoline Range Hydrocarbons 23.7 1030 872 82 1020 891 85 2 70-135 35 89 92 2 C12-C28 Diesel Range Hydrocarbons 126 1030 1040 1020 1060 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: E.K. Queen 6" Pearce

Work Order #: 337283

Lab Batch #: 764742			Project I	D: 2008-113	3
Date Analyzed: 07/07/2009 Date Pr	epared: 07/0	07/2009	Analy	st: BEV	
QC- Sample ID: 337200-001 D H	Batch #: 1		Matr	ix: Soil	
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	4.27	3.58	18	20	

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

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or</td><td></td><td></td><td></td><td></td><td>(Pre-Sc)</td><td>AT</td></tr><tr><td># (lab</td><td></td><td>inning</td><td>ing De</td><td>e Sam</td><td>le Sam</td><td>Filtered</td><td>#. of Co</td><td></td><td>3</td><td></td><td>201</td><td>H 02</td><td>202</td><td>er (Spec</td><td>brinking M Groundw</td><td>on-Potab</td><td>418.1</td><td>TX 10</td><td>ns (Ca,</td><td>1 ESP /</td><td>Is: As A</td><td>iles</td><td>volatiles</td><td>8021B</td><td></td><td>R.M.</td><td></td><td></td><td>SH TAT</td><td>Idard T</td></tr><tr><td>LAB</td><td>FIELD CODE</td><td>Beg</td><td>End</td><td>Dat</td><td>E .</td><td>Field</td><td>Total</td><td>loe</td><td>HNO</td><td>HCI</td><td>H25</td><td>Nave</td><td>Non</td><td>Othe</td><td>DW=DW=</td><td>N=dN</td><td>Hdi</td><td>HdT</td><td>Catio</td><td>SAP</td><td>Meta</td><td>Volat</td><td>Semi</td><td>BTE</td><td>RCI</td><td>N.O.</td><td>-</td><td>-</td><td>RUS</td><td>Star</td></tr><tr><td></td><td>WERBURDEN-1</td><td>-</td><td>-</td><td>710</td><td>1500</td><td></td><td>1</td><td>X</td><td>-</td><td>-</td><td>-</td><td>+</td><td>-</td><td>-</td><td>-</td><td>-</td><td>X</td><td>-</td><td>-</td><td>+</td><td>+</td><td>-</td><td>-</td><td>X</td><td>-</td><td>-</td><td>+</td><td>+</td><td>H</td><td>X</td></tr><tr><td></td><td>CUERDURDEN 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I</td><td>Instructions:</td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td></td><td></td><td>-</td><td>L</td><td>.abo</td><td>rato</td><td>ry Conta</td><td>omm</td><td>ent</td><td>s:</td><td>1</td><td>2-</td><td>400</td><td>59</td><td>·CN</td><td>×</td></tr><tr><td>Relinquist</td><td>hed by Q Q Date</td><td>Tir</td><td>me</td><td>Received by:</td><td>-</td><td>_</td><td></td><td></td><td>_</td><td>1</td><td>2</td><td></td><td>-</td><td>Da</td><td>te</td><td></td><td>Time</td><td></td><td>/OCs</td><td>s Fre</td><td>e of</td><td>Head</td><td>dspa r(s)</td><td>ice?</td><td></td><td></td><td>2 BC</td><td>5</td><td>NN</td><td></td></tr><tr><td>CY</td><td>1- Hung 7709</td><td>101</td><td>5</td><td></td><td>1</td><td></td><td></td><td></td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>00</td><td>Custo</td><td>ody s</td><td>eals</td><td>on c</td><td>onta</td><td>ainer 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Environmental Lab of Texas Variance/ Corrective Action Report- Sample Log-In

Client:	Basin / Plauns							
Date/ Time:	21:31 POLEOLEO							
Lab ID # :	337293							
Initials:	anist							

Sample Receipt Checklist

				CII	ent initials
#1	Temperature of container/ cooler?	Yes	No	0.4 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	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 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 (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

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



06-OCT-09



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

Reference: XENCO Report No: **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 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America



Sample Cross Reference 346220



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



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen 6-Inch Pearce

Project ID:2008-113Work 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.



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



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 i

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 Name: EK Queen 6-Inch Pearce



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

Report Date: 06-OCT-09

								Project Ma	nager:	Brent Barron	, II		
	Lab Id:	346220-	001	346220-	002	346220-	003	346220-	004	346220-	005	346220-0	006
A a aluaia De au este d	Field Id:	SVE Deep #	2 @ 35'	SVE Deep #	2 @ 43'	SVE Shallow	'A" @ 20'	SVE Shallow	'A" @ 25'	SVE Shallow '	'A" @ 30'	SVE Deep # :	5 @ 35'
Analysis Kequestea	Depth:												
	Matrix:	SOIL	,	SOIL	,	SOIL	,	SOIL		SOIL		SOIL	,
	Sampled:	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
BTEX by EPA 8021B	Extracted:	Sep-29-09	15:50	Sep-29-09	15:50	Oct-05-09	11:34	Sep-30-09	10:00	Sep-30-09	10:00	Sep-29-09	15:50
	Analyzed:	Sep-29-09	23:07	Sep-29-09	23:27	Oct-05-09	13:58	Sep-30-09	17:45	Sep-30-09	18:06	Sep-30-09	00:47
	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	0.0505	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	Extracted:	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
	Analyzed:	Sep-30-09	14:59	Sep-30-09	15:26	Sep-30-09	15:53	Sep-30-09	16:20	Sep-30-09	16:46	Sep-30-09	17:13
	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	15.3	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

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.

Brent Barron, II Odessa Laboratory Manager



Certificate of Analysis Summary 346220

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen 6-Inch Pearce



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

Report Date: 06-OCT-09

								Project Mar	nager:	Brent Barron,	II		
	Lab Id:	346220-0	01	346220-0	02	346220-0	03	346220-0	04	346220-0	05	346220-00	06
Analysis Pogyostod	Field Id:	SVE Deep # 2	@ 35'	SVE Deep # 2	@ 43'	SVE Shallow "A	A" @ 20'	SVE Shallow "A	" @ 25'	SVE Shallow "A	A" @ 30'	SVE Deep # 5	@ 35'
Analysis Kequestea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-24-09 1	4:30	Sep-24-09 1	4:45	Sep-24-09 1	5:50	Sep-24-09 1	6:10	Sep-24-09 1	6:40	Sep-25-09 0	8:10
Percent Moisture	Extracted:												
	Analyzed:	Sep-29-09 0	9:07	Sep-29-09 0	9:07	Sep-29-09 0	9:07	Sep-29-09 0	9:07	Sep-29-09 (9:15	Sep-29-09 0	9:15
	Units/RL:	%	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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Date Received in Lab: Mon Sep-28-09 09:35 am

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								Project Ma	nager:	Brent Barron	, II		
	Lab Id:	346220-0	07	346220-0	008	346220-0	009	346220-	010	346220-	011	346220-0)12
Anghaia Deguasted	Field Id:	SVE Deep # 5	@ 40'	SVE Deep #	l @ 35'	SVE Deep #	1@40'	SVE Shallow	'B" @ 20'	SVE Shallow '	'B" @ 25'	SVE Shallow "	B" @ 30'
Analysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL		SOIL	,	SOIL		SOIL		SOIL	,
	Sampled:	Sep-25-09 ()8:40	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	Extracted:	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
	Analyzed:	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
	Units/RL:	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	Extracted:												
	Analyzed:	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
	Units/RL:	%	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	Extracted:	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
	Analyzed:	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
	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	15.1	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. 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.

Brent Barron, II Odessa Laboratory Manager



Certificate of Analysis Summary 346220

PLAINS ALL AMERICAN EH&S, Midland, TX

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

	Lab Id:	346220-0	013	346220-0	14	346220-0	015	346220-0	16		
Analysis Deguested	Field Id:	SVE Deep # 3	3 @ 35'	SVE Deep # 3	@ 40'	SVE Deep # 4	4 @ 35'	SVE Deep # 4	@ 40'		
Analysis Kequesiea	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Sep-25-09 1	13:40	Sep-24-09 1	3:55	Sep-24-09	14:50	Sep-25-09	15:30		
BTEX by EPA 8021B	Extracted:	Sep-30-09	10:00	Sep-30-09 1	0:00	Sep-30-09	10:00	Sep-30-09	10:00		
	Analyzed:	Oct-01-09	10:29	Oct-01-09 1	0:50	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:										
	Analyzed:	Sep-29-09 (09:15	Sep-29-09 0	9:15	Sep-29-09	09:15	Sep-29-09	09:15		
	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 1	2:25	Sep-30-09	12:25	Sep-30-09	12:25		
	Analyzed:	Sep-30-09 2	23:51	Oct-01-09 0	0:17	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. 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.

Brent Barron, II Odessa Laboratory Manager

XENCO Laboratories



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

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· · · · · · · · · · · · · · · · · · ·		



Project Name: EK Queen 6-Inch Pearce

Vork Orders : 346220),		Project II	J: 2008-113		
Lab Batch #: 774858	Sample: 539196-1-BKS / B [*]	KS Bate	h: 1 Matrix	Solid		
Units: mg/kg	Date Analyzed: 09/29/09 21:47	SU:	RROGATE RF	COVERY S	STUDY	
BTEX	X 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	 I
4-Bromofluorobenzene		0.0298	0.0300	99	80-120	
Lab Batch #: 774858	Sample: 539196-1-BSD / B	SD Bate!	h: 1 Matrix	Solid		
Units: mg/kg	Date Analyzed: 09/29/09 22:07	SU	RROGATE RF	COVERY ?	STUDY	
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0297	0.0300	99	80-120	
4-Bromofluorobenzene		0.0311	0.0300	104	80-120	
Lab Batch #: 774858	Sample: 539196-1-BLK / B	LK Bate	h: 1 Matrix	: Solid	<u>, </u>	
Units: mg/kg	Date Analyzed: 09/29/09 22:47	SU	RROGATE RF	COVERY	STUDY	
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0261	0.0300	87	80-120	
4-Bromofluorobenzene		0.0289	0.0300	96	80-120	
Lab Batch #: 774858	Sample: 346220-001 / SMP	Batcl	h: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 09/29/09 23:07	SU	RROGATE RF	COVERY S	STUDY	
BTEX	X 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	Batc!	h: 1 Matrix	:Soil	<u>. </u>	
Units: mg/kg	Date Analyzed: 09/29/09 23:27	SU	RROGATE RF	ECOVERY S	STUDY	
BTEX	X 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	j	0.0294	0.0300	98	80-120	1

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: EK Queen 6-Inch Pearce

Vork Orders : 346220),		Project II	J: 2008-113		
Lab Batch #: 774858	Sample: 346220-006 / SMP	Batch	a: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 09/30/09 00:47	SU	RROGATE RF	ECOVERY S	STUDY	
BTEX	X 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	h: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 09/30/09 01:07	SUI	RROGATE RF	COVERY S	STUDY	
BTEX	X 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	Batcl	h: 1 Matrix	:Soil	. <u> </u>	
Units: mg/kg	Date Analyzed: 09/30/09 02:07	SUI	RROGATE RF	ECOVERY S	STUDY	
BTEX	X 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	, Batcł	n: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 09/30/09 06:27	SUI	RROGATE RF	ECOVERY S	STUDY	
BTEX	X 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 / M	ISD Batcl	n: 1 Matrix	:Soil	. <u></u>	
Units: mg/kg	Date Analyzed: 09/30/09 06:47	SUI	RROGATE RF	ECOVERY S	STUDY	
BTEX	X 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	I
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



Project Name: EK Queen 6-Inch Pearce

Vork Orders : 346220),		Project II): 2008-113		
Lab Batch #: 774935	Sample: 539231-1-BKS / BI	KS Batel	h: 1 Matrix	:Solid		
Units: mg/kg	Date Analyzed: 09/30/09 13:14	SU	RROGATE RF	COVERY	STUDY	
BTEX	X 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 / B!	LK Batcl	h: 1 Matrix	Solid		
Units: mg/kg	Date Analyzed: 09/30/09 13:56	SU	RROGATE RF	COVERY S	STUDY	
BTEX	X 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	1
4-Bromofluorobenzene		0.0302	0.0300	101	80-120	
Lab Batch #: 774935	Sample: 346220-004 / SMP	Batcl	h: 1 Matrix	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 09/30/09 17:45	SU	RROGATE RF	ECOVERY	STUDY	
BTEX	X 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	Batel	h: 1 Matrix	:Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 09/30/09 18:06	SU	RROGATE RF	COVERY	STUDY	
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1.4 Difluorobanzana	Analytes	0.0240	0.0200	00	20.120	i
4-Bromofluorobenzene		0.0240	0.0300	131	80-120	**
I ab Ratch #. 774935		Bate	L. 1 Matrix	· Soil	00120	
Units: mg/kg	Date Analyzed: 09/30/09 18:27	SU	RROGATE RI	ECOVERY	STUDY	
BTEX	X 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



Project Name: EK Queen 6-Inch Pearce

Vork Orders : 346220),		Project II): 2008-113		
Lab Batch #: 774935	Sample: 346220-009 / SMP	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 09/30/09 18:49	SU	RROGATE RF	COVERY	STUDY	
BTEX	X 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	Batcl	h: ¹ Matrix:	Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 10/01/09 10:29	SU	RROGATE RF	COVERY S	STUDY	
BTEX	X 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	Batcl	h: ¹ Matrix:	Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 10/01/09 10:50	SU!	RROGATE RF	COVERY S	STUDY	
BTEX	X by EPA 8021B Analvtes	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	 I
Lab Batch #: 774935	Sample: 346220-015 / SMP	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 10/01/09 11:11	SU	RROGATE RF	COVERY S	STUDY	
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluorobenzene	Analytes	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene		0.0210	0.0300	104	80-120	
Lab Batch #: 774935	Sample: 346220-016 / SMP	Batcl	h: 1 Matrix:	: Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 10/01/09 11:33	SU!	RROGATE RF	COVERY ?	STUDY	
BTEX	X 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



Project Name: EK Queen 6-Inch Pearce

Vork Orders : 346220),		Project II): 2008-113		
Lab Batch #: 774935	Sample: 346220-012 / SMP	Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 10/01/09 12:15	SU!	RROGATE RF	ECOVERY	STUDY	
BTE	X 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	Batcl	h: ¹ Matrix:	Soil	·	
Units: mg/kg	Date Analyzed: 10/01/09 12:36	SU!	RROGATE RE	ECOVERY	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	J	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene		0.0347	0.0300	116	80-120	
Lab Batch #: 774935	Sample: 346186-005 SD / N	ASD Batcl	h: ¹ Matrix:	Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 10/01/09 12:57	SU!	RROGATE RF	COVERY	STUDY	
BTE	X by EPA 8021B Analvtes	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 / B	KS Batcl	h: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 10/05/09 09:43	SU!	RROGATE RF	ECOVERY	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	Alluly (C5	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene		0.0304	0.0300	101	80-120	
Lab Batch #: 775688	Sample: 539649-1-BSD / B	SD Batcl	h: 1 Matrix:	Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 10/05/09 10:04	SU!	RROGATE RF	COVERY	STUDY	
BTE	X 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



Project Name: EK Queen 6-Inch Pearce

Vork Orders : 346220),		Project II	J: 2008-113		
Lab Batch #: 775688	Sample: 539649-1-BLK / BI	_K Batcl	n: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 10/05/09 10:46	SU!	RROGATE RF	COVERY	STUDY	
втеу	K 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	Batcl	h: 1 Matrix:	Soil	·	
Units: mg/kg	Date Analyzed: 10/05/09 13:58	SU!	RROGATE RF	COVERY ?	STUDY	
ВТЕУ	K 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	Batc	h: 1 Matrix	:Soil		
Units: mg/kg	Date Analyzed: 10/05/09 14:19	SU	RROGATE RF	COVERY	STUDY	
ВТЕХ	X 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	Batcl	h: 1 Matrix	:Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 10/05/09 18:14	SU!	RROGATE RF	COVERY ?	STUDY	
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluorobenzene	Allalytes	0.0236	0.0300	79	80-120	**
4-Bromofluorobenzene		0.0250	0.0300	122	80-120	**
Lah Batch #: 775688	Sample: 346401-002 S / MS	Batc	h: 1 Matrix	• Solid		
Units: mg/kg	Date Analyzed: 10/05/09 18:35	SU	RROGATE RF	ECOVERY	STUDY	
ВТЕХ	X 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



Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220), Sample: 346401-002 SD / N	Project ID: 2008-113 MSD Batch: 1 Matrix: Solid							
Units: mg/kg	Date Analyzed: 10/05/09 18:56	SUR	ROGATE RE	ECOVERY S	STUDY				
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene		0.0297	0.0300	99	80-120				
4-Bromofluorobenzene		0.0297	0.0300	99	80-120				
Lab Batch #: 775029	Sample: 539272-1-BKS / B	KS Batch	: 1 Matrix:	Solid					
Units: mg/kg	Date Analyzed: 09/30/09 13:38	SUR	RROGATE RE	ECOVERY	STUDY				
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1 Chlorooctana	Analytes	112	100	112	70.125				
o-Terphenyl		47.3	50.0	95	70-135				
Lab Batab # 775029	Serverber 530272 1 BSD / B	SD Batab	1 Motrive	Solid	10 100				
Lab Batch #: 775029	Sample: 339272-1-BSD / B	SU Batch	ROGATE RE	COVERY S	STUDY				
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes			[D]					
1-Chlorooctane		112	100	112	70-135				
o-Terphenyl		47.2	50.0	94	70-135				
Lab Batch #: 775029	Sample: 539272-1-BLK / B	LK Batch	: 1 Matrix:	Solid					
Units: mg/kg	Date Analyzed: 09/30/09 14:32	SUR	ROGATE RE	ECOVERY S	STUDY				
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes			נטן					
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	SUR	ROGATE RE	COVERY	STUDY				
TPH 3	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
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



Project Name: EK Queen 6-Inch Pearce

Work Orders : 346220),		Project II	D: 2008-113		
Lab Batch #: 775029	Sample: 346220-002 / SMP	Bate	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 09/30/09 15:26	SU	RROGATE RI	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		113	100	113	70-135	
o-Terphenyl		56.9	50.0	114	70-135	
Lab Batch #: 775029	Sample: 346220-003 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 09/30/09 15:53	SU	RROGATE RI	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		106	100	106	70-135	
o-Terphenyl		47.9	50.0	96	70-135	
Lab Batch #: 775029	Sample: 346220-004 / SMP	Batc	h: ¹ Matrix:	:Soil	<u>, </u>	
Units: mg/kg	Date Analyzed: 09/30/09 16:20	SU	RROGATE RI	ECOVERY	STUDY	
TPH	By SW8015 Mod	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	Batc	h: 1 Matrix:	:Soil	<u>, </u>	
Units: mg/kg	Date Analyzed: 09/30/09 16:46	SU	RROGATE RI	ECOVERY	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		119	100	119	70-135	
o-Terphenyl		56.2	50.0	112	70-135	
Lab Batch #: 775029	Sample: 346220-006 / SMP	Bate	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 09/30/09 17:13	SU	RROGATE RI	ECOVERY	STUDY	
TPH 1	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



Project Name: EK Queen 6-Inch Pearce

Vork Orders : 346220	,		Project II	D: 2008-113		
Lab Batch #: 775029	Sample: 346220-007 / SMP	Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 09/30/09 17:40	SU	RROGATE RE	ECOVERY	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	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 09/30/09 18:07	SU	RROGATE RE	ECOVERY	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	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 09/30/09 18:34	SU	RROGATE RH	ECOVERY	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1 Chloroogtana	Analytes	110	100	110	70.125	
o-Terphenyl		50.9	50.0	118	70-135	
Lob Botob # 775029	Sompley 346220 010 / SMP	Bota	h. 1 Motrive	Soil	10 155	
Lab Datcil #: 11502)	Date Analyzed: 09/30/09 22:06	SU	RROGATE RE	ECOVERY S	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		91.1	100	91	70-135	
o-Terphenyl		47.6	50.0	95	70-135	
Lab Batch #: 775029	Sample: 346220-011 / SMP	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 09/30/09 22:59	SU	RROGATE RE	ECOVERY	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



Project Name: EK Queen 6-Inch Pearce

Vork Orders : 346220	١,		Project II): 2008-113		
Lab Batch #: 775029	Sample: 346220-012 / SMP	Batch	a: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 09/30/09 23:25	SUI	RROGATE RE	COVERY S	STUDY	
ТРН І	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	n: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 09/30/09 23:51	SUI	RROGATE RE	COVERY S	STUDY	
ТРН І	By SW8015 Mod	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	n: 1 Matrix:	Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 10/01/09 00:17	SUI	RROGATE RF	COVERY S	STUDY	
ТРН Ј	By SW8015 Mod	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	h: 1 Matrix:	Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 10/01/09 00:43	SUI	RROGATE RF	COVERY S	STUDY	
ТРН Ј	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes		ļ	լոյ		
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	n: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 10/01/09 01:09	SUI	RROGATE KE	COVERY 2	STUDY	
ТРН Ј	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



Project Name: EK Queen 6-Inch Pearce

Work Orders: 346220	,		Project II	D: 2008-113		
Lab Batch #: 775029	Sample: 346220-002 S / MS	S Bate	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 10/01/09 03:19	SU	RROGATE RI	ECOVERY S	STUDY	
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1.011	Analytes	100	100	[100	50.105	
1-Chlorooctane		109	100	109	70-135	
o-Terphenyl		45.5	50.0	91	70-135	
Lab Batch #: 775029	Sample: 346220-002 SD / N	ASD Bate	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 10/01/09 03:46	SU	RROGATE RI	ECOVERY S	STUDY	
ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-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





Work Order #: 346220			Pro	ject ID:		2	008-113
Lab Batch #: 774935	Sa	mple: 539231-	1-BKS	Matrix:	Solid		
Date Analyzed: 09/30/2009	Date Prep	oared: 09/30/20)09	Analyst:	ASA		
Reporting Units: mg/kg	Ba	tch #: 1	BLANK /B	SLANK SPI	KE REC	OVERY S	STUDY
BTEX by EPA 8021B Analytes		Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene		ND	0.1000	0.0926	93	70-130	
Toluene		ND	0.1000	0.0917	92	70-130	
Ethylbenzene		ND	0.1000	0.0941	94	71-129	
m,p-Xylenes		ND	0.2000	0.2057	103	70-135	
o-Xylene		ND	0.1000	0.0990	99	71-133	

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit





work Order #: 346220							Proj	ject ID: 2	2008-113		
Analyst: ASA	Da	ate Prepar	ed: 09/29/200)9			Date A	nalyzed: ()9/29/2009		
Lab Batch ID: 774858 Sample: 539196-1-1	BKS	Batcl	h#: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	JCATE 1	RECOVI	ERY STUD	Y	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0924	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	D	(D	- 10/05/00/				D-4- 4	المستحما	0/05/0000		
Analyst: ASA	Da	ate Prepar	ed: 10/05/200)9			Date Al	halyzed:	10/05/2009		
Lab Batch ID: 775688 Sample: 539649-1-1	Da BKS	ate Prepar Batcl	ed: 10/05/200 h #: 1	19			Date Al	Matrix: S	Solid		
Lab Batch ID: 775688 Sample: 539649-1-1 Units: ^{mg/kg}	Da BKS	Batcl Batcl BLAN	ed: 10/05/200 h #: 1 K /BLANK \$	99 SPIKE / F	BLANK S	PIKE DUPI	Jate A	Matrix: S	Solid	Ŷ	
Lab Batch ID: 775688 Sample: 539649-1-1 Units: mg/kg BTEX by EPA 8021B	Blank Sample Result [A]	BLAN Spike Added	ed: 10/05/200 h #: 1 K /BLANK S Blank Spike Result	SPIKE / F Blank Spike %R	Spike Added	Blank Blank Spike Duplicate Boeult [F]	Date Al	RECOVI	Solid ERY STUD Control Limits %R	Control Limits %RPD	Flag
Lab Batch ID: 775688 Sample: 539649-1-1 Units: ^{mg/kg} BTEX by EPA 8021B Analytes	3KS Blank Sample Result [A]	Batcl BLAN Spike Added [B]	ed: 10/05/200 h #: 1 K /BLANK S Blank Spike Result [C]	99 SPIKE / F Blank Spike %R [D]	BLANK S Spike Added [E]	Blank Blank Spike Duplicate Result [F]	JCATE 1 Blk. Spk Dup. %R [G]	RPD %	Solid ERY STUD Control Limits %R	Y Control Limits %RPD	Flag
Lab Batch ID: 775688 Sample: 539649-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene	Blank Sample Result [A] ND	Batcl BLAN Spike Added [B] 0.1000	ed: 10/05/200 h #: 1 K /BLANK S Blank Spike Result [C] 0.1016	99 SPIKE / F Blank Spike %R [D] 102	BLANK S Spike Added [E] 0.1	Blank Spike Duplicate Result [F] 0.0988	JCATE I Blk. Spk Dup. %R [G] 99	RPD 3	Control Limits 70-130	Control Limits %RPD 35	Flag
Analyst: ASA Lab Batch ID: 775688 Sample: 539649-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene	Blank Sample Result [A] ND ND	BLAN Spike Added [B] 0.1000 0.1000	ed: 10/05/200 h #: 1 K /BLANK S Blank Spike Result [C] 0.1016 0.1000	591KE / E Blank Spike %R [D] 102 100	Spike Added [E] 0.1 0.1	Blank Spike Duplicate Result [F] 0.0988 0.0969	JCATE J Blk. Spk Dup. %R [G] 99 97	RPD 3 3	Control Limits %R 70-130 70-130	Y Control Limits %RPD 35 35	Flag
Analyst: ASA Lab Batch ID: 775688 Sample: 539649-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene	Blank Sample Result [A] ND ND ND	Spike Added [B] 0.1000 0.1000	ed: 10/05/200 h #: 1 K /BLANK S Blank Spike Result [C] 0.1016 0.1000 0.1014	SPIKE / F Blank Spike %R [D] 102 100 101	BLANK S Spike Added [E] 0.1 0.1 0.1	PIKE DUPI Blank Spike Duplicate Result [F] 0.0988 0.0969 0.0979	Date Al JICATE I Blk. Spk Dup. %R [G] 99 97 98	RPD % 3 4	Control Limits %R 70-130 71-129	Y Control Limits %RPD 35 35 35 35	Flag
Analyst: ASA Lab Batch ID: 775688 Sample: 539649-1-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene m,p-Xylenes	Blank Sample Result [A] ND ND ND ND ND ND	Batcl BLAN Spike Added [B] 0.1000 0.1000 0.1000 0.2000	ed: 10/05/200 h #: 1 K /BLANK S Blank Spike Result [C] 0.1016 0.1000 0.1014 0.2220	99 Blank Spike %R [D] 102 100 101 111	Spike Added [E] 0.1 0.1 0.1	PIKE DUPI Blank Spike Duplicate Result [F] 0.0988 0.0969 0.0979 0.2148	JATE A JICATE I Blk. Spk Dup. %R [G] 99 97 98 107	RPD % 3 3 4 3	Control Limits %R 70-130 70-130 71-129 70-135 70-135 70-135	Control Limits %RPD 35 35 35 35 35	Flag

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





Work Order #: 346220 Analyst: BHW Lab Batch ID: 775029	Sample: 539272-1-B	Da KS	ate Prepar Batcl	red: 09/30/200 h #: 1	9			Pro Date A	ject ID: 2 nalyzed: 0 Matrix: S	2008-113 99/30/2009 Solid		
Units: mg/kg			BLAN	K /BLANK S	PIKE / B	BLANK S	PIKE DUPL	ICATE	RECOVE	ERY STUD	Y	
TPH By SW8015	Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes			լոյ		[10]	[[12]	Kesut [F]	[0]				
C6-C12 Gasoline Range Hydrocarbo	ns	ND	1000	874	87	1000	876	88	0	70-135	35	
C12-C28 Diesel Range Hydrocarbon	S	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 II	D: 2008-1	13			
Lab Batch ID: 774858 (C) Date Analyzed: 09/30/2009	C- Sample ID: Date Prepared:	346220 09/29/2	-001 S 009	Ba An	tch #: alyst:	1 Matri ASA	x: Soil				
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	L - J	[D]	[E]		[G]				
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	C- Sample ID:	346186	-005 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 10/01/2009	Date Prepared:	09/30/2	009	An	alyst:	ASA					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Anarytes		[B]		լոյ	[E]		[G]				
Benzene	ND	0.1262	0.0663	53	0.1262	0.0669	53	1	70-130	35	Х
Toluene	ND	0.1262	0.0673	53	0.1262	0.0678	54	1	70-130	35	Х
Ethylbenzene	ND	0.1262	0.0685	54	0.1262	0.0689	55	1	71-129	35	Х
m,p-Xylenes	ND	0.2523	0.1479	59	0.2523	0.1498	59	1	70-135	35	Х
o-Xylene	ND	0.1262	0.0700	55	0.1262	0.0694	55	1	71-133	35	Х

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 6-Inch Pearce



Work Order #: 346220						Project I	D: 2008-1	13			
Lab Batch ID: 775688 Date Analyzed: 10/05/2009	QC- Sample ID: Date Prepared:	346401- 10/05/2	-002 S .009	Ba An	tch #: alyst:	1 Matrix ASA	x: Solid				
Reporting Units: mg/kg		M	IATRIX SPIKI	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %B	Spike	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %B	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]	Ktoun [1]	[G]	/0			
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	Ba	itch #:	1 Matri	x: Soil				
Date Analyzed: 10/01/2009	Date Prepared:	09/30/2	009	An	alyst:	BHW					
Reporting Units: mg/kg		М	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE RECO	OVERY	STUDY		
TPH By SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]			,	
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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ 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





Work Order #: 346220

Lab Batch #: 774613				Project I	D: 2008-113	3
Date Analyzed: 09/29/2009 D	ate Prepar	ed: 09/29/2009) Anal	yst:BEV		
QC- Sample ID: 346186-001 D	Batch	n#: 1	Mat	rix: Soil		
Reporting Units: %		SAMPLE	/ SAMPLE]	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte			[B]			
Percent Moisture		12.2	13.0	7	20	
Lab Batch #: 774616						
Date Analyzed: 09/29/2009 D	ate Prepar	ed: 09/29/2009) Anal	yst:BEV		
QC- Sample ID: 346220-005 D	Batch	n#: 1	Mat	rix: Soil		
Reporting Units: %		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

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

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Page 30 of 32

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

Client:	Basin Env.	Plains
Date/ Time:	9.28.09	9:35
Lab ID # :	34622	0
Initials:	aL	-

Sample Receipt Checklist

		and the second sec		Client Initial
#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?	Tes	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?	Tes	No	
#12	Samples in proper container/ bottle?	(Yes)	No	See Below
#13	Samples properly preserved?	Yes	No	See Below
#14	Sample bottles intact?	Nes	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?	Ves	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:	5			
Corrective Action Taker	:			
Check all that Apply:		See attached e-mail/ fax Client understands and would like Cooling process had begun shor	e to proceed with analysis ly after sampling event	

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Gracie Avalos

From:Camille J. Bryant [cjbryant@basin-consulting.com]Sent:Wednesday, September 30, 2009 8:11 AMTo: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: <u>Gracie Avalos</u> To: <u>cdstanley@basin-consulting.com</u>; <u>'Camille J. Bryant'</u> 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.

- 1 N - 15

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

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Please consider the environment before printing this email.

9/30/2009

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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



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)



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

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 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



XENCO Laboratories

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID:2008-113Work 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.





Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work 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.



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 405302

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Mon Jan-31-11 04:40 pm Report Date: 04-FEB-11

jeet Elocation. Lea County, Tuvi								Project Ma	nager:	Brent Barron,	Π		
	Lab Id:	405302-0	001	405302-0	002	405302-	003	405302-	004	405302-0	05	405302-0	006
	Field Id:	SB-6 @ 2	20'	SB-6 @	25'	SB-6 @	30'	SB-6 @	35'	SB-6 @ 4	40'	SB-6 @	45'
Analysis Kequested	Depth:												
	Matrix:	SOIL		SOIL	,	SOII	_	SOIL		SOIL		SOIL	
	Sampled:	Jan-28-11 (09:45	Jan-28-11 (09:50	Jan-28-11	09:55	Jan-28-11	10:00	Jan-28-11 1	0:05	Jan-28-11	10:10
BTEX by EPA 8021	Extracted:	Feb-01-11	16:15	Feb-01-11	16:15	Feb-01-11	16:15	Feb-01-11	16:15	Feb-01-11 1	6:15	Feb-01-11	16:15
-	Analyzed:	Feb-01-11	20:19	Feb-01-11	21:04	Feb-01-11	21:49	Feb-01-11	18:49	Feb-01-11 1	9:11	Feb-01-11	19:34
	Units/RL:	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
Foluene		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
n_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
Fotal 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	Extracted:												
	Analyzed:	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
	Units/RL:	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	Extracted:												
	Analyzed:	Feb-01-11	17:00	Feb-01-11	17:00	Feb-01-11	17:00	Feb-01-11	17:00	Feb-01-11 1	7:00	Feb-01-11	17:00
	Units/RL:	%	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	Extracted:	Feb-02-11	10:15	Feb-02-11	10:15	Feb-02-11	10:15	Feb-02-11	10:15	Feb-02-11 1	0:15	Feb-02-11	10:15
	Analyzed:	Feb-02-11	14:40	Feb-02-11	14:58	Feb-02-11	15:16	Feb-02-11	15:35	Feb-02-11 1	5:53	Feb-02-11	16:11
	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		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
Fotal 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.

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



Project Name: EK Queen Pearce

Vork Orders: 405302	2,		Project II	J: 2008-113		
Lab Batch #: 842121	Sample: 594720-1-BKS / B!	KS Batel	h: 1 Matrix:	:Solid		
Units: mg/kg	Date Analyzed: 02/01/11 16:55	SU	RROGATE RF	ECOVERY ?	STUDY	
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0292	0.0300	97	80-120	
4-Bromofluorobenzene		0.0300	0.0300	100	80-120	·
Lab Batch #: 842121	Sample: 594720-1-BSD / B	SD Batcl	h: 1 Matrix:	:Solid		
Units: mg/kg	Date Analyzed: 02/01/11 17:18	SU!	RROGATE RF	ECOVERY S	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	A har y too	0.0294	0.0300	98	80-120	. <u> </u>
4-Bromofluorobenzene		0.0300	0.0300	100	80-120	
Lab Batch #: 842121	Sample: 594720-1-BLK / B	LK Batc	h: 1 Matrix	:Solid	<u>.</u>	
Units: mg/kg	Date Analyzed: 02/01/11 18:26	SU	RROGATE RF	ECOVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluorobenzene	Analytes	0.0275	0.0300	92	80-120	1
4-Bromofluorobenzene		0.0275	0.0300	92	80-120	
Lab Batch #: 842121	Sample: 405302-004 / SMP	Batc!	h: 1 Matrix	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 02/01/11 18:49	SU	RROGATE RF	ECOVERY ?	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes					I
1,4-Difluorobenzene		0.0270	0.0300	90	80-120	i
		0.0304	0.0300		80-120	
Lab Batch #: 842121	Sample: 405302-005 / SIVIF	Bater	1: 1 Matrix:	Soil	OTUDV	
Units: mg/kg	Date Analyzed: 02/01/11 19:11		KKUGALE NE			
BTE	X 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 / BAll results are based on MDL and validated for QC purposes.



Project Name: EK Queen Pearce

Vork Orders : 405302	· · · · · · · · · · · · · · · · · · ·		Project II): 2008-113		
Lab Batch #: 842121	Sample: 405302-006 / SMP	Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 02/01/11 19:34	SU	RROGATE RE	COVERY S	STUDY	
ВТЕ	X 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	Batcl	h: 1 Matrix:	Soil	·	
Units: mg/kg	Date Analyzed: 02/01/11 20:19	SU	RROGATE RE	COVERY S	STUDY	
BTE	X 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	Batcl	h: ¹ Matrix:	Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 02/01/11 21:04	SU	RROGATE RE	COVERY S	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0276	0.0300	92	80-120	1
4-Bromofluorobenzene		0.3875	0.0300	1292	80-120	**
Lab Batch #: 842121	Sample: 405302-003 / SMP	Batcl	h: 1 Matrix:	Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 02/01/11 21:49	SU.	RROGATE RE	COVERY S	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	Analytes	0.0255	0.0300	85	80-120	 I
4-Bromofluorobenzene		0.1155	0.0300	385	80-120	*
Lah Batch #: 842121		Batcl	h· 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 02/02/11 06:43	SU	RROGATE RE	ECOVERY S	STUDY	
BTE	X 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 / BAll results are based on MDL and validated for QC purposes.



Project Name: EK Queen Pearce

Vork Orders: 405302	·,		Project II	J: 2008-113		
Lab Batch #: 842121	Sample: 405302-004 SD / N	ASD Batel	h: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 02/02/11 07:05	SU!	RROGATE RF	ECOVERY S	STUDY	
ВТЕ	X 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 / B	KS Batcl	h: 1 Matrix:	:Solid		
Units: mg/kg	Date Analyzed: 02/03/11 10:17	SU!	RROGATE RF	ECOVERY S	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluorobenzene	Allalytts	0.0299	0.0300	100	80-120	i
4-Bromofluorobenzene		0.0299	0.0300	100	80-120	
I ah Datah #. 84237()	Sample: 594857-1-BSD / B	CD Bate	- 1 Matrix	Solid		
Lao Baich #: 0125.0	Data Analyzad: 02/02/11 11:23		RROGATE RI	FCOVERY	STUDY	
BTE	X by EPA 8021	Amount Found	True Amount	Recovery	Control Limits	Flags
	Analytes	[A]	[B]	%к [D]	%K	l
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 / B	LK Batcl	n: 1 Matrix:	:Solid		
Units: mg/kg	Date Analyzed: 02/03/11 12:07	SU!	RROGATE RF	ECOVERY S	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes		ļ'	լոյ		ļ
1,4-Difluorobenzene		0.0283	0.0300	94	80-120	<u> </u>
4-Bromofluorobenzene		0.0267	0.0300	89	80-120	<u>ı</u>
Lab Batch #: 842370	Sample: 405302-002 / DL	Batch	n: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 02/03/11 12:30	SU	RROGATE RE	COVERY S	STUDY	
BTE	X 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	1
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 / BAll results are based on MDL and validated for QC purposes.


Project Name: EK Queen Pearce

Work Orders: 405302	2,	Project ID: 2008-113								
Lab Batch #: 842370	Sample: 405600-001 D / M	D Bate	h: ¹ Matrix:	Soil						
Units: mg/kg	Date Analyzed: 02/03/11 16:02	SU	RROGATE RI	ECOVERY	STUDY					
BTE	CX 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	**				
Lab Batch #: 842208	Sample: 594767-1-BKS / B	KS Bate	h: ¹ Matrix:	Solid						
Units: mg/kg	Date Analyzed: 02/02/11 12:50	SU	RROGATE RI	ECOVERY	STUDY					
ТРН	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 / B	SD Batc	h: ¹ Matrix:	Solid						
Units: mg/kg	Date Analyzed: 02/02/11 13:09	SU	RROGATE RI	ECOVERY	STUDY					
ТРН	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 / B	LK Batc	h: 1 Matrix:	Solid	1					
Units: mg/kg	Date Analyzed: 02/02/11 13:27	SU	RROGATE RI	ECOVERY	STUDY					
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes			[IJ]						
1-Chlorooctane		72.6	100	73	70-135					
0-Terphenyi		30.3	50.1	12	/0-135					
Lab Batch #: 842208	Sample: 405302-001 / SMF	' Batel	h: ¹ Matrix:	Soil	STUDY					
Units: mg/kg	Date Analyzed: 02/02/11 14:40	50	KKUGAIE KI							
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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



Project Name: EK Queen Pearce

Work Orders : 405302	, ,	Project ID: 2008-113								
Lab Batch #: 842208	Sample: 405302-002 / SMP	Batc	h: ¹ Matrix:	Soil						
Units: mg/kg	Date Analyzed: 02/02/11 14:58	50	KRUGATE KI							
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane		102	99.9	102	70-135					
o-Terphenyl		38.6	50.0	77	70-135					
Lab Batch #: 842208	Sample: 405302-003 / SMP	Batc	h: ¹ Matrix:	Soil	· ·					
Units: mg/kg	Date Analyzed: 02/02/11 15:16	SU	RROGATE RI	ECOVERY	STUDY					
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane		118	100	118	70-135					
o-Terphenyl		37.5	50.0	75	70-135					
Lab Batch #: 842208	Sample: 405302-004 / SMP	Batc	h: ¹ Matrix:	Soil						
Units: mg/kg	Date Analyzed: 02/02/11 15:35	SU	RROGATE RI	ECOVERY	STUDY					
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane		74.2	99.6	74	70-135					
o-Terphenyl		48.9	49.8	98	70-135					
Lab Batch #: 842208	Sample: 405302-005 / SMP	Batc	h: 1 Matrix:	Soil						
Units: mg/kg	Date Analyzed: 02/02/11 15:53	SU	RROGATE RI	ECOVERY	STUDY					
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
1 Chloropatore	Analytes	75.0	00.8	[12]	70.125					
o-Terphenyl		75.8 39.2	99.8 49.9	70	70-135					
с терненут L - h, р . 4 h, <i>4</i> , 942209	Secondary 405202 006 / SMD			Soil	10 155					
	Date Applyzed: 02/02/11 16:11		RROGATE RE	ECOVERY	STUDY					
	by SW/8015 Mod	Amount	True		Control					
	Analytes	Found [A]	Amount [B]	Recovery %R [D]	Limits %R	Flags				
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





Project Name: EK Queen Pearce

Work Order #: 405302							Pro	ject ID: 2	2008-113					
Analyst: ASA	Da	ate Prepar	ed: 02/01/201	1			Date Analyzed: 02/01/2011							
Lab Batch ID: 842121 Sample: 594720-1-1	BKS	Batcl	n#: 1			Matrix: Solid								
Units: mg/kg		BLAN	K /BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	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	<0.0010	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	0.0075	08	0.1000	0.0000	100	2	71-133	35				
0 Ayrene	<0.0010	0.1000	0.0975	90	0.1000	0.0999	100	2	/1-135	55				
Analyst: ASA	Da	ate Prepar	ed: 02/03/201	1	0.1000	0.0999	Date A	nalyzed: ()2/03/2011	33				
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1-1	Da Da	ate Prepar Batcl	ed: 02/03/201	1	0.1000	0.0999	Date A	nalyzed: (Matrix: S)2/03/2011 Solid	33				
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1-3 Units: mg/kg	Da BKS	ate Prepar Batcl BLAN	ed: 02/03/201 n#: 1 K /BLANK S	98 11 SPIKE / H	BLANK S	SPIKE DUPI	Date A	nalyzed: (Matrix: S RECOVI)2/03/2011 Solid ERY STUD)Y				
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1-1 Units: ^{mg/kg} BTEX by EPA 8021 Analytes	Da BKS Blank Sample Result [A]	ate Prepar Batcl BLAN Spike Added [B]	ed: 02/03/201 n #: 1 K /BLANK S Blank Spike Result [C]	Deriver of the second s	BLANK S Spike Added [E]	Blank Spike Duplicate Result [F]	Date A Date A LICATE D Blk. Spk Dup. %R [G]	nalyzed: (Matrix: S RECOVI RPD %	2/03/2011 Solid Control Limits %R	VY Control Limits %RPD	Flag			
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1-3 Units: ^{mg/kg} BTEX by EPA 8021 Analytes Benzene	Da BKS Blank Sample Result [A] <0.0010	ate Prepar Batcl BLAN Spike Added [B] 0.0998	ed: 02/03/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.0861	SPIKE / I Blank Spike %R [D] 86	BLANK S Spike Added [E] 0.1000	Blank Spike Duplicate Result [F] 0.0959	Date A Date A LICATE Blk. Spk Dup. %R [G] 96	nalyzed: (Matrix: S RECOVI RPD % 11	2/03/2011 Solid ERY STUD Control Limits %R 70-130	Control Limits %RPD 35	Flag			
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1-1 Units: ^{mg/kg} BTEX by EPA 8021 Analytes Benzene Toluene	Blank Blank Sample Result [A] <0.0010	ate Prepar Batcl BLAN Spike Added [B] 0.0998 0.0998	ed: 02/03/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.0861 0.0840	98 1 SPIKE / I Blank Spike %R [D] 86 84	Spike Added [E] 0.1000	Blank Spike Duplicate Result [F] 0.0959 0.0925	Blk. Spk %R [G] 96 93	2 nalyzed: () Matrix: \$ RECOVH % 11 10	2/03/2011 Solid Control Limits %R 70-130 70-130	VY Control Limits %RPD 35 35	Flag			
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1-3 Units: ^{mg/kg} BTEX by EPA 8021 Analytes Benzene Toluene Ethylbenzene	Da BKS Blank Sample Result [A] <0.0010 <0.0020 <0.0010	Spike Added [B] 0.0998 0.0998 0.0998	ed: 02/03/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.0861 0.0840 0.0822	98 1 SPIKE / I Blank Spike %R [D] 86 84 82	BLANK S Spike Added [E] 0.1000 0.1000 0.1000	Blank Spike Duplicate Result [F] 0.0925 0.0886	Bik. Spk Bik. Spk 000 %R [G] 96 93 89	2 nalyzed: (Matrix: S RECOVH % 11 10 7	2/03/2011 Solid ERY STUD Control Limits %R 70-130 70-130 71-129	Control Limits %RPD 35 35 35	Flag			
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1-1 Units: mg/kg BTEX by EPA 8021 Analytes Benzene Toluene Ethylbenzene m_p-Xylenes	Da BKS Blank Sample Result [A] <0.0010 <0.0020 <0.0010 <0.0020	0.1000 ate Prepar Batcl BLAN Spike Added [B] 0.0998 0.0998 0.0998 0.1996	ed: 02/03/201 h #: 1 K /BLANK S Blank Spike Result [C] 0.0861 0.0840 0.0822 0.1607	93 11 SPIKE / I Blank Spike %R [D] 86 84 82 81	Spike Added [E] 0.1000 0.1000 0.1000 0.1000 0.1000	0.0999 PIKE DUPI Blank Spike Duplicate Result [F] 0.0959 0.0925 0.0886 0.1740	Blk. Spk Blk. 3pk G 96 93 89 87	2 nalyzed: (Matrix: S RECOVE % 11 10 7 8	Control Limits %R 70-130 70-130 71-129 70-135	Control Limits %RPD 35 35 35 35 35	Flag			

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							Pro	ject ID: 2	2008-113							
Analyst: LATCOR	Da	ite Prepar	ed: 02/02/201	.1		Date Analyzed: 02/02/2011										
Lab Batch ID: 842217 Sample: 842217-1-	BKS	Batch	1#: 1				Matrix: Solid									
Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY								Y							
Inorganic Anions In Soil by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag					
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]									
Chloride	<0.420	10.0	11.2	112	10.0	11.3	113	1	75-125	20						
Analyst: BEV	Da	ite Prepar	ed: 02/02/201	1			Date A	nalyzed: 02/02/2011								
Analyst: BEV Lab Batch ID: 842208 Sample: 594767-1-1	Da BKS	ate Preparo Batch	ed: 02/02/201 1#: 1	1			Date A	nalyzed: (Matrix: S	02/02/2011 olid							
Analyst: BEV Lab Batch ID: 842208 Sample: 594767-1- Units: ^{mg/kg}	Da BKS	ate Prepar Batch BLANI	ed: 02/02/201 n#: 1 K/BLANK S	.1 PIKE / B	LANK S	PIKE DUPI	Date A	nalyzed: () Matrix: S RECOVE	02/02/2011 Iolid Z RY STUD	Y						
Analyst: BEV Lab Batch ID: 842208 Sample: 594767-1- Units: ^{mg/kg} TPH by SW8015 Mod Analytes	Da BKS Blank Sample Result [A]	ate Prepar Batch BLAN Spike Added [B]	ed: 02/02/201 h #: 1 K /BLANK S Blank Spike Result [C]	1 SPIKE / E Blank Spike %R [D]	BLANK S Spike Added [E]	PIKE DUPI Blank Spike Duplicate Result [F]	Date A	nalyzed: (Matrix: S RECOVE RPD %	2/02/2011 Solid CRY STUD Control Limits %R	Control Limits %RPD	Flag					
Analyst: BEV Lab Batch ID: 842208 Sample: 594767-1- Units: mg/kg TPH by SW8015 Mod Analytes C6-C12 Gasoline Range Hydrocarbons	Dr BKS Blank Sample Result [A] <50.1	ate Prepar Batch BLAN Spike Added [B] 1010	ed: 02/02/201 n #: 1 K /BLANK S Blank Spike Result [C] 890	1 SPIKE / E Blank Spike %R [D] 88	BLANK S Spike Added [E] 1000	PIKE DUPI Blank Spike Duplicate Result [F] 932	Date A	nalyzed: (Matrix: S RECOVE	2/02/2011 Solid CRY STUD Control Limits %R 70-135	Control Limits %RPD	Flag					

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



Work Order #: 405302

Form 3 - MS Recoveries

Project Name: EK Queen Pearce



Lab Batch #: 842217	Project ID: 2008-113						
Date Analyzed: 02/02/2011 Date	Date Prepared: 02/02/2011Analyst: LATCOR						
QC- Sample ID: 405302-001 S	Batch #: 1 Matrix: Soil						
Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Analytes	[A]	[B]					
Chloride	23.1	109	125	93	75-125		

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

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries

Project Name: EK Queen Pearce



Work Order #: 405302	Project ID: 2008-113										
Lab Batch ID: 842121 Q Date Analyzed: 02/02/2011 D Reporting Units: mg/kg D	C- Sample ID: Date Prepared:	405302- 02/01/20 M	-004 S 011 (ATRIX SPIK)	Ba An E / MAT	tch #: alyst: RIX SPI	1 Matrix ASA KE DUPLICA	x: Soil TE REC	OVERY	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	Х
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	Х

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

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 16 of 19





Project Name: EK Queen Pearce

Work Order #: 405302

Lab Batch #: 842370			Project I	D: 2008-113	3
Date Analyzed: 02/03/2011 16:02 Date Prepare	red: 02/03/2011	Ana	lyst:ASA		
QC- Sample ID: 405600-001 D Batc	h #: 1	Mat	trix: Soil		
Reporting Units: mg/kg	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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
Date Analyzed: 02/02/2011 09:30 Date Prepare QC- Sample ID: 405302-001 D Batch Reporting Units: mg/kg Image: March Science	red: 02/02/2011 h #: 1 SAMPLE	Ana Mat	lyst:LATC trix: Soil DUPLIC	OR	OVERY
Inorganic Anions In Soil by E300 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	23.1	17.0	30	20	F
Lab Batch #: 842042 Date Analyzed: 02/01/2011 17:00 Date Prepare QC- Sample ID: 405302-001 D Batch	red: 02/01/2011 h #: 1	Ana Ma	lyst: WRU trix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
					<u></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

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XENCO Laboratories

Phoenix, San Antonio, Tampa

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia 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: 10	25in Env.	/Phins	
Date/Time:	1.31.11	16:40	<u>^</u>
Lab ID # :	40	5302	.
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 N	0.	Cooler 5 No.	
	C Ibs	°C	lbs	°C

	Nonconformance Documentation	
Contact:	Contacted by: Date/Time:	······
Regarding:		
Corrective Action Tak	en:	
Check all that apply:	Cooling process has begun shortly after sampling event and out of temperature	*
	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 (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)



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



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



XENCO Laboratories

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID:2008-113Work 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





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 Name: EK Queen Pearce



Date Received in Lab: Mon Jan-31-11 04:40 pm

Contact: Jason Henry Project Location: Lea County, NM

Project Id: 2008-113

Report Date: 04-FEB-11

								Project Ma	inager:	Brent Barron.	, II		
	Lab Id:	405303-(001	405303-(002	405303-	.003	405303-(004	405303-(005	405303-(006
A alugia Daguastad	Field Id:	SB-7 @	22'	SB-7 @	27'	SB-7 @	32'	SB-7 @	37'	SB-7 @	42'	SB-7 @	47'
Analysis Requested	Depth:	1	ļ	1	ļ	1	ļ	1	ļ		ļ	1	ļ
	Matrix:	SOIL	_	SOIL	_	SOII	L	SOII	ا _	SOIL	_	SOIL	_
	Sampled:	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	Extracted:	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
	Analyzed:	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
	Units/RL:	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	Extracted:	1	ļ	1	ļ	1	ļ		ļ		ļ		
	Analyzed:	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
	Units/RL:	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	Extracted:	1		1	į								
	Analyzed:	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
	Units/RL:	%	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	Extracted:	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
	Analyzed:	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
	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		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	ļ	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

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Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 405303

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Mon Jan-31-11 04:40 pm

Report Date: 04-FEB-11

Project Manager: Brent Barron, II

	Lab Id:	405303-00	07			
Anglusia Deguasted	Field Id:	SB-7 @ 5	2'			
Analysis Kequestea	Depth:					
	Matrix:	SOIL				
	Sampled:	Jan-28-11 1	1:00			
BTEX by EPA 8021	Extracted:	Feb-01-11 1	6:15			
	Analyzed:	Feb-02-11 0	3:03			
	Units/RL:	mg/kg	RL			
Benzene		ND (0.0010			
Toluene		0.0265 0	0.0021			
Ethylbenzene		0.0163 0	0.0010			
m_p-Xylenes		0.2199 (0.0021			
o-Xylene		0.0337 (0.0010			
Xylenes, Total		0.2536 0	0.0010			
Total BTEX		0.2964 0	0.0010			
Inorganic Anions In Soil by E300	Extracted:					
	Analyzed:	Feb-02-11 0	9:30			
	Units/RL:	mg/kg	RL			
Chloride		11.3	5.17			
Percent Moisture	Extracted:					
	Analyzed:	Feb-01-11 1	7:00			
	Units/RL:	%	RL			
Percent Moisture		3.23	1.00			
TPH by SW8015 Mod	Extracted:	Feb-02-11 1	0:15			
	Analyzed:	Feb-02-11 1	8:38			
	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			

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

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Flagging Criteria

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

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

BRL Below Reporting Limit.

- RL Reporting Limit
- 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



Project Name: EK Queen Pearce

Vork Orders: 405303	۶,		Project II	J: 2008-113		
Lab Batch #: 842121	Sample: 594720-1-BKS / B'	KS Batel	h: 1 Matrix	:Solid		
Units: mg/kg	Date Analyzed: 02/01/11 16:55	SU	RROGATE RF	ECOVERY ?	STUDY	
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	+	0.0292	0.0300	97	80-120	 I
4-Bromofluorobenzene		0.0300	0.0300	100	80-120	I
Lab Batch #: 842121	Sample: 594720-1-BSD / B'	SD Batcl	h: ¹ Matrix:	:Solid		
Units: mg/kg	Date Analyzed: 02/01/11 17:18	SU!	RROGATE RF	ECOVERY S	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene		0.0294	0.0300	98	80-120	i
4-Bromofluorobenzene		0.0300	0.0300	100	80-120	
Lab Batch #: 842121	Sample: 594720-1-BLK / B	LK Batc	h: 1 Matrix	:Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 02/01/11 18:26	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluorobenzene	Analytes	0.0275	0.0300	92	80-120	i
4-Bromofluorobenzene		0.0276	0.0300	92	80-120	
Lah Batch #: 842121	Sample: 405303-001 / SMP	' Batc	h: 1 Matrix	: Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 02/01/11 19:57	SU	RROGATE RF	ECOVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1 4 Diffuerchanzana	Analytes	0.0249	0.0200	02	20.120	i
4-Bromofluorohenzene		0.0248	0.0300	07	80-120	
	9	0.0272	1 Matrix	0-:1	00-120	
	Sample: 403303-0027 Sim		n: 1 Iviau ix. RROGATE RJ	FCOVERY	STUDY	
BTE	X 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



Project Name: EK Queen Pearce

Vork Orders: 405303	\$,		Project II): 2008-113		
Lab Batch #: 842121	Sample: 405303-003 / SMP	Batel	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 02/01/11 23:20	SU	RROGATE RF	ECOVERY S	STUDY	
ВТЕ	X 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	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 02/02/11 00:05	SU	RROGATE RE	ECOVERY S	STUDY	
BTE	X 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	Batcl	h: 1 Matrix:	Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 02/02/11 01:34	SU	RROGATE RF	COVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluorobenzene	Anaryus	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene		0.2212	0.0300	737	80-120	*
Lab Batch #: 842121	Sample: 405303-006 / SMP	Batel	h: 1 Matrix:	: Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 02/02/11 02:19	SU	RROGATE RF	COVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			נען		
1,4-Difluorobenzene		0.0242	0.0300	81 501	80-120	**
4-Broinonuorobenzene	~ . 405202.007/CMD	0.1742	0.0300	201	80-120	-1
Lab Batch #: 842121	Sample: 405505-0077 SIVIE	Bater	h: 1 Maurix:	Soil	CTUDV	
Units: mg/kg	Date Analyzed: 02/02/11 03:03		KKUGAIL AL			
BTE	X 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



Project Name: EK Queen Pearce

Nork Orders: 405303	3,		Project II): 2008-113		
Lab Batch #: 842121	Sample: 405302-004 S / MS	S Batch	n: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 02/02/11 06:43	SUI	RROGATE RF	COVERY S	STUDY	
BTE	X 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	 I
4-Bromofluorobenzene		0.0284	0.0300	95	80-120	· · · · · · · · · · · · · · · · · · ·
Lab Batch #: 842121	Sample: 405302-004 SD / N	ASD Batch	h: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 02/02/11 07:05	SUI	RROGATE RF	COVERY S	STUDY	
ВТЕ	X 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 / B	KS Batcl	h: 1 Matrix	:Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 02/03/11 10:17	SU	RROGATE RF	ECOVERY ?	STUDY	
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0299	0.0300	100	80-120	
4-Bromofluorobenzene		0.0299	0.0300	100	80-120	
Lab Batch #: 842370	Sample: 594857-1-BSD / B	SD Batcl	h: 1 Matrix	:Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 02/03/11 11:23	SU	RROGATE RF	COVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	Anarytes	0.0298	0.0300	99	80-120	í
4-Bromofluorobenzene	- <u> </u>	0.0271	0.0300	90	80-120	
Lab Batch #: 842370	Sample: 594857-1-BLK / B	LK Batcl	h: 1 Matrix	:Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 02/03/11 12:07	SU	RROGATE RF	ECOVERY ?	STUDY	
BTE	X 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



Project Name: EK Queen Pearce

Nork Orders: 405303	<i>ډ</i> ,		Project II): 2008-113		
Lab Batch #: 842370	Sample: 405303-002 / DL	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 02/03/11 12:52	SU	RROGATE RF	COVERY	STUDY	
BTE	X 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	Batcl	h: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 02/03/11 13:14	SU	RROGATE RF	COVERY	STUDY	
BTE	X 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	Batcl	h: 1 Matrix:	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 02/03/11 13:37	SU!	RROGATE RF	COVERY	STUDY	
ВТЕ	X 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	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 02/03/11 13:59	SU	RROGATE RF	COVERY	STUDY	
BTE	X by EPA 8021	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 / MC) Batcl	h: 1 Matrix:	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 02/03/11 16:02	SU!	RROGATE RF	ECOVERY S	STUDY	
ВТЕ	X 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



Project Name: EK Queen Pearce

Lab Batch #: 842208 Sample: 944767-1-BKS / BKS Batch:: 1 Matrix: Solid Units: mg/kg Date Analyzed: Cu20/11 12:07 SURROGATE RECOVERY SUUT TPH by SW8015 Mod Amount [A] Faumount [A] True Amount [A] Recovery [B] Cutinal Summer [B] Fauge Probability 1-Choronoctane 85.6 101 85 70-135 - 0-Terphenyl 39.6 50.3 70 70-135 - Lab Batch #: 842208 Sample: 594767-1-BSD / BSD Batch:: 1 Matrix: Solid - TPH by SW8015 Mod Amount [A] Amount [A] Recovery [B] Control [B] Fauge Probability 1-Chlorooctane 86.7 100 87 70-135 - 1-Chlorooctane 86.7 100 87 70-135 - 1-Chlorooctane 83.3 50.0 77 70-135 - 1-Chlorooctane 72.6 100 73 70-135 - 1-Chlorooctane 72.6 100 73 <t< th=""><th>Work Orders: 405303</th><th>,</th><th></th><th>Project II</th><th>D: 2008-113</th><th></th><th></th></t<>	Work Orders: 405303	,		Project II	D: 2008-113		
Units: units: mg/kgDate Analyzed: 0202/11 12:00SURVEGATE RECOVERY SURVEY NodRecovery N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N 	Lab Batch #: 842208	Sample: 594767-1-BKS / B	KS Batel	h: ¹ Matrix:	Solid		
TPH by SW8015 Mod Analytes Amount [A] True Amount [B] True Amount [B] Recorry (B) (D) Control Linits (B) Flags 1-Chlorooctane 85.6 101 85 70-135 0-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 Flags 1-Chlorooctane 86.7 100 87 70-135 1-Chlorooctane 86.7 100 87 70-135 1-Chlorooctane 86.7 100 87 70-135 Lab Batch #: 842208 Sample: 594767-1-BLK / BLK Batch: 1 Matrix: Solid TPH by SW8015 Mod Analytes Amount Found [A] True Recovery Control Linits Flags 1-Chlorooctane 72.6 100 73 70-135 1-Chlorooctane 72.6 100 73 <td< th=""><th>Units: mg/kg</th><th>Date Analyzed: 02/02/11 12:50</th><th>SU</th><th>RROGATE RI</th><th>ECOVERY</th><th>STUDY</th><th></th></td<>	Units: mg/kg	Date Analyzed: 02/02/11 12:50	SU	RROGATE RI	ECOVERY	STUDY	
1-Chlorooctane 85.6 101 85 70-135 o-Terphenyl 39.6 50.3 79 70-135 Lab Batch #: 1 Matrix: Solid True Matrix: Solid Units: mg/kg Date Analyzet: 0.202/11 13:09 SURROGATE RECOVERY STUDY TPH by SW8015 Mod Amount [A1] Amount [B] Recovery % R Control Limits Flags 1-Chlorooctane 86.7 100 87 70-135 5.6 1-Chlorooctane 86.7 100 87 70-135 5.6 Lab Batch #: 842208 Sample: 594767-1-BLK / BLK Batch: 1 Matrix: Solid 5.6 Units: mg/kg Date Analyzet: 0.202/11 13:27 SURROGATE RECOVERY STUDY 5.6 TPH by SW8015 Mod Found [A1] Amount [B] Recovery % R Control miss % R 5.0 7.0 1.35 1-Chlorooctane 72.6 100 7.3 7.0 1.35 1-Chlorooctane 72.6 100 7.3 <	ТРН	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 [A] True [B] Recovery 5%R Control 5%R Flags 5%R 1-Chlorooctane 86.7 100 87 70-135 - 1-Chlorooctane 86.7 100 87 70-135 - 1-Chlorooctane 38.3 50.0 77 70-135 - Lab Batch #: 842208 Sample: 594767-1-BLK / BLK Batch:: 1 Matrix: Solid - TPH by SW8015 Mod Amount [A] Amount [B] Recovery 5%R Charits 5%R Flags 5%R 1-Chlorooctane 72.6 100 73 70-135 - 1-Chlorooctane 72.6 100 73 70-135 - 1-Chlorooctane 72.6 100 73 70-135 - 1-Chlorooctane 1	1-Chlorooctane		85.6	101	85	70-135	
Lab Batch #: 842208 Sample: 594767-1-BSD / BSD Bate: 1 Matrix: Solt Units: mg/kg Date Analyzed: 02/02/11 13:09 SURFOGATE RECVERS/SUDY TPH by SW8015 Mod Amount Found 0. True Amount Found 0. True Amount BI Recovery %R (D) Control 1.5% Flags 1-Chlorooctane 86.7 100 87 70-135 0 0-Terphenyl Sample: 594767-1-BLK / BLK Batch: 1 Matrix: Solid 70-135 0 Lab Batch #: 842208 Sample: 594767-1-BLK / BLK Batch: 1 Matrix: Solid 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135	o-Terphenyl		39.6	50.3	79	70-135	
Units: mg/kg Date Analyzed: 02/02/11 SURROGATE RECOVERY STUDY TPH by SW8015 Mod Amount (A) Frae Amount (B) True Amount (B) Recovery % R (D) Control Linits % R Flags 1-Chlorooctane 86.7 100 87 70-135 - 0-Terphenyl 38.3 50.00 77 70-135 - Lab Batch #: 842208 Sample: 594767-1-BLK / BLK Batch: 1 Matrix: Solid - Units: mg/kg Date Analyzed: 02/02/11 38.3 50.0 77 70-135 Lab Batch #: 84208 Sample: 594767-1-BLK / BLK Batch: 1 Matrix: Solid Flags TPH by SW8015 Mod Amount (A) True Amount (B) Recovery % R (D) Control % R (D) Flags 1-Chlorooctane 72.6 100 73 70-135 - Lab Batch #: 842208 Sample: 405303-001 / SMP Batch: 1 Matrix:Soil - Lab Batch #: 842208 Sample: 405303-002 / SMP True (A) Recovery % R (D)	Lab Batch #: 842208	Sample: 594767-1-BSD / B	SD Batcl	h: 1 Matrix:	Solid		
TPH by SW8015 Mod Analytes Amount [A] True Amount [B] True Mnount [B] Recovery % R [D] Control Limits % R [D] Flags % R [D] 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 - TPH by SW8015 Mod Analytes Amount [A] True Amount [B] Recovery % R [D] Control Limits 70-135 Flags % R [D] 1-Chlorooctane 72.6 100 73 70-135 - 1-Chlorooctane 72.6 100 73 70-135 - 1-Chlorooctane 72.6 100 73 70-135 - Lab Batch #: 842208 Sample: 405303-001 / SMP Analytes Batch: 1 Matrix: Soil - 1-Chlorooctane 70-135 - - - - - 1-Chlorooctane 89.8 100 90 70-135 - 1-Chlorooctane <td< td=""><td>Units: mg/kg</td><td>Date Analyzed: 02/02/11 13:09</td><td>SU</td><td>RROGATE RI</td><td>ECOVERY</td><td>STUDY</td><td></td></td<>	Units: mg/kg	Date Analyzed: 02/02/11 13:09	SU	RROGATE RI	ECOVERY	STUDY	
I-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 [A] True [B] Matrix: Solid Flags 1-Chlorooctane 02/02/11 13:27 Amount [B] Recovery %R Control Limits %R Flags 1-Chlorooctane 72.6 100 73 70-135 - 1-Chlorooctane 72.6 100 73 70-135 - 1-Chlorooctane 72.6 100 73 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 - - 1-Chlorooctane 89.8 100 90 70-135 - - 1-Chlorooctane <t< td=""><td>ТРН</td><td>by SW8015 Mod Analytes</td><td>Amount Found [A]</td><td>True Amount [B]</td><td>Recovery %R [D]</td><td>Control Limits %R</td><td>Flags</td></t<>	ТРН	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 SUEROGATE RECOVERY STUDY TPH by SW8015 Mod Amount [A] Tre Amount [A] Matrix: Solid Control Limits Plags 1-Chlorooctane 72.6 100 73 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135 70-135	1-Chlorooctane		86.7	100	87	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 [A] True Amount [A] Recovery (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 Flags Flags Units: mg/kg Date Analyzed: 02/02/11 16:30 SURROGATE RECOVERY STUDY - TPH by SW8015 Mod Amount [A] True Amount [A] Recovery %R Control Limits %R Flags 1-Chlorooctane 89.8 100 90 70-135 - 1-Chlorooctane 89.8 100 90 70-135 - Lobatch #: 842208 Sample: 405303-002 / SMP Batch: 1 Matrix: Soil <td< td=""><td>o-Terphenyl</td><td></td><td>38.3</td><td>50.0</td><td>77</td><td>70-135</td><td></td></td<>	o-Terphenyl		38.3	50.0	77	70-135	
Units: mg/kg Date Analyzed: 02/02/11 13:27 SURROGATE RECOVERY STUDY TPH by SW8015 Mod Amount [A] True Amount [A] True Amount [B] Recovery %R 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 TUDY Inst: mg/kg Date Analyzed: 02/02/11 16:30 SURROGATE RECOVERY TUDY TPH by SW8015 Mod Amount [A] True [B] Recovery %R Control Limits [B] Flags 1-Chlorooctane 89.8 100 90 70-135 - o-Terphenyl 45.1 50.0 90 70-135 - Lab Batch #: 89.8 100 90 70-135	Lab Batch #: 842208	Sample: 594767-1-BLK / B	LK Batc	h: ¹ Matrix:	Solid	<u>, </u>	
TPH by SW8015 Mod 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 Recovery %R [D] Control Limits %R Flags 1-Chlorooctane 02/02/11 16:30 SURROGATE Recovery %R [D] Control Limits %R Flags 1-Chlorooctane 02/02/11 16:30 Surrod 45.1 50.0 90 70-135 1-Chlorooctane 89.8 100 90 70-135 - c-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	Units: mg/kg	Date Analyzed: 02/02/11 13:27	SU	RROGATE RI	ECOVERY	STUDY	
I-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 Flags TPH by SW8015 Mod Amount [A] True [B] Recovery %R [D] Control Limits %R [D] Flags 1-Chlorooctane 89.8 100 90 70-135 1-Chlorooctane 89.8 100 90 70-135 0-Terphenyl 45.1 50.0 90 70-135 Lab Batch #: 842208 Sample: 405303-002 / SMP Batch: 1 Matrix: Soil Lab Batch #: 842208 Sample: 405303-002 / SMP Batch: 1 Matrix: Soil Lab Batch #: 842208 Sample: 405303-002 / SMP Batch: 1 Matrix: Soil Lab Batch #: 842208 Sample: 405303-002 / SMP Batch: 1 Matrix: Soil	ТРН	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 Flags TPH by SW8015 Mod Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1-Chlorooctane 89.8 100 90 70-135 Lab Batch #: 842208 Sample: 405303-002 / SMP Batch: 1 Matrix: Soil Flags Units: mg/kg Date Analyzed: 02/02/11 17:07 SURROGATE RECOVERY STUDY Flags Units: mg/kg Date Analyzed: 02/02/11 17:07 SURROGATE RECOVERY STUDY Flags TPH by SW8015 Mod Amount [A] True Amount [A] Recovery %R Control Limits %R Flags 1-Chlorooctane Date Analyzed: 02/02/11 17:07 SURROGATE RECOVERY STUDY Flags 1-Chlorooctane Inalytes Inalytes Inalytes Flags 1-Chlorooctane Inalytes Inalytes Inalytes Inalytes Flags <td>1-Chlorooctane</td> <td></td> <td>72.6</td> <td>100</td> <td>73</td> <td>70-135</td> <td></td>	1-Chlorooctane		72.6	100	73	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 Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1-Chlorooctane 89.8 100 90 70-135 - 0-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 Amount Found [A] True Amount [A] Matrix: Soil - TPH by SW8015 Mod Amalytes - - - - 1-Chlorooctane 108 99.9 108 70-135 1-Chlorooctane 108 99.9 108 70-135 1-Chlorooctane 108 99.9 108 70-135	o-Terphenyl		36.3	50.1	72	70-135	
Units: mg/kgDate Analyzed: 02/02/11 16:30SURROGATE RECOVERY STUDYTPH by SW8015 ModAmount Found [A]True Amount [B]Recovery %R [D]Control Limits %RFlags1-Chlorooctane89.81009070-135o-Terphenyl45.150.09070-135Lab Batch #: 842208Sample: 405303-002 / SMP Date Analyzed: 02/02/11 17:07Batch:1Matrix: SoilTPH by SW8015 ModAmount Found [A]True Amount [B]Recovery %R [D]Control Limits %RFlags1-Chlorooctane10899.910870-1351-Chlorooctane10899.910870-135	Lab Batch #: 842208	Sample: 405303-001 / SMF	Batcl	h: 1 Matrix:	Soil	<u>, </u>	
TPH by SW8015 ModAmount Found [A]True Amount [B]Recovery %R [D]Control Limits %RFlags1-Chlorooctane89.81009070-135o-Terphenyl45.150.09070-135Lab Batch #: 842208Sample: 405303-002 / SMP Date Analyzed: 02/02/11 17:07Batch: 11Matrix: SoilTPH by SW8015 ModAmount Found [A]True Amount Found [A]Control 0Flags1-Chlorooctane10899.910870-1351-Chlorooctane10899.910870-135	Units: mg/kg	Date Analyzed: 02/02/11 16:30	SU	RROGATE RI	ECOVERY	STUDY	
Interference Interference<	ТРН	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 Found Image: Im	1-Chlorooctane		89.8	100	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 Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1-Chlorooctane 108 99.9 108 70-135	o-Terphenyl		45.1	50.0	90	70-135	
Units: mg/kg Date Analyzed: 02/02/11 17:07 SURROGATE RECOVERY STUDY TPH by SW8015 Mod Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Flags Analytes 108 99.9 108 70-135 o-Terphenyl 54.6 50.0 109 70-135	Lab Batch #: 842208	Sample: 405303-002 / SMF	Batcl	h: 1 Matrix:	Soil	<u> </u>	
TPH by SW8015 ModAmount Found [A]True Amount [B]Control Limits %R [D]Flags1-Chlorooctane10899.910870-135o-Terphenyl54.650.010970-135	Units: mg/kg	Date Analyzed: 02/02/11 17:07	SU	RROGATE RI	ECOVERY	STUDY	
1-Chlorooctane 108 99.9 108 70-135 o-Terphenyl 54.6 50.0 109 70-135	ТРН	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl 54.6 50.0 109 70-135	1-Chlorooctane	<u>-</u>	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



Project Name: EK Queen Pearce

Work Orders: 405303	,		Project II	D: 2008-113		
Lab Batch #: 842208	Sample: 405303-003 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 02/02/11 17:25	SU	RROGATE RI	ECOVERY	STUDY	
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		98.4	99.8	99	70-135	
o-Terphenyl		52.3	49.9	105	70-135	
Lab Batch #: 842208	Sample: 405303-004 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 02/02/11 17:43	SU	RROGATE RI	ECOVERY	STUDY	
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		113	99.7	113	70-135	
o-Terphenyl		59.6	49.9	119	70-135	
Lab Batch #: 842208	Sample: 405303-005 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 02/02/11 18:01	SU	RROGATE RI	ECOVERY	STUDY	
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		118	100	118	70-135	
o-Terphenyl		58.6	50.0	117	70-135	
Lab Batch #: 842208	Sample: 405303-006 / SMP	Batc	h: 1 Matrix	Soil		
Units: mg/kg	Date Analyzed: 02/02/11 18:20	SU	RROGATE RI	ECOVERY	STUDY	
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			נטן		
1-Chlorooctane		117	99.7	117	70-135	
0-Terpnenyi		59.1	49.9	118	70-135	
Lab Batch #: 842208	Sample: 405303-007 / SMP	Batc	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 02/02/11 18:38	50	KRUGATE RE			
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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





Project Name: EK Queen Pearce

Work Order #: 405303							Pro	ject ID: 2	2008-113		
Analyst: ASA	Da	ate Prepar	ed: 02/01/201	1			Date A	nalyzed: (02/01/2011		
Lab Batch ID: 842121 Sample: 594720-1-	BKS	Batcl	n#: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUD	Y	
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	<0.0010	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	0.0075	00	0.1000	0.0000	100	2	71 122	25	
0 Aylone	<0.0010	0.1000	0.0975	98	0.1000	0.0999	100	2	/1-135	- 35	
Analyst: ASA	<0.0010 Da	ate Prepar	ed: 02/03/201	98	0.1000	0.0999	Date A	nalyzed: ()2/03/2011		
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1-	ZO.0010 Da BKS	ate Prepar Batcl	ed: 02/03/201	98	0.1000	0.0999	Date A	nalyzed: (Matrix: S)2/03/2011 Solid	- 33	
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1- Units: ^{mg/kg}	CO.0010 Da BKS	ate Prepar Batcl BLAN	ed: 02/03/201 n #: 1 K /BLANK \$	98 1 5 PIKE / I	BLANK S	SPIKE DUPI	Date A	nalyzed: (Matrix: S RECOVI)2/03/2011 Solid ERY STUD)Y	
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1- Units: mg/kg BTEX by EPA 8021 Analytes	CO.0010 Da BKS Blank Sample Result [A]	ate Prepar Batcl BLAN Spike Added [B]	0.0975 ed: 02/03/201 n #: 1 K /BLANK S Blank Spike Result [C]	1 SPIKE / I Blank Spike %R [D]	BLANK S Spike Added [E]	Blank Spike Duplicate Result [F]	Date An Date An LICATE D Blk. Spk Dup. %R [G]	nalyzed: () Matrix: S RECOVI	2/03/2011 Solid Control Limits %R	VY Control Limits %RPD	Flag
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1- Units: ^{mg/kg} BTEX by EPA 8021 Analytes Benzene	COOLO DE CONTRACTO	o.1000 ate Prepar Batcl BLAN Spike Added [B] 0.0998	0.0975 ed: 02/03/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.0861	1 SPIKE / I Blank Spike %R [D] 86	BLANK S Spike Added [E] 0.1000	Blank Spike Duplicate Result [F] 0.0959	Date A Date A LICATE D Blk. Spk Dup. %R [G] 96	nalyzed: (Matrix: S RECOVH RPD % 11	2/03/2011 Solid ERY STUD Control Limits %R 70-130	Control Limits %RPD 35	Flag
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1- Units: mg/kg BTEX by EPA 8021 Analytes Benzene Toluene	C.0010 Da BKS Blank Sample Result [A] <0.0010 <0.0010 <0.0020	0.1000 ate Prepar Batcl BLAN Spike Added [B] 0.0998 0.0998	0.0973 ed: 02/03/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.0861 0.0840	98 1 SPIKE / I Blank Spike %R [D] 86 84	Spike Added [E] 0.1000	Blank Spike DUPI Blank Spike Duplicate Result [F] 0.0959 0.0925	Blk. Spk %R [G] 96 93	2 nalyzed: () Matrix: S RECOVH % 11 10	2/03/2011 Solid Control Limits %R 70-130 70-130	Y Control Limits %RPD 35 35	Flag
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1- Units: ^{mg/kg} BTEX by EPA 8021 Analytes Benzene Toluene Ethylbenzene	C0.0010 Da BKS Blank Sample Result [A] <0.0010 <0.0020 <0.0010 <0.0010	0.1000 ate Prepar Batcl BLAN Spike Added [B] 0.0998 0.0998 0.0998	0.0975 ed: 02/03/201 n #: 1 K /BLANK \$ Blank Spike Result [C] 0.0861 0.0840 0.0822	98 1 SPIKE / I Blank Spike %R [D] 86 84 82	Spike Added [E] 0.1000 0.1000	Blank Spike Duplicate Result [F] 0.0925 0.0886	Bik. Spk Bik. Spk 000 %R [G] 96 93 89	2 nalyzed: (Matrix: \$ RECOVI % 11 10 7	2/03/2011 Solid ERY STUD Limits %R 70-130 70-130 71-129	VY Control Limits %RPD 35 35 35	Flag
Analyst: ASA Lab Batch ID: 842370 Sample: 594857-1- Units: mg/kg BTEX by EPA 8021 Analytes Benzene Toluene Ethylbenzene m_p-Xylenes	C.0010 Date: Constraint of Co	0.1000 ate Prepar Batcl BLAN Spike Added [B] 0.0998 0.0998 0.0998 0.1996	0.0973 ed: 02/03/201 n #: 1 K /BLANK \$ Blank Spike Result [C] 0.0861 0.0840 0.0822 0.1607	98 1 SPIKE / I Blank Spike %R [D] 86 84 82 81	Spike Added [E] 0.1000 0.1000 0.1000 0.1000 0.1000	0.0999 PIKE DUPI Blank Spike Duplicate Result [F] 0.0959 0.0925 0.0886 0.1740	Bik. Spk 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000	2 nalyzed: (Matrix: \$ RECOVI % 11 10 7 8	Control Limits %R 70-130 71-129 70-135	S3 Y Control Limits %RPD 35 35 35 35 35 35 35	Flag

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							Pro	ect ID: 2	2008-113		
Analyst: LATCOR	Da	ite Prepare	ed: 02/02/201	1			Date A	nalyzed: 0	2/02/2011		
Lab Batch ID: 842217 Sample: 842217-1-	BKS	Batch	1#: 1					Matrix: S	olid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / B	LANK S	PIKE DUPL	JCATE J	RECOVE	RY STUD	Y	
Inorganic Anions In Soil by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	<0.420	10.0	11.2	112	10.0	11.3	113	1	75-125	20	
Analyst: BEV	Da	ite Prepare	ed: 02/02/201	1			Date A	nalyzed: 0	2/02/2011		
Analyst: BEV Lab Batch ID: 842208 Sample: 594767-1-1	Da BKS	ate Preparo Batch	ed: 02/02/201 1#: 1	.1			Date A1	1alyzed: 0 Matrix: S	02/02/2011 olid		
Analyst: BEV Lab Batch ID: 842208 Sample: 594767-1- Units: ^{mg/kg}	Da BKS	ate Prepar Batch BLANI	ed: 02/02/201 1#: 1 K /BLANK S	.1 PIKE / B	LANK S	PIKE DUPL	Date A	nalyzed: 0 Matrix: S RECOVE	02/02/2011 Iolid Z RY STUD	Y	
Analyst: BEV Lab Batch ID: 842208 Sample: 594767-1- Units: ^{mg/kg} TPH by SW8015 Mod Analytes	Da BKS Blank Sample Result [A]	ate Prepara Batch BLANI Spike Added [B]	ed: 02/02/201 n #: 1 K /BLANK S Blank Spike Result [C]	1 SPIKE / E Blank Spike %R [D]	BLANK S Spike Added [E]	PIKE DUPI Blank Spike Duplicate Result [F]	Date A	nalyzed: 0 Matrix: S RECOVE RPD %	2/02/2011 Solid CRY STUD Control Limits %R	Control Limits %RPD	Flag
Analyst: BEV Lab Batch ID: 842208 Sample: 594767-1- Units: mg/kg TPH by SW8015 Mod Analytes C6-C12 Gasoline Range Hydrocarbons	Dr BKS Blank Sample Result [A] <50.1	ate Prepar Batch BLAN Spike Added [B] 1010	ed: 02/02/201 n #: 1 K /BLANK S Blank Spike Result [C] 890	1 SPIKE / E Blank Spike %R [D] 88	BLANK S Spike Added [E] 1000	PIKE DUPL Blank Spike Duplicate Result [F] 932	Date A	nalyzed: 0 Matrix: S RECOVE	2/02/2011 Solid CRY STUD Control Limits %R 70-135	VY Control Limits %RPD 35	Flag

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



Work Order #: 405303

Form 3 - MS Recoveries

Project Name: EK Queen Pearce



Lab Batch #: 842217			Pro	oject ID:	2008-113	
Date Analyzed: 02/02/2011 Date	Prepared: 02/02	2/2011	A	nalyst: L	ATCOR	
QC- Sample ID: 405302-001 S	Batch #: 1		I	Matrix: So	oil	
Reporting Units: mg/kg	MATE	RIX / MA'	TRIX SPIKE	RECOV	ERY STU	DY
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes	[A]	[B]				
Chloride	23.1	109	125	93	75-125	

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

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries

Project Name: EK Queen Pearce



Work Order #: 405303						Project II	D: 2008-1	13			
Lab Batch ID: 842121 Q Date Analyzed: 02/02/2011 D Reporting Units: mg/kg D	QC- Sample ID: Date Prepared:	405302- 02/01/20 M	004 S 011 ATRIX SPIKI	Ba An E / MAT	tch #: alyst: RIX SPI	1 Matrix ASA KE DUPLICA	x: Soil TE REC	OVERYS	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	Х
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)/BRelative 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 I	D: 2008-113	3
Date Analyzed: 02/03/2011 16:02 Date Prepare	ed: 02/03/2011	Ana	lyst:ASA		
QC- Sample ID: 405600-001 D Batcl	n#: 1	Mat	t rix: Soil		
Reporting Units: mg/kg	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 #: 042217Date Analyzed: 02/02/2011 09:30Date PreparQC- Sample ID: 405302-001 DBatchReporting Units: mg/kg	ed: 02/02/2011 n #: 1 SAMPLE	Ana Mat SAMPLE	lyst:LATC trix: Soil DUPLIC	COR	OVERY
Inorganic Anions In Soil by E300 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	23.1	17.0	30	20	F
Lab Batch #: 842042 Date Analyzed: 02/01/2011 17:00 Date Prepar QC- Sample ID: 405302-001 D Batch	ed:02/01/2011	Ana Mat	lyst: WRU t rix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	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 Labor	atories									Ċ	HAIN	. OF (SUS	-VDV	ECO	RD,	D N	ANA	T ASI	S RE	QUES	F			
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Company Address:	P. O. Box 301														Projec	ct Loc	: Ee	Cour	ıty, N	Σ					ļ
Citv/State/Zip:	Lovington, NM 882	60						ļ								PO	A H	۸. ا	Henry						l
Telephone No:	(575)396-2378					Fax No:	(2	75) 3(<u>)6-14:</u>	ត្ត				Repo	rt For	mat:	×	Stanc	lard] trr	٥	ž	DES	
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XENCO Laboratories

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

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Basiv	Env.	1 Plains	>
Date/Time:	·31·11	16:40	
Lab ID # :	4053	03	
Initials:	PE.	-	

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 property preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	(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 /. 6 °C lbs °C lbs °	C lbs	°	lbs	°C

	Nonconformance Documentation	
Contact:	Contacted by: Date/Time:	
Regarding:		
Corrective Action Tak	en:	
· · ·		
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 Tucson (EPA Lab code: AZ00989): Arizona (AZ0758)



01-FEB-12

AND ACCREDING

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. 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 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

XENCO Laboratories

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 Name: EK Queen Pearce



Date Received in Lab: Wed Jan-25-12 03:15 pm

Contact: Jason Henry **Project Location:** Lea County, NM

Project Id: 2008-113

Report Date: 01-FEB-12

								Project Ma	nager:	Brent Barron	Π		
	Lab Id:	435671-	001	435671-0	002	435671-	003	435671-	004	435671-	005	435671-	006
Amaluaia Dogwostad	Field Id:	SB-8 @	20'	SB-8 @	25'	SB-8 @	30'	SB-8 @	35'	SB-8 @	40'	SB-8 @	45'
Analysis Kequesiea	Depth:												
	Matrix:	SOII	_	SOIL		SOII	_	SOII	,	SOIL		SOIL	
	Sampled:	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	Extracted:	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
	Analyzed:	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
	Units/RL:	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	Extracted:												
	Analyzed:	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
	Units/RL:	%	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	Extracted:	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
	Analyzed:	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
	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		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

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Project Id: 2008-113

Contact: Jason Henry

Certificate of Analysis Summary 435671

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed Jan-25-12 03:15 pm

Report Date: 01-FEB-12

oiect Location: Lea County, NM								Report	Date:	01-FEB-12	
								Project Ma	nager:	Brent Barron II	
	Lab Id:	435671-0	007	435671-(008	435671-0	09	435671-0	010		
A malusia Doan sated	Field Id:	SB-8 @	50'	SB-8 @ 3	55"	SB-8 @ 6	50'	SB-8 @	65'		
Analysis Kequesiea	Depth:										
	Matrix:	SOIL	,	SOIL		SOIL		SOIL			
	Sampled:	Jan-20-12	15:00	Jan-20-12	15:05	Jan-20-12 1	5:25	Jan-20-12	15:30		
BTEX by EPA 8021B	Extracted:	Jan-27-12	16:00	Jan-27-12	16:00	Jan-27-12 1	6:00	Jan-27-12	16:00		
	Analyzed:	Jan-28-12	18:27	Jan-28-12	19:13	Jan-28-12 1	9:35	Jan-28-12	20:44		
	Units/RL:	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	Extracted:										
	Analyzed:	Jan-26-12	08:30	Jan-26-12 (08:30	Jan-26-12 0	8:30	Jan-26-12	08:30		
	Units/RL:	%	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	Extracted:	Jan-26-12	13:35	Jan-26-12	13:35	Jan-26-12 1	3:35	Jan-26-12	13:35		
	Analyzed:	Jan-30-12	18:58	Jan-30-12	19:25	Jan-30-12 1	9:51	Jan-30-12	20:18		
	Units/RL:	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		

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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.
- RPD exceeded lab control limits. F
- The target analyte was positively identified below the quantitation limit and above the detection limit. J
- 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 NEL	AC 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	

Phor (281)



Project Name: EK Queen Pearce

Vork Orders: 435671	,		Project II): 2008-113		
Lab Batch #: 879921	Sample: 435671-001 / SMP	Batch: 1 Matrix: Soil				
Units: mg/kg	Date Analyzed: 01/26/12 21:28	SU	RROGATE RF	ECOVERY S	STUDY	
BTEX	K 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		0.0295	0.0300	98	80-120	
Lab Batch #: 880041	Sample: 435671-004 / SMP	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/28/12 08:55	SU	RROGATE RE	COVERY S	STUDY	
BTEX	K 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		0.186	0.0300	620	80-120	*
Lab Batch #: 880133	Sample: 435671-001 / SMP	Batcl	h: ¹ Matrix:	Soil	<u>ı </u>	
Units: mg/kg	Date Analyzed: 01/28/12 14:42	SU	RROGATE RF	ECOVERY	STUDY	
ТРН І	TPH By SW8015 Mod		True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	Thinky ve.	89.4	100	89	70-135	
o-Terphenyl		47.7	50.0	95	70-135	
Lab Batch #: 880037	Sample: 435671-007 / SMP	Batcl	h: 1 Matrix:	Soil	<u>.</u> .	
Units: mg/kg	Date Analyzed: 01/28/12 18:27	SU	RROGATE RF	COVERY	STUDY	
BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1.4 Difluorohenzene	Analytes	0.0221	0.0200	77	°0 120	**
4-Bromofluorobenzene		0.0231	0.0300	500	80-120	**
Lab Ratch #: 880037		Batc	h· 1 Matrix:	• Soil		
Units: mg/kg	Date Analyzed: 01/28/12 19:13	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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



Project Name: EK Queen Pearce

Work Orders : 435671	,	Project ID: 2008-113					
Lab Batch #: 880037	Sample: 435671-009 / SMP	Batcl	h: ¹ Matrix:	Soil			
Units: mg/kg	Date Analyzed: 01/28/12 19:35	SU	RROGATE RE	ECOVERY S	STUDY		
BTEX	X 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	Batcl	h: ¹ Matrix:	Soil			
Units: mg/kg	Date Analyzed: 01/28/12 20:44	SU	RROGATE RE	ECOVERY S	STUDY		
BTEX by EPA 8021B Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	-	0.0241	0.0300	80	80-120		
4-Bromofluorobenzene		0.0695	0.0300	232	80-120	**	
Lab Batch #: 880133	Sample: 435671-002 / SMP	Batcl	h: 1 Matrix:	Soil	·		
Units: mg/kg	Date Analyzed: 01/30/12 16:43	SU	RROGATE RE	ECOVERY S	STUDY		
TPH	By SW8015 Mod	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	Batc	h: 1 Matrix:	Soil	I		
Units: mg/kg	Date Analyzed: 01/30/12 17:10	SU	RROGATE RE	ECOVERY S	STUDY		
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
1-Chlorooctane		128	99.5	129	70-135		
o-Terphenyl		49.1	49.8	99	70-135		
Lab Batch #: 880133	Sample: 435671-004 / SMP	Batcl	h: 1 Matrix:	Soil			
Units: mg/kg	Date Analyzed: 01/30/12 17:37	SU	RROGATE RE	ECOVERY S	STUDY		
TPH I	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



Project Name: EK Queen Pearce

Work Orders : 435671	,	Project ID: 2008-113					
Lab Batch #: 880133	Sample: 435671-005 / SMP	Bate	h: ¹ Matrix:	Soil			
Units: mg/kg	Date Analyzed: 01/30/12 18:04	SU	RROGATE RI	ECOVERY	STUDY		
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		107	100	107	70-135		
o-Terphenyl		53.7	50.2	107	70-135		
Lab Batch #: 880133	Sample: 435671-006 / SMP	Batc	h: 1 Matrix:	Soil			
Units: mg/kg	Date Analyzed: 01/30/12 18:31	SU	RROGATE RI	ECOVERY	STUDY		
TPH By SW8015 Mod Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		127	99.9	127	70-135		
o-Terphenyl		54.7	50.0	109	70-135		
Lab Batch #: 880133	Sample: 435671-007 / SMP	Batc	h: 1 Matrix:	Soil	<u>.</u>		
Units: mg/kg	Units: mg/kg Date Analyzed: 01/30/12 18:58 SURROGATE RECOVERY STUDY						
TPH	TPH By SW8015 Mod		True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1 Chlorooctane	Analytes	165	100	165	70.125	alcalc	
o-Terphenyl		59.0	50.1	105	70-135		
Lab Batab # 990122	Serverla: 425671.009 / SMD		b. 1 Motriv	Soil	70 155		
Lab Balch #: 000135	Date Applyzed: 01/20/12 10:25						
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
1-Chlorooctane		171	99.5	172	70-135	**	
o-Terphenyl		65.8	49.8	132	70-135		
Lab Batch #: 880133	Sample: 435671-009 / SMP	Batc	h: ¹ Matrix:	Soil			
Units: mg/kg	Date Analyzed: 01/30/12 19:51	SU	RROGATE RI	ECOVERY	STUDY		
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		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



Project Name: EK Queen Pearce

Vork Orders : 435671	,		Project II): 2008-113		
Lab Batch #: 880133	Sample: 435671-010 / SMP	Batch	ttch: 1 Matrix: Soil			
Units: mg/kg	Date Analyzed: 01/30/12 20:18	SU!	RROGATE RF	ECOVERY S	STUDY	
ТРН І	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	Batcl	h: ¹ Matrix:	Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 01/31/12 19:52	SU	RROGATE RE	COVERY S	STUDY	
ВТЕХ	X 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	Batcl	h: 1 Matrix:	Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 01/31/12 20:15	SU!	RROGATE RF	ECOVERY S	STUDY	
BTEX by EPA 8021B		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	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/31/12 21:01	SU	RROGATE RE	COVERY S	STUDY	
втех	X 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	Batcl	h: 1 Matrix:	Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 01/31/12 21:24	SU	RROGATE RE	ECOVERY S	STUDY	
ВТЕХ	X 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



Project Name: EK Queen Pearce

Nork Orders : 435671	- ,		Project II	J: 2008-113		
Lab Batch #: 880171	Sample: 435671-006 / SMP	Batch	: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/31/12 21:46	SUP	ROGATE RF	COVERY S	STUDY	
ВТЕХ	۲ by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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 / B	LK Batch	.: 1 Matrix	:Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 01/26/12 19:57	SUF	ROGATE RF	ECOVERY F	STUDY	
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluorobenzene	Analytes	0.0288	0.0300	06	80-120	i
4-Bromofluorobenzene		0.0275	0.0300	90	80-120	1
T ah Datah #. 880041	Sample: 617121-1-BLK / B	TK Batch	- 1 Matrix	Solid		
Lab Dattin #. 000011	Date Analyzed: 01/27/12 23:33	27/12 23:33 SURROGATE RECOVERY STUDY				
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		I
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 / B!	LK Batch	: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 01/28/12 09:02		ROGATE RF	COVERY S	STUDY	
TPH I	By SW8015 Mod Analvtes	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 #: 880037	Sample: 617120-1-BLK / B'	LK Batch	a: 1 Matrix	:Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 01/28/12 11:54	SUP	ROGATE RF	ECOVERY 5	STUDY	
BTEX	۲ 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	i
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



Project Name: EK Queen Pearce

Vork Orders: 435671	1,		Project II	J: 2008-113		
Lab Batch #: 880171	Sample: 617208-1-BLK / B	LK Batcl	a: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 01/31/12 13:02	SU	RROGATE RF	COVERY S	STUDY	
BTEX	X 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	i
4-Bromofluorobenzene		0.0327	0.0300	109	80-120	·
Lab Batch #: 879921	Sample: 617047-1-BKS / B	KS Batcl	h: 1 Matrix	Solid		
Units: mg/kg	Date Analyzed: 01/26/12 18:26	SU	RROGATE RF	COVERY S	STUDY	
BTEX	X by EPA 8021B	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	ļ	0.0335	0.0300	112	80-120	
Lah Batch #: 880041	Sample: 617121-1-BKS / B	KS Batcl	h: 1 Matrix	• Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 01/27/12 22:02	SU!	RROGATE RF	ECOVERY (STUDY	
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluorobenzene		0.0292	0.0300	97	80-120	í
4-Bromofluorobenzene		0.0296	0.0300	99	80-120	
Lab Batch #: 880133	Sample: 617186-1-BKS / B	KS Batcl	h: 1 Matrix	:Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 01/28/12 08:13	SU!	RROGATE RF	ECOVERY ?	STUDY	
TPH]	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes		ļ !	լոյ		<u> </u>
1-Chlorooctane		93.8	100	94	70-135	<u> </u>
o-Terphenyl		39.1	50.0	78	70-135	. <u> </u>
Lab Batch #: 880037	Sample: 617120-1-BKS / B [*]	KS Batch	n: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 01/28/12 10:25	SUI	RROGATE RE	COVERY S	STUDY	
ВТЕУ	X 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	i
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



Project Name: EK Queen Pearce

Vork Orders: 435671	· •		Project II): 2008-113		
Lab Batch #: 880171	Sample: 617208-1-BKS / B	KS Batel	h: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 01/31/12 11:53	SU!	RROGATE RF	COVERY	STUDY	
BTEX	X 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	 I
4-Bromofluorobenzene		0.0347	0.0300	116	80-120	
Lab Batch #: 879921	Sample: 617047-1-BSD / B	SD Batcl	h: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 01/26/12 18:49	SU!	RROGATE RF	COVERY	STUDY	
ВТЕУ	X by EPA 8021B	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	
Lah Batch #: 880041	Sample: 617121-1-BSD / B	SD Batc	h: 1 Matrix	Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 01/27/12 22:24	SU	RROGATE RI	COVERY (STUDY	
BTEX	X 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 / B	SD Batel	h: 1 Matrix	Solid	<u>.</u>	
Units: mg/kg	Date Analyzed: 01/28/12 08:38	SU	RROGATE RF	COVERY S	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes					
1-Chlorooctane			100	101	70-135	
o-Terpnenyi		40.8	50.0	94	7/0-155	
Lab Batch #: 880037	Sample: 61/120-1-BSD / B;	SD Batch	h: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 01/28/12 10:47	50	RRUGAIE KE			
BTEX	K 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



Project Name: EK Queen Pearce

Vork Orders : 435671	• •		Project II	D: 2008-113		
Lab Batch #: 880171	Sample: 617208-1-BSD / BS	SD Batel	h: 1 Matrix	:Solid		
Units: mg/kg	Date Analyzed: 01/31/12 12:16	SU!	RROGATE RF	ECOVERY S	STUDY	
BTEX	X 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	Batcl	h: 1 Matrix	:Soil		
Units: mg/kg	Date Analyzed: 01/26/12 22:59	SU!	RROGATE RF	ECOVERY S	STUDY	
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0311	0.0300	104	80-120	[
4-Bromofluorobenzene		0.0315	0.0300	105	80-120	
Lab Batch #: 880041	Sample: 435769-004 S / MS	, Batc	h: 1 Matrix	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 01/28/12 03:42	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX	X 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	Batcl	h: 1 Matrix	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 01/28/12 16:10	SU	RROGATE RF	ECOVERY S	STUDY	
ВТЕУ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	Analytes	0.0290	0.0300	07	80-120	
4-Bromofluorobenzene		0.0238	0.0300	113	80-120	
Lab Batch #: 880133	Sample: 435520-006 S / MS	Batc	h: 1 Matrix	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 01/28/12 19:05	SU	RROGATE RI	ECOVERY !	STUDY	
ТРН І	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	i
o-Terphenyl		46.2	49.8	93	70-135	1

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: EK Queen Pearce

Nork Orders: 435671	· •		Project II): 2008-113		
Lab Batch #: 880171	Sample: 435769-010 S / MS	S Batch	n: 1 Matrix:	, Soil		
Units: mg/kg	Date Analyzed: 01/31/12 17:36	SUJ	RROGATE RF	COVERY S	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
LAD'CL	Analytes	0.0000	0.0200	L= 3	00.120	i
1,4-Difluorobenzene		0.0296	0.0300	99	80-120	r
4-DI0III01100100012010	125504 001 0D / I	0.0341	0.0500	114	80-120	
Lab Batch #: 879921	Sample: 435786-001 SD / M	ASD Batch	1: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/26/12 23:22	SUJ	RROGATE KE	COVERY 8	STUDY	
ВТЕУ	X by EPA 8021B Analvtes	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		0.0311	0.0300	104	80-120	
Lah Batch #: 880041	Sample: 435769-004 SD / M	MSD Batcl	h: 1 Matrix	: Soil	·	
Units: mg/kg	Date Analyzed: 01/28/12 04:05	SU	RROGATE RF	COVERY ?	STUDY	
ВТЕУ	X by EPA 8021B 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		0.0309	0.0300	103	80-120	
Lab Batch #: 880037	Sample: 435769-007 SD / M	MSD Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/28/12 16:33	SU	RROGATE RF	COVERY	STUDY	
ВТЕХ	X 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	1
4-Bromofluorobenzene		0.0349	0.0300	116	80-120	
Lab Batch #: 880133	Sample: 435520-006 SD / M	MSD Batcl	h: 1 Matrix	:Soil	<u>. </u>	
Units: mg/kg	Date Analyzed: 01/28/12 19:30	SU	RROGATE RF	COVERY S	STUDY	
ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		97.9	99.5	98	70-135	i
o-Terphenyl		41.6	49.8	84	70-135	 I

* Surrogate outside of Laboratory QC limits

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*** Poor recoveries due to dilution



Project Name: EK Queen Pearce

Work Orders: 435671,			Project II	D: 2008-113		
Lab Batch #: 880171	Sample: 435769-010 SD / M	ASD Bate	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/31/12 17:59	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	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



Work Order #: 435671							Pro	ject ID: 2	2008-113			
Analyst: ASA	Da	ate Prepar	red: 01/26/201	2			Date A	nalyzed: (01/26/2012			
Lab Batch ID: 879921 Sample: 617047-1-	BKS	Batel	h #: 1					Matrix: S	Solid			
Units: mg/kg		BLAN	K /BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUD	Y		
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Benzene	< 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	0.0060	96	6	71-133	35		
011,1010	<0.00100	0.100	0.102	102	0.100	Dets Analyzed: 01/28/2012						
Analyst: ASA	Da	ate Prepar	ed: 01/27/201	2	0.100	0.0900	Date A	nalyzed: ()1/28/2012	55	<u> </u>	
Analyst: ASA Lab Batch ID: 880037 Sample: 617120-1-1	Da BKS	ate Prepar Batc	ed: 01/27/201	102	0.100	0.0900	Date A	nalyzed: (Matrix: S)1/28/2012 Solid	33	<u> </u>	
Analyst: ASA Lab Batch ID: 880037 Sample: 617120-1- Units: mg/kg	Da BKS	ate Prepar Batcl BLAN	red: 01/27/201 h #: 1 K /BLANK S	102 12 SPIKE / H	BLANK S	SPIKE DUPI	Date A	nalyzed: (Matrix: S RECOVI)1/28/2012 Solid ERY STUD	DY		
Analyst: ASA Lab Batch ID: 880037 Sample: 617120-1- Units: mg/kg BTEX by EPA 8021B Analytes	Da BKS Blank Sample Result [A]	ate Prepar Batcl BLAN Spike Added [B]	ed: 01/27/201 h #: 1 K /BLANK S Blank Spike Result [C]	2 SPIKE / H Blank Spike %R [D]	BLANK S Spike Added [E]	Blank Spike Duplicate Result [F]	Date A	nalyzed: (Matrix: S RECOVI RPD %	01/28/2012 Solid Control Limits %R	VY Control Limits %RPD	Flag	
Analyst: ASA Lab Batch ID: 880037 Sample: 617120-1- Units: ^{mg/kg} BTEX by EPA 8021B Analytes Benzene	Da BKS Blank Sample Result [A] <0.00100	ate Prepar Batcl BLAN Spike Added [B] 0.100	ed: 01/27/201 h #: 1 K /BLANK S Blank Spike Result [C] 0.0923	2 SPIKE / H Blank Spike %R [D] 92	BLANK S Spike Added [E] 0.100	Blank Spike Duplicate Result [F] 0.0915	Date A	nalyzed: (Matrix: S RECOVI RPD %	01/28/2012 Solid ERY STUD Control Limits %R 70-130	Control Limits %RPD 35	Flag	
Analyst: ASA Lab Batch ID: 880037 Sample: 617120-1- Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene	Da BKS Blank Sample Result [A] <0.00100 <0.00200	ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100	ed: 01/27/201 h #: 1 K /BLANK S Blank Spike Result [C] 0.0923 0.0924	2 SPIKE / H Blank Spike %R [D] 92 92 92	Spike Added [E] 0.100	Blank Spike Duplicate Result [F] 0.0915 0.0910	Date A Date A LICATE D Blk. Spk Dup. %R [G] 92 91	nalyzed: (Matrix: S RECOVI %	01/28/2012 Solid Control Limits %R 70-130 70-130	VY Control Limits %RPD 35 35	Flag	
Analyst: ASA Lab Batch ID: 880037 Sample: 617120-1- Units: ^{mg/kg} BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene	Da BKS Blank Sample Result [A] <0.00100 <0.00200 <0.00100	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100 0.100	ed: 01/27/201 h #: 1 K /BLANK S Blank Spike Result [C] 0.0923 0.0924 0.0919	2 SPIKE / H Blank Spike %R [D] 92 92 92 92	BLANK S Spike Added [E] 0.100 0.100 0.100	Blank Spike Duplicate Result [F] 0.0915 0.0910 0.0899	Date A LICATE Blk. Spk Dup. %R [G] 92 91 90	nalyzed: (Matrix: S RECOVH %	AT 133 01/28/2012 Solid ERY STUD Limits %R 70-130 70-130 71-129	Control Limits %RPD 35 35 35	Flag	
Analyst: ASA Lab Batch ID: 880037 Sample: 617120-1- Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene m_p-Xylenes	Da BKS Blank Sample Result [A] <0.00100 <0.00200 <0.00100 <0.00200	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100 0.100 0.200	o.102 red: 01/27/201 h #: 1 K /BLANK S Blank Spike Result [C] 0.0923 0.0924 0.0919 0.183	2 3 SPIKE / I Blank Spike %R [D] 92 92 92 92 92 92	Spike Added [E] 0.100 0.100 0.100 0.100 0.200	Blank Spike Duplicate Result [F] 0.0915 0.0910 0.0899 0.179	Date A LICATE Blk. Spk Dup. %R [G] 92 91 90 90	nalyzed: (Matrix: S RECOVE % 1 2 2 2	This 01/28/2012 Solid ERY STUD Limits %R 70-130 70-130 71-129 70-135	255 27 Control Limits %RPD 35 35 35 35 35	Flag	



Work Order #: 435671							Pro	ject ID: 2	2008-113		
Analyst: ASA	Da	ate Prepar	ed: 01/27/201	2			Date Ar	nalyzed: (01/27/2012		
Lab Batch ID: 880041 Sample: 617121-1	-BKS	Batch	1#: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK S	SPIKE / B	BLANK S	PIKE DUPI	JCATE I	RECOVI	ERY STUD	PΥ	
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	0.0924	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	
- V-1					0.100	0.101	101	0	51 100	25	
о-хутепе	<0.00100	0.100	0.0926	93	0.100	0.101	101	9	71-133	35	
Analyst: ASA	<0.00100	0.100 ite Prepar	0.0926 ed: 01/31/201	2	0.100	0.101	Date A	nalyzed: ()1/31/2012	35	
Analyst: ASA Lab Batch ID: 880171 Sample: 617208-1	<0.00100 Da	0.100 ate Prepar Batch	0.0926 ed: 01/31/201	93	0.100	0.101	Date A	nalyzed: (Matrix: S	01/31/2012 Solid	35	
Analyst: ASA Lab Batch ID: 880171 Sample: 617208-1 Units: mg/kg	-8KS	0.100 ate Prepar Batcl BLAN	0.0926 ed: 01/31/201 n#: 1 K/BLANK S	93 12 3PIKE / B	0.100 BLANK S	PIKE DUPI	Date A	9 nalyzed: (Matrix: S RECOVI	71-133 01/31/2012 Solid ERY STUD	35 9 Y	
Analyst: ASA Lab Batch ID: 880171 Sample: 617208-1 Units: mg/kg BTEX by EPA 8021B Analytes	<0.00100 Da -BKS Blank Sample Result [A]	0.100 ate Prepar Batcl BLAN Spike Added [B]	0.0926 ed: 01/31/201 n #: 1 K /BLANK S Blank Spike Result [C]	93 12 SPIKE / B Blank Spike %R [D]	0.100 BLANK S Spike Added [E]	Blank Spike Duplicate Result [F]	Date An Date An DICATE 1 Blk. Spk Dup. %R [G]	9 nalyzed: (Matrix: S RECOVI RECOVI	71-133 01/31/2012 Solid ERY STUD Control Limits %R	35 DY Control Limits %RPD	Flag
Analyst: ASA Lab Batch ID: 880171 Sample: 617208-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene	<0.00100 Da -BKS Blank Sample Result [A] <0.00100	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100	0.0926 ed: 01/31/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.0922	93 12 SPIKE / B Blank Spike %R [D] 92	0.100 BLANK S Spike Added [E] 0.100	D.101 PIKE DUPI Blank Spike Duplicate Result [F] 0.0941	Date Ai	9 nalyzed: (Matrix: S RECOVI %	71-133 01/31/2012 Solid ERY STUD Control Limits %R 70-130	35 VY Control Limits %RPD 35	Flag
Analyst: ASA Lab Batch ID: 880171 Sample: 617208-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene	<0.00100 Da -BKS Blank Sample Result [A] <0.00100 <0.00200	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100	0.0926 ed: 01/31/201 n #: 1 K /BLANK § Blank Spike Result [C] 0.0922 0.0919	93 12 SPIKE / B Blank Spike %R [D] 92 92 92	0.100 BLANK S Spike Added [E] 0.100 0.100	0.101 SPIKE DUPI Blank Spike Duplicate Result [F] 0.0941 0.0932	Blk. Spk Ør 101 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 002 031	y nalyzed: (Matrix: S RECOVI RECOVI % 2 1	71-133 01/31/2012 Solid ERY STUD Control Limits %R 70-130 70-130	35 Control Limits %RPD 35 35 35	Flag
Analyst: ASA Lab Batch ID: 880171 Sample: 617208-1 Units: ^{mg/kg} BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene	<0.00100 Da -BKS Blank Sample Result [A] <0.00100 <0.00200 <0.00100	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100 0.100	0.0926 ed: 01/31/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.0922 0.0919 0.0913	93 12 SPIKE / B Spike / B %R [D] 92 92 91	0.100 BLANK S Spike Added [E] 0.100 0.100 0.100	Duplicate Result [F] 0.0932 0.0919	Blk. Spk 001 Blk. Spk 001 94 93 92	y nalyzed: (Matrix: S RECOVI % 2 1 1	71-133 01/31/2012 Solid ERY STUD Control Limits %R 70-130 70-130 70-130 71-129	35 Control Limits %RPD 35 35 35	Flag
Analyst: ASA Lab Batch ID: 880171 Sample: 617208-1 Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene m_p-Xylenes	<0.00100 Da -BKS Blank Sample Result [A] <0.00100 <0.00100 <0.00100 <0.00100	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100 0.100 0.100 0.200	0.0926 ed: 01/31/201 h #: 1 K /BLANK \$ Blank Spike Result [C] 0.0922 0.0919 0.0913 0.191	93 12 SPIKE / B Blank Spike %R [D] 92 92 91 96	0.100 BLANK S Spike Added [E] 0.100 0.100 0.100 0.200	0.101 PIKE DUPI Blank Spike Duplicate Result [F] 0.0941 0.0932 0.0919 0.192	Blk. Spk Øg 94 93 92 96	nalyzed: (Matrix: S RECOVI % 2 1 1 1 1	71-133 01/31/2012 Solid ERY STUD Control Limits %R 70-130 70-130 71-129 70-135	35 Control Limits %RPD 35 35 35 35 35	Flag





Work Order #: 435671 Analyst: ASA Lab Batch ID: 880133	Sample: 617186-1-B	Da KS	ate Prepar Batcl	red: 01/26/201 h #: 1	2			Pro Date A	ject ID: 2 nalyzed: 0 Matrix: S	008-113 1/28/2012 olid		
Units: mg/kg	[BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPL	ICATE	RECOVE	CRY STUD	Y	
TPH By SW801	15 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes			[B]	[C]	[D]	[E]	Result [F]	[G]				
C6-C12 Gasoline Range Hydroca	rbons	<15.0	1000	820	82	1000	843	84	3	70-135	35	
C12-C28 Diesel Range Hydrocard	bons	<15.0	1000	783	78	1000	916	92	16	70-135	35	



Project Name: EK Queen Pearce



Work Order #: 435671						Project II	D: 2008-1	13			
Lab Batch ID: 879921 0 Date Analyzed: 01/26/2012	QC- Sample ID: Date Prepared:	435786 01/26/2	-001 S 012	Ba An	tch #: alyst:	1 Matri y ASA	x: Soil				
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %B	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	Kesut [F]	[G]				
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	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed: 01/28/2012	Date Prepared:	01/27/2	012	An	alyst:	ASA					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Benzene	<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	Х
Ethylbenzene	<0.00111	0.111	0.0647	58	0.112	0.0692	62	7	71-129	35	Х
m_p-Xylenes	< 0.00223	0.223	0.131	59	0.224	0.141	63	7	70-135	35	Х
o-Xylene	<0.00111	0.111	0.0655	59	0.112	0.0703	63	7	71-133	35	Х

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

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						Project II	D: 2008-1	13			
Lab Batch ID: 880041 Date Analyzed: 01/28/2012	QC- Sample ID: Date Prepared:	435769 01/27/2	-004 S 012	Ba An	tch #: alyst:	1 Matri ASA	x: Soil				
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERYS	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	Result [1]	[G]	70	Jun		
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	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 01/31/2012	Date Prepared:	01/31/2	012	An	alyst:	ASA					
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERYS	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample %B	Spike	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %R	Control Limits	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	itesuit [i]	[G]	,,,			
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	Х
o-Xylene	< 0.00111	0.111	0.0696	63	0.111	0.0733	66	5	71-133	35	X

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



Project Name: EK Queen Pearce



Project ID: 2008-113 Work Order #: 435671 Lab Batch ID: 880133 QC- Sample ID: 435520-006 S Matrix: Soil Batch #: 1 **Date Prepared:** 01/26/2012 Analyst: ASA **Date Analyzed:** 01/28/2012 Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control TPH By SW8015 Mod Sample Result Spiked Sample RPD Limits Spike Sample Spike Dup. Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] C6-C12 Gasoline Range Hydrocarbons <17.5 1170 1000 85 1170 931 80 7 70-135 35 1130 97 982 84 C12-C28 Diesel Range Hydrocarbons <17.5 1170 1170 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

Page 25 of 28





Work Order #: 435671

Lab Batch #: 879919				Project I	D: 2008-113	3
Date Analyzed: 01/26/2012 08:30	Date Prepar	ed: 01/26/2012	2 Anal	yst:BRB		
QC- Sample ID: 435671-001 D	Batcl	n#: 1	Mat	rix: Soil		
Reporting Units: %		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte			[B]			
Percent Moisture		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

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Project Manager:	Ben J. Argui	oį											1	Pro	ject Na	, me:	Щ. Д	ueer	Pe	arce					1
Company Name	Basin Envir	onmental Serv	ice Tec	hnologi	ies, LLC								I		Proje	# # だ	2008	113							
Company Address:	. P. O. Box 30	2											I	ā	roject	ij	eaC	ounty	NN						
City/State/Zip:	Lovington, h	VM 88260											I		a	 #0	A.	J. He	ξ						
Telephone No:	(575)396-237	81				Fax No:	(2)	5) 396	-1429				-	Керог	Formé		to T	andar	ъ		TRR	0	z □	PDES	
Sampler Signature						e-mail:	ä	rrguijo	@bas	sinenv	moo.			-				Δn		ند ت				F	
s only)																	TCLF					\vdash		27 PLS	
r#: 135	x x							Pr	eservati	ion & # i	of Cont	ainers	2	latrix	89			əs	+	(09				. '87 '	Γ
۳ ۳	TD CODE		dîqa Depth	dîng Depth	Dale Sampled	bəlqms2 əmiT	Field Filtered Total #. of Containers	90)	HCI	*OS ^z H		enol enol	DW=Drinking Water SL=Sludge	WD ≈ Groundwater S=Soil/Solid WP=Non-Potable Specify Other	108 M2108 3814 :H9T 3001 XT 3005 XT 3H9T	Cations (Ca, Mg, Va, K)	SAR / ESP / CEC	ketals: As Ag Ba Cd Cr Pb Hg	selinctonimo2	BTEX 80218/5030 or BTEX 82	אכו ואכו		Chlorides	PS (Pre-Schedule) 24	YAG & TAT brebnet2
B	1-8 @ 20'				1/20/2012	1355	-	×						Soil	×				_	×		-		-	×
88	1-8 @ 25'				1/20/2012	1400		×						Soil	×					<u> </u>				\dashv	×
SB	1-8 @ 30'				1/20/2012	1405	-	×						Soil	×					<u>×</u>				_+	×
SB)-8 @ 35'				1/20/2012	1410	-	×						Soil	×		_			<u>×</u>				+	×
SB	1-8 @ 40'				1/20/2012	1445	-	×						Soil	×				-	쒸				╉	×
SB	3-8 @ 45'				1/20/2012	1450	-	×						Soil	×		+		-	쐰		-		┽	×
SB	3-8 @ 50'				1/20/2012	1500	-	×						Soil	×		-+			<u> </u>		\rightarrow		+	×
B	1-8 @ 55'			-	1/20/2012	1505		×						Soil	×		+		-	쒸	1	\rightarrow		_	×
SB	3-8 @ 60'				1/20/2012	1525	-	×	-		-	\pm		Soil	\mathbf{x}				+	쒸		+		┽	×
SB	3-8 @ 65'				1/20/2012	1530	-	×						Soil	×				-	Ň		-		┥	×
Instructions:				E												Sar Point	orator ple C S Fre	y Cor ontain e of H	mmer ers In eadsl	nts: ntact? paceí		00	AA	ZZZ	
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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:	205in	Plain	<u>ns</u>
Date/Time:	1.25	12	15:15
Lab ID # :	4	3567	
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?	Tes	No		· · · · · · · · · · · · · · · · · · ·
8. Chain of custody agrees with sample label(s)?	Tes	No		·
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Tes	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 N	0.	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 Tak			
Check all that apply:	□ Cooling process has begun shortly after s	ampling 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



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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 Tucson (EPA Lab code: AZ00989): Arizona (AZ0758)



31-JAN-12

ALLA ACCAEDING

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

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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:2008-113Work Order Number:435675

Report Date: 31-JAN-12 Date Received: 01/25/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 435675

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed Jan-25-12 03:15 pm

Report Date: 31-JAN-12

Project Manager: Brent Barron II

	Lab Id:	435675-0	01	435675-0	02		
Analysis Pogyostad	Field Id:	SB-9 @ 2	20'	SB-9@3	35'		
Analysis Kequesieu	Depth:						
	Matrix:	SOIL		SOIL			
	Sampled:	Jan-23-12 1	4:00	Jan-23-12 1	4:15		
BTEX by EPA 8021	Extracted:	Jan-26-12 1	6:25	Jan-26-12 1	6:25		
	Analyzed:	Jan-26-12 2	22:14	Jan-26-12 2	2:36		
	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:						
	Analyzed:	Jan-26-12 0	08:30	Jan-26-12 0	9:00		
	Units/RL:	%	RL	%	RL		
Percent Moisture		5.41	1.00	3.19	1.00		
TPH by SW8015 Mod	Extracted:	Jan-26-12 1	3:35	Jan-26-12 1	3:35		
	Analyzed:	Jan-28-12 1	1:36	Jan-28-12 1	2:02		
	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

Page 5 of 14



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 NEL	AC 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	



Project Name: EK Queen Pearce

Nork Orders : 435675) ,	Project ID: 2008-113							
Lab Batch #: 879921	Sample: 435675-001 / SMP	Batch	a: 1 Matrix:	Soil					
Units: mg/kg	Date Analyzed: 01/26/12 22:14	SUI	RROGATE RF	COVERY S	STUDY				
ВТЕ	X 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		0.0284	0.0300	95	80-120	·			
Lab Batch #: 879921	Sample: 435675-002 / SMP	Batcł	a: 1 Matrix:	Soil					
Units: mg/kg	Date Analyzed: 01/26/12 22:36	SUJ	RROGATE RF	COVERY S	STUDY				
BTE	X by EPA 8021	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		0.0278	0.0300	93	80-120				
Lab Batch #: 880133	Sample: 435675-001 / SMP	Batcl	n: 1 Matrix:	Soil	<u> </u>				
Units: mg/kg	Date Analyzed: 01/28/12 11:36	SU!	RROGATE RF	COVERY	STUDY				
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane		85.1	100	85	70-135	1			
o-Terphenyl		44.0	50.0	88	70-135				
Lab Batch #: 880133	Sample: 435675-002 / SMP	Batcl	n: 1 Matrix:	:Soil	<u>.</u>				
Units: mg/kg	Date Analyzed: 01/28/12 12:02	SUI	RROGATE RF	COVERY	STUDY				
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
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 / BI	_K Batcl	h: 1 Matrix:	:Solid	<u>ı </u>				
Units: mg/kg	Date Analyzed: 01/26/12 19:57	SU	RROGATE RF	COVERY S	STUDY				
BTE	X 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		0.0275	0.0300	92	80-120	. <u></u> i			

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: EK Queen Pearce

Nork Orders : 435675),		Project II): 2008-113					
Lab Batch #: 880133	Sample: 617186-1-BLK / B	K Batch: 1 Matrix: Solid							
Units: mg/kg	Date Analyzed: 01/28/12 09:02	SU!	RROGATE RF	COVERY	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 #: 879921	Sample: 617047-1-BKS / B	KS Batcl	h: 1 Matrix:	Solid					
Units: mg/kg	Date Analyzed: 01/26/12 18:26	SU!	RROGATE RF	COVERY	STUDY				
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1.4-Difluorobenzene	Allary Co	0.0321	0.0300	107	80-120				
4-Bromofluorobenzene		0.0335	0.0300	112	80-120				
Lah Batch #: 880133	Sample: 617186-1-BKS / B	KS Batc	h· 1 Matrix	• Solid	<u> </u>				
Units: mg/kg	Date Analyzed: 01/28/12 08:13	SU	RROGATE RI	ECOVERY (STUDY				
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	Anaryus	93.8	100	94	70-135	i			
o-Terphenyl		39.1	50.0	78	70-135				
Lab Batch #: 879921	Sample: 617047-1-BSD / B	SD Bate	h: 1 Matrix:	:Solid	<u> </u>				
Units: mg/kg	Date Analyzed: 01/26/12 18:49	SU	RROGATE RI	ECOVERY	STUDY				
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes		ļ	נטן		ļ			
1,4-Difluorobenzene		0.0308	0.0300	103	80-120	<u> </u>			
4-Bromofluorobenzene		0.0305	0.0300	102	80-120	<u>. </u>			
Lab Batch #: 880133	Sample: 617186-1-BSD / BS	SD Batch	h: 1 Matrix:	Solid	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
Units: mg/kg	Date Analyzed: 01/28/12 08:38	SU	RROGATE KE	COVERY :	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				

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: EK Queen Pearce

Vork Orders: 435675	,		Project II	D: 2008-113					
Lab Batch #: 879921	Sample: 435786-001 S / M3	S Batch: 1 Matrix: Soil							
Units: mg/kg	Date Analyzed: 01/26/12 22:59	SU	RROGATE RI	ECOVERY	STUDY				
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene		0.0311	0.0300	104	80-120				
4-Bromofluorobenzene		0.0315	0.0300	105	80-120				
Lab Batch #: 880133	Sample: 435520-006 S / M	S Batc	h: ¹ Matrix	Soil	·				
Units: mg/kg	Date Analyzed: 01/28/12 19:05	SU	RROGATE RI	ECOVERY	STUDY				
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes	102	00.6	[102					
1-Chlorooctane		103	99.6	103	70-135				
0-1erpnenyi		40.2	49.8	93	/0-135				
Lab Batch #: 879921	Sample: 435786-001 SD / N	MSD Batch: 1 Matrix: Soil							
Units: mg/kg	Date Analyzed: 01/26/12 23:22	SU	RROGATE RI	ECOVERY	STUDY				
BTE	X by EPA 8021 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		0.0311	0.0300	104	80-120				
Lab Batch #: 880133	Sample: 435520-006 SD / N	MSD Batc	h: 1 Matrix	:Soil					
Units: mg/kg	Date Analyzed: 01/28/12 19:30	SU	RROGATE RI	ECOVERY	STUDY				
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane		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





Work Order #: 435675	Project ID: 2008-113											
Analyst: ASA	Date Prepared: 01/26/2012					Date Analyzed: 01/26/2012						
Lab Batch ID: 879921 Sample: 617047-1	-BKS	Bate	h #: 1			Matrix: Solid						
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021	BlankSpikeBlankBlankSSample ResultAddedSpikeSpikeA[A]Result%R					Blank Spike Duplicate Begylt [F]	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes		[D]		נען		Kesuit [F]	[G]					
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	D	ate Prepai	ed: 01/26/201	12			Date A	nalyzed: (01/28/2012			
Lab Batch ID: 880133 Sample: 617186-1	-BKS	Batc	h #: 1					Matrix: S	Solid			
Units: mg/kg		BLAN	K/BLANK S	SPIKE / F	BLANK S	SPIKE DUPI	LICATE	RECOVE	ERY STUD	Y		
TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
C6-C12 Gasoline Range Hydrocarbons	<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		



Project Name: EK Queen Pearce



Work Order #: 435675						Project II	D: 2008-1	13			
Lab Batch ID: 879921 Date Analyzed: 01/26/2012	QC- Sample ID: Date Prepared:	435786 01/26/2	-001 S 012	Ba An	tch #: alyst:	1 Matrix ASA	x: Soil				
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 01/28/2012	Date Prepared:	01/26/2	012	An	alyst:	ASA					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH by SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E





Work Order #: 435675

Lab Batch #: 879919				Project I	D: 2008-113	3
Date Analyzed: 01/26/2012 08:30	Date Prepare	ed: 01/26/2012	2 Anal	yst:BRB		
QC- Sample ID: 435671-001 D	Batch	1 #: 1	Mat	rix: Soil		
Reporting Units: %		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte			[B]			
Percent Moisture		5.87	6.31	7	20	
Lab Batch #: 879922						
Date Analyzed: 01/26/2012 09:00	Date Prepar	ed: 01/26/2012	2 Anal	yst:BRB		
Date Analyzed: 01/26/2012 09:00 QC- Sample ID: 435675-002 D	Date Prepar Batch	ed:01/26/2012	2 Anal Mat	yst:BRB rix: Soil		
Date Analyzed: 01/26/2012 09:00 QC- Sample ID: 435675-002 D Reporting Units: %	Date Prepare Batch	ed: 01/26/2012 1#: 1 SAMPLE /	2 Anal Mat / SAMPLE	yst:BRB rix: Soil DUPLIC	ATE REC	OVERY
Date Analyzed: 01/26/2012 09:00 QC- Sample ID: 435675-002 D Reporting Units: % Percent Moisture Analyte	Date Prepare Batch	ed: 01/26/2012 #: 1 SAMPLE / Parent Sample Result [A]	2 Anal Mat / SAMPLE Sample Duplicate Result [B]	yst: BRB rix: Soil DUPLIC RPD	ATE RECO Control Limits %RPD	OVERY Flag

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

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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: Po	6in / Plains	
Date/Time:	1.25.12 15.15	
Lab ID # :	435675	
Initials:	ĂE	

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?	Tes	No		
5. Sample instructions complete on chain of custody?	Tes	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?	Tes	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	NA	
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 - 2,5°C lbs °C lbs °	C Ibs	°(C Ibs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:	
Regarding:			
	والمحاوية والمحاولة والمحاو		
Corrective Action Tak	en:		
Check all that apply:	□ Cooling process has begun shortly after s	ampling event and out of temperature	

condition acceptable by NELAC 5.5.8.3.1.a.1.

□ Client understands and would like to proceed with analysis
Analytical Report 435679

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 Tucson (EPA Lab code: AZ00989): Arizona (AZ0758)



01-FEB-12

SUP SCORE OF

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

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 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



XENCO Laboratories

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 conformances and comments: None

Sample receipt non conformances and comments per sample:

None Analytical non nonformances 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 Name: EK Queen Pearce



Date Received in Lab: Wed Jan-25-12 03:15 pm

Report Date: 01-FEB-12

Contact: Jason Henry Project Location: Lea County, NM

Project Id: 2008-113

								Project Ma	nager:	Brent Barron	II		
	Lab Id:	435679-	001	435679-	002	435679-	003	435679-	004	435679-	005	435679-	006
Are alwain Do now or to d	Field Id:	SB-10 @	20'	SB-10 @	25'	SB-10 @	30'	SB-10 @	35'	SB-10 @	40'	SB-10 @	45'
Analysis Kequestea	Depth:												
	Matrix:	SOIL		SOIL	.	SOIL		SOIL	_	SOIL		SOII	
	Sampled:	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	Extracted:	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
Analyzed:		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
	Units/RL:	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	Extracted:												
	Analyzed:	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
	Units/RL:	%	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	Extracted:	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
	Analyzed:	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
	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		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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 435679

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed Jan-25-12 03:15 pm

Report Date: 01-FEB-12

Project Manager: Brent Barron II

	Lab Id:	435679-0	007	435679-0	008	435679-0)09		
Analysis Requested	Field Id:	SB-10 @	50'	SB-10 @	55'	SB-10 @	60'		
Analysis Requested	Depth:								
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Jan-23-12	15:50	Jan-23-12	5:55	Jan-23-12	16:05		
BTEX by EPA 8021	Extracted:	Jan-31-12	08:50	Jan-27-12	5:15	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	4:45	Jan-26-12	14:45		
	Analyzed:	Jan-27-12	09:02	Jan-27-12 (9:29	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	 	

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Brent Barron II Odessa Laboratory Manager

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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.
- RPD exceeded lab control limits. F
- J The target analyte was positively identified below the quantiation 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 NEL	AC Accreditation. ^ NELAC	or State program does not offer Accreditation at this time

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(770) 449-8800	(770) 449-5477
(602) 437-0330	

Fax



Project Name: EK Queen Pearce

Work Orders : 435679),		Project II	D: 2008-113		
Lab Batch #: 879921	Sample: 435679-001 / SMP	Batch	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/26/12 21:51	SU!	RROGATE RI	ECOVERY	STUDY	
BTE	X 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		0.0287	0.0300	96	80-120	
Lab Batch #: 880123	Sample: 435679-006 / SMP	Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/27/12 08:35	SU!	RROGATE RI	ECOVERY	STUDY	
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		99.0	100	99	70-135	
o-Terphenyl		56.3	50.2	112	70-135	
Lab Batch #: 880123	Sample: 435679-007 / SMP	Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/27/12 09:02	SU.	RROGATE RI	ECOVERY	STUDY	
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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	Batcl	h: 1 Matrix:	Soil	1	
Units: mg/kg	Date Analyzed: 01/27/12 09:29	SU	RROGATE RI	ECOVERY	STUDY	
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		89.7	99.7	90	70-135	
o-Terphenyl		49.9	49.9	100	70-135	
Lab Batch #: 880123	Sample: 435679-009 / SMP	Batch	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/27/12 09:54	SU	RROGATE RI	ECOVERY	STUDY	
TPH 1	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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



Project Name: EK Queen Pearce

Vork Orders : 435679),		Project II	J: 2008-113		
Lab Batch #: 880041	Sample: 435679-008 / SMP	Batcl	h: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 01/28/12 03:20	SU!	RROGATE RF	COVERY	STUDY	
ВТЕ	X 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		0.0304	0.0300	101	80-120	
Lab Batch #: 880041	Sample: 435679-009 / SMP	Batcl	h: ¹ Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 01/28/12 05:34	SU!	RROGATE RF	COVERY S	STUDY	
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0273	0.0300	91	80-120	1
4-Bromofluorobenzene		0.0297	0.0300	99	80-120	
Lab Batch #: 880041	Sample: 435679-004 / SMP	Batc	h: 1 Matrix:	:Soil	<u>. </u>	
Units: mg/kg	Date Analyzed: 01/28/12 07:26	SU	RROGATE RF	ECOVERY ?	STUDY	
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0282	0.0300	94	80-120	
4-Bromofluorobenzene		0.0224	0.0300	75	80-120	*
Lab Batch #: 880133	Sample: 435679-001 / SMP	Batcl	h: 1 Matrix	:Soil	·	
Units: mg/kg	Date Analyzed: 01/28/12 12:30	SU	RROGATE RF	COVERY	STUDY	
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes				70.105	·
1-Chlorooctane		94.4	50.0	94	70-135	
	C 1 425670 002 / SMD	40./			/0-155	
Lab Batch #: 880133	Sample: 455079-0057 SIVI	Baici SU	1: 1 Maurix:	Soll	STUDY	
Units: mg/kg	Date Analyzed: 01/28/12 13:22					. <u></u>
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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



Project Name: EK Queen Pearce

Vork Orders : 435679),		Project II	D: 2008-113		
Lab Batch #: 880123	Sample: 435679-004 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/30/12 13:36	SU	RROGATE RE	ECOVERY	STUDY	
ТРН	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		64.4	50.1	129	70-135	
Lab Batch #: 880123	Sample: 435679-005 / SMP	Batc	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/30/12 14:04	SU	RROGATE RE	ECOVERY	STUDY	
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/30/12 16:18	SU	RROGATE RE	ECOVERY	STUDY	
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[1]	50 105	
1-Chlorooctane		96.9 40.0	99.5	97	70-135	
	2 125770 002 / CMD	49.9	49.0	100	/0-155	
Lab Batch #: 8801/1	Sample: 4356/9-003/ SMP	Bate	h: 1 Matrix:	Soil	TUDV	
Units: mg/kg	Date Analyzed: 01/31/12 16:28	50	KNUGALE NI			
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1.4 Diffuerchangene	Analytes	0.0296	0.0200	[10]	00.120	
4-Bromofluorobenzene		0.0286	0.0300	95	80-120 80-120	
T D D A D 4 2 2 0 0 1 7 1	91-, 425670 005 / SMD	0.032 4	1 Madathan	0.:1	00-120	
Lab Batch #: 0001/1	Sample: 403079-0007 Sivir		h: 1 Matrix: RROCATE RE	COVERY	TUDY	
Units: mg/Kg	Date Analyzed: 01/31/12 10:51					
BTE	X by EPA 8021 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		0.0285	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



Project Name: EK Queen Pearce

Nork Orders : 435679),		Project II): 2008-113		
Lab Batch #: 880171	Sample: 435679-006 / SMP	Batcl	h: <u>1</u> Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/31/12 17:13	SU!	RROGATE RF	COVERY S	STUDY	
ВТЕ	X by EPA 8021 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		0.0284	0.0300	95	80-120	1
Lab Batch #: 880171	Sample: 435679-007 / SMP	Batcl	h: 1 Matrix:	Soil	<u>'</u>	
Units: mg/kg	Date Analyzed: 01/31/12 19:29	SU	RROGATE RF	COVERY	STUDY	
ВТЕ	X 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		0.0335	0.0300	112	80-120	
Lab Batch #: 880171	Sample: 435679-002 / SMP	Batcl	h: ¹ Matrix:	Soil	1	
Units: mg/kg	Date Analyzed: 01/31/12 22:09	SU	RROGATE RF	COVERY	STUDY	
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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 / BI	_K Batc!	h: 1 Matrix:	:Solid	,	
Units: mg/kg	Date Analyzed: 01/26/12 19:57	SU	RROGATE RF	COVERY	STUDY	
ВТЕ	X 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		0.0275	0.0300	92	80-120	
Lab Batch #: 880123	Sample: 617180-1-BLK / BI	K Batcl	h: 1 Matrix:	:Solid	<u>.</u>	
Units: mg/kg	Date Analyzed: 01/27/12 07:19	SU	RROGATE RF	COVERY S	STUDY	
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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



Project Name: EK Queen Pearce

Vork Orders: 435679	۱,		Project II	J: 2008-113		
Lab Batch #: 880041	Sample: 617121-1-BLK / B	LK Batcl	h: <u>1</u> Matrix:	:Solid		
Units: mg/kg	Date Analyzed: 01/27/12 23:33	SU	RROGATE RF	COVERY	STUDY	
ВТЕ	X 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 / B	LK Batcl	h: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 01/28/12 09:02	SU	RROGATE RF	COVERY S	STUDY	
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	Anaryus	98.7	100	99	70-135	
o-Terphenyl		51.5	50.0	103	70-135	
I ab Ratch #• 880171	Somule: 617208-1-BLK / B	I K Batel	6. 1 Matrix	<u> </u>	<u> </u>	
Lau Dawn m	Date Analyzed: 01/31/12 13:02	SU SU	RROGATE RI	ECOVERY :	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		i
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 / B!	KS Batcl	h: 1 Matrix:	:Solid		
Units: mg/kg	Date Analyzed: 01/26/12 18:26	SU!	RROGATE RE	ECOVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		<u> </u>
1,4-Difluorobenzene		0.0321	0.0300	107	80-120	
4-Bromofluorobenzene		0.0335	0.0300	112	80-120	. <u> </u>
Lab Batch #: 880123	Sample: 617180-1-BKS / BI	KS Batch	h: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 01/27/12 06:28	SU	RROGATE RE	COVERY	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



Project Name: EK Queen Pearce

Vork Orders : 435679),		Project II): 2008-113		
Lab Batch #: 880041	Sample: 617121-1-BKS / B!	KS Batel	h: ¹ Matrix:	Solid		
Units: mg/kg	Date Analyzed: 01/27/12 22:02	SU!	RROGATE RF	COVERY	STUDY	
вте	X 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		0.0296	0.0300	99	80-120	
Lab Batch #: 880133	Sample: 617186-1-BKS / B	KS Batcl	h: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 01/28/12 08:13	SU!	RROGATE RF	COVERY	STUDY	
TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	Analytes	93.8	100	94	70-135	
o-Terphenyl		39.1	50.0	78	70-135	
Lah Batch #: 880171	Sample: 617208-1-BKS / B	KS Bate	h· 1 Matrix	• Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 01/31/12 11:53	SU	RROGATE RI	ECOVERY (STUDY	
BTE	X by EPA 8021	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 / B;	SD Batcl	h: 1 Matrix:	:Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 01/26/12 18:49	SU	RROGATE RF	COVERY S	STUDY	
ВТЕ	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			נען		ļ
1,4-Difluorobenzene		0.0308	0.0300	103	80-120	¦
4-Bromofluorobenzene		0.0305	0.0300	102	80-120	<u> </u>
Lab Batch #: 880123	Sample: 617180-1-BSD / BS	SD Batch	h: 1 Matrix:	Solid	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
Units: mg/kg	Date Analyzed: 01/27/12 06:53	SU	RROGATE KE	COVERY :	STUDY	
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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



Project Name: EK Queen Pearce

Vork Orders: 435679),		Project II	J: 2008-113		
Lab Batch #: 880041	Sample: 617121-1-BSD / BS	SD Batcl	h: <u>1</u> Matrix:	Solid		
Units: mg/kg	Date Analyzed: 01/27/12 22:24	SU!	RROGATE RF	COVERY	STUDY	
ВТЕ	X 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 / BS	SD Batcl	h: 1 Matrix	Solid		
Units: mg/kg	Date Analyzed: 01/28/12 08:38	SU!	RROGATE RF	COVERY S	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	1
o-Terphenyl		46.8	50.0	94	70-135	
Lab Batch #: 880171	Sample: 617208-1-BSD / B?	SD Bate	h: 1 Matrix	Solid	<u>. </u>	
Units: mg/kg	Date Analyzed: 01/31/12 12:16	SU	RROGATE RF	ECOVERY ?	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluorobenzene	Anaryus	0.0302	0.0300	101	80-120	1
4-Bromofluorobenzene		0.0341	0.0300	114	80-120	
Lab Batch #: 879921	Sample: 435786-001 S / MS	Bate!	h: 1 Matrix	:Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 01/26/12 22:59	SU	RROGATE RF	ECOVERY ?	STUDY	
ВТЕ	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	<u> </u>	ļ!	נען		ļ
1,4-Difluorobenzene		0.0311	0.0300	104	80-120	i
4-Bromotluorobenzene		0.0315	0.0300	105	80-120	
Lab Batch #: 880123	Sample: 435689-001 S / MS	Batch	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/27/12 16:17	SU	RROGATE KE	COVERY :	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	i
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



Project Name: EK Queen Pearce

Nork Orders : 435679	Ι,		Project II): 2008-113		
Lab Batch #: 880041	Sample: 435769-004 S / MS	S Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/28/12 03:42	SU	RROGATE RF	COVERY S	STUDY	
BTE	X by EPA 8021 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 #: 880133	Sample: 435520-006 S / MS	S Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/28/12 19:05	SU	RROGATE RF	COVERY S	STUDY	
TPH	by SW8015 Mod	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	
Lah Batch #: 880171	Sample: 435769-010 S / MS	S Batcl	h: 1 Matrix	: Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 01/31/12 17:36	SU	RROGATE RF	ECOVERY ?	STUDY	
BTE	X 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		0.0341	0.0300	114	80-120	·
Lab Batch #: 879921	Sample: 435786-001 SD / N	ASD Batcl	h: 1 Matrix:	Soil	<u>-</u>	
Units: mg/kg	Date Analyzed: 01/26/12 23:22	SU	RROGATE RF	COVERY S	STUDY	
ВТЕ	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene		0.0310	0.0300	103	80-120	i
4-Bromofluorobenzene		0.0311	0.0300	104	80-120	
Lab Batch #: 880123	Sample: 435689-001 SD / N	MSD Batcl	h: 1 Matrix	:Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 01/27/12 16:42	SU!	RROGATE RF	COVERY S	STUDY	
TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		93.5	99.6	94	70-135	
o-Terphenyl		42.7	49.8	86	70-135	. <u></u> i

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: EK Queen Pearce

Vork Orders : 435679),		Project II	D: 2008-113		
Lab Batch #: 880041	Sample: 435769-004 SD / N	MSD Bate	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/28/12 04:05	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	Analyus	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene		0.0309	0.0300	103	80-120	
Lab Batch #: 880133	Sample: 435520-006 SD / N	MSD Batc	h: ¹ Matrix:	:Soil	<u>, </u>	
Units: mg/kg	Date Analyzed: 01/28/12 19:30	SU	RROGATE RI	ECOVERY	STUDY	
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		97.9	99.5	98	70-135	
o-Terphenyl		41.6	49.8	84	70-135	
Lab Batch #: 880171	Sample: 435769-010 SD / N	MSD Bate	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/31/12 17:59	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X 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		0.0349	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





Work Order #: 435679							Pro	ject ID: 2	2008-113		
Analyst: ASA	Da	ate Prepar	ed: 01/26/201	12			Date A	nalyzed: (01/26/2012		
Lab Batch ID: 879921 Sample: 617047-1-	BKS	Batcl	n#: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUD	Y	
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	0.105	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 Vylene	(0.00100	0.100	0.102	100	0.100	0.0000	06	6	71 122	25	
0-Ayichic	<0.00100	0.100	0.102	102	0.100	0.0960	90	0	/1-155	35	
Analyst: ASA	<0.00100 Da	ate Prepar	ed: 01/27/201	102	0.100	0.0960	Date A	nalyzed: ()1/27/2012		
Analyst: ASA Lab Batch ID: 880041 Sample: 617121-1-	20.00100 Da	ate Prepar Batcl	ed: 01/27/201	102	0.100	0.0980	Date A	nalyzed: (Matrix: S)1/27/2012 Solid		
Analyst: ASA Lab Batch ID: 880041 Sample: 617121-1- Units: mg/kg	ZOUDIOU Da BKS	ate Prepar Batcl BLAN	ed: 01/27/201 n #: 1 K /BLANK \$	102 12 SPIKE / F	BLANK S	BPIKE DUPI	96 Date A	nalyzed: (Matrix: S RECOVI)1/27/2012 Solid E RY STUD	55 Y	
Analyst: ASA Lab Batch ID: 880041 Sample: 617121-1- Units: mg/kg BTEX by EPA 8021 Analytes	EKS BARK Blank Sample Result [A]	0.100 ate Prepar Batcl BLAN Spike Added [B]	0.102 ed: 01/27/201 n #: 1 K /BLANK S Blank Spike Result [C]	I2 SPIKE / E Blank Spike %R [D]	BLANK S Spike Added [E]	Blank Spike Duplicate Result [F]	Date A Date A LICATE Blk. Spk Dup. %R [G]	nalyzed: (Matrix: S RECOVI RPD %	Control Limits %R	SS VY Control Limits %RPD	Flag
Analyst: ASA Lab Batch ID: 880041 Sample: 617121-1- Units: ^{mg/kg} BTEX by EPA 8021 Analytes Benzene	COLOUIOU Da BKS BBlank Sample Result [A] <0.00100	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100	0.102 ed: 01/27/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.0924	102 12 5PIKE / F Blank Spike %R [D] 92	BLANK S Spike Added [E] 0.100	Blank Spike Duplicate Result [F] 0.0996	Date A Date A LICATE 2 Blk. Spk Dup. %R [G] 100	nalyzed: (Matrix: S RECOVI	01/27/2012 Solid ERY STUD Control Limits %R 70-130	SS VY Control Limits %RPD 35	Flag
Analyst: ASA Lab Batch ID: 880041 Sample: 617121-1- Units: mg/kg BTEX by EPA 8021 Analytes Benzene Toluene	C.00100 Da BKS BKS C C C C C C C C C C C C C C C C C C C	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100	0.102 ed: 01/27/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.0924 0.0927	IO2 I2 SPIKE / E Blank Spike %R [D] 92 93	0.100 BLANK S Spike Added [E] 0.100 0.100	Blank Spike DUPI Blank Spike Duplicate Result [F] 0.0996 0.101	Bik. Spk %R [G] 100 101	nalyzed: (Matrix: S RECOVI % 8 9	71-133 01/27/2012 Solid ERY STUD Control Limits %R 70-130 70-130	SS VY Control Limits %RPD 35 35	Flag
Analyst: ASA Lab Batch ID: 880041 Sample: 617121-1- Units: ^{mg/kg} BTEX by EPA 8021 Analytes Benzene Toluene Ethylbenzene	C.00100 Date: Control	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100 0.100	0.102 ed: 01/27/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.0924 0.0927 0.0923	IO2 I2 SPIKE / E Blank Spike %R [D] 92 93 92	BLANK S Spike Added [E] 0.100 0.100	Blank Spike Duplicate Result [F] 0.0996 0.101 0.100	Bits. Spk Dup. %R [G] 100 101	nalyzed: (Matrix: S RECOVI % 8 9 8	Control Limits %R 70-130 70-130 71-129	Y Control Limits %RPD 35 35 35	Flag
Analyst: ASA Lab Batch ID: 880041 Sample: 617121-1- Units: mg/kg BTEX by EPA 8021 Analytes Benzene Toluene Ethylbenzene m_p-Xylenes	<0.00100	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100 0.100 0.100 0.200	0.102 ed: 01/27/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.0924 0.0927 0.0923 0.187	IO2 I2 SPIKE / E Blank Spike %R [D] 92 93 92 93 92 93 92 93 92 93	BLANK S Spike Added [E] 0.100 0.100 0.100 0.100 0.100	0.0960 PIKE DUPI Blank Spike Duplicate Result [F] 0.0996 0.101 0.100 0.204	Bik. Spk 000 100 100 100 100 100	nalyzed: (Matrix: S RECOVI % 8 9 8 9 8 9	Control Limits %R 70-130 71-129 70-135	SS VY Control Limits %RPD 35 35 35 35 35 35	Flag





Work Order #: 435679							Pro	ject ID: 2	2008-113		
Analyst: ASA	Da	ate Prepar	red: 01/31/201	2			Date A	nalyzed: (01/31/2012		
Lab Batch ID: 880171 Sample: 62	17208-1-BKS	Bate	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVE	ERY STUD	Y	
BTEX by EPA 8021	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Besult [F]	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		լոյ				Kesuit [F]	[0]				
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	Da	ate Prepar	ed: 01/26/201	2			Date A	nalyzed: (01/27/2012		
Lab Batch ID: 880123Sample: 62	17180-1-BKS	Bate	h #: 1					Matrix: S	Solid		
Units: ^{mg/kg}		BLAN	K /BLANK S	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOVE	ERY STUD	Y	
TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<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	





Work Order #: 435679 Analyst: ASA Lab Batch ID: 880133	Sample: 617186-1-B	D: KS	ate Prepar Batcl	red: 01/26/201 h #: 1	2			Pro Date A	ject ID: 2 nalyzed: 0 Matrix: S	2008-113 01/28/2012 Solid		
Units: mg/kg			BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPL	ICATE	RECOVE	CRY STUD	Y	
TPH by SW801	15 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes			[B]	[C]	[D]	[E]	Result [F]	[G]				
C6-C12 Gasoline Range Hydroca	rbons	<15.0	1000	820	82	1000	843	84	3	70-135	35	
C12-C28 Diesel Range Hydrocard	bons	<15.0	1000	783	78	1000	916	92	16	70-135	35	



Form 3 - MS / MSD Recoveries

Project Name: EK Queen Pearce



Work Order #: 435679						Project II	D: 2008-1	13			
Lab Batch ID: 879921	QC- Sample ID:	435786	-001 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 01/26/2012	Date Prepared:	01/26/2	012	An	alyst:	ASA					
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Benzene	< 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	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 01/28/2012	Date Prepared:	01/27/2	012	An	alyst:	ASA					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	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 n-Xylenes						0.100	10	-	50 105		
m_p reviews	<0.00225	0.225	0.142	63	0.224	0.138	62	3	70-135	35	X

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

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 II	D: 2008-1	13			
Lab Batch ID: 880171 (Date Analyzed: 01/31/2012	C- Sample ID: Date Prepared:	435769 01/31/2	-010 S 012	Ba An	tch #: alyst:	1 Matri ASA	x: Soil				
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	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	Х
o-Xylene	<0.00111	0.111	0.0696	63	0.111	0.0733	66	5	71-133	35	X
Lab Batch ID: 880123 (Date Analyzed: 01/27/2012	C- Sample ID: Date Prepared:	435689 01/26/2	-001 S 012	Ba An	tch #: alyst:	1 Matrix ASA	k: Soil				
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Reporting Units: mg/kg TPH by SW8015 Mod Analytes	Parent Sample Result [A]	M Spike Added [B]	ATRIX SPIK Spiked Sample Result [C]	E / MAT Spiked Sample %R [D]	RIX SPI Spike Added [E]	KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G]	OVERY RPD %	STUDY Control Limits %R	Control Limits %RPD	Flag
Reporting Units: mg/kg TPH by SW8015 Mod Analytes C6-C12 Gasoline Range Hydrocarbons	Parent Sample Result [A]	M Spike Added [B] 1030	ATRIX SPIK Spiked Sample Result [C] 857	E / MAT Spiked Sample %R [D] 83	RIX SPI Spike Added [E] 1030	KE DUPLICA Duplicate Spiked Sample Result [F] 850	TE REC Spiked Dup. %R [G] 83	OVERY RPD %	STUDY Control Limits %R 70-135	Control Limits %RPD	Flag
Reporting Units: mg/kg TPH by SW8015 Mod Analytes C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons	Parent Sample Result [A] <15.5 <15.5	M Spike Added [B] 1030 1030	ATRIX SPIK Spiked Sample Result [C] 857 996	E / MAT Spiked Sample %R [D] 83 97	RIX SPI Spike Added [E] 1030 1030	KE DUPLICA Duplicate Spiked Sample Result [F] 850 916	TE REC Spiked Dup. %R [G] 83 89	OVERY RPD %	STUDY Control Limits %R 70-135 70-135	Control Limits %RPD 35 35	Flag
Reporting Units: mg/kg TPH by SW8015 Mod Analytes C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons Lab Batch ID: 880133 Date Analyzed: 01/28/2012 Reporting Units: mg/kg	Parent Sample Result [A] <15.5 <15.5 C- Sample ID: Date Prepared:	M Spike Added [B] 1030 1030 435520 01/26/2	ATRIX SPIK Spiked Sample Result [C] 857 996 -006 S 012	E / MAT Spiked Sample %R [D] 83 97 Ba An	RIX SPI Spike Added [E] 1030 1030 tch #: alyst: RIX SPI	KE DUPLICA Duplicate Spiked Sample Result [F] 850 916 1 Matrix ASA KE DUPLICA	TE REC Spiked Dup. %R [G] 83 89 k: Soil	OVERY RPD % 1 8	STUDY Control Limits %R 70-135 70-135	Control Limits %RPD 35 35	Flag
Reporting Units: mg/kg TPH by SW8015 Mod Analytes C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons Lab Batch ID: 880133 Date Analyzed: 01/28/2012 Reporting Units: mg/kg	Parent Sample Result [A] <15.5 <15.5 QC- Sample ID: Date Prepared:	M Spike Added [B] 1030 1030 435520 01/26/2 M	ATRIX SPIK Spiked Sample Result [C] 857 996 -006 S 012 ATRIX SPIK	E / MAT Spiked Sample %R [D] 83 97 Ba An E / MAT	RIX SPI Spike Added [E] 1030 1030 tch #: alyst: RIX SPI	KE DUPLICA Duplicate Spiked Sample Result [F] 850 916 1 Matrix ASA KE DUPLICA	TE REC Spiked Dup. %R [G] 83 89 k: Soil TE REC	OVERY RPD % 1 8 OVERY	STUDY Control Limits %R 70-135 70-135 STUDY	Control Limits %RPD 35 35 35	Flag
Reporting Units: mg/kg TPH by SW8015 Mod Analytes C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons Lab Batch ID: 880133 Date Analyzed: 01/28/2012 Reporting Units: mg/kg TPH by SW8015 Mod Analytes	Parent Sample Result [A] <15.5 <15.5 2C- Sample ID: Date Prepared: Parent Sample Result [A]	M Spike Added [B] 1030 1030 435520 01/26/2 M Spike Added [B]	ATRIX SPIK Spiked Sample Result [C] 857 996 -006 S 012 ATRIX SPIK Spiked Sample Result [C]	E / MAT Spiked Sample %R [D] 83 97 Ba An E / MAT Spiked Sample %R [D]	RIX SPI Spike Added [E] 1030 1030 tch #: alyst: RIX SPI RIX SPI Spike Added [E]	KE DUPLICA Duplicate Spiked Sample Result [F] 850 916 1 Matrix ASA KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G] 83 89 k: Soil TE REC Spiked Dup. %R [G]	OVERY RPD % 1 8 OVERY RPD %	STUDY Control Limits %R 70-135 70-135 STUDY Control Limits %R	Control Limits %RPD 35 35 35 Control Limits %RPD	Flag
Reporting Units: mg/kg TPH by SW8015 Mod Analytes C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons Lab Batch ID: 880133 Date Analyzed: 01/28/2012 Reporting Units: mg/kg TPH by SW8015 Mod Analytes C6-C12 Gasoline Range Hydrocarbons	Parent Sample Result [A] <15.5 <15.5 QC- Sample ID: Date Prepared: Parent Sample Result [A] <17.5	M Spike Added [B] 1030 1030 435520 01/26/2 M Spike Added [B] 1170	ATRIX SPIK Spiked Sample Result [C] 857 996 -006 S 012 ATRIX SPIK Spiked Sample Result [C] 1000	E / MAT Spiked Sample %R [D] 83 97 Ba An E / MAT Spiked Sample %R [D] 85	RIX SPI Spike Added [E] 1030 1030 tch #: alyst: RIX SPI RIX SPI Spike Added [E] 1170	KE DUPLICA Duplicate Spiked Sample Result [F] 850 916 1 Matrix ASA KE DUPLICA Duplicate Spiked Sample Result [F] 931	TE REC Spiked Dup. %R [G] 83 89 k: Soil TE REC Spiked Dup. %R [G] 80 80	OVERY RPD % 1 8 OVERY RPD % 7	STUDY Control Limits %R 70-135 70-135 STUDY Control Limits %R 70-135	Control Limits %RPD 35 35 35 Control Limits %RPD 35	Flag

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





Work Order #: 435679

Lab Batch #: 879919 Date Analyzed: 01/26/2012 08:30 QC- Sample ID: 435671-001 D	Date Prepar Batcl	red: 01/26/2012 h #: 1	2 Anal Mat	Project I yst:BRB rix: Soil	D: 2008-113	3
Reporting Units: %		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture		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

Project Manager Ben J. Arguijo Project Manager Ben J. Arguijo Company Name Ban Environmental Service Technologies, LLC Company Name Ban Environmental Service Technologies, LLC Company Name Ban Arguijo Company Name Ban Arguijo Company Name Ban Environmental Service Technologies, LLC Company Address: P.O. Box 301 City/State/Zip: Lowington, NM 88260 City/State/Zip: Lowington, NM 88260 City/State/Zip: Lowington, NM 88260 City/State/Zip: Lowington, NM 88260 Telephone No: [57]396-3278 Sampler Signature: e-mail: Lefephone No: [57]320522 Sampler Signature: -main: Lefephone No: [57]326-3273 Sampler Signature: -mainers Sampler Signature: -mainers <th>Service Technologies, LLC Ferding Depth Field Filtered 1/23/2012 1505 12 1505 14 of a ax 1/23/2012 15 10 5 10 5 11 123/2012 15 10 5 11 123/2012 15 10 5 11 123/2012 15 10 5 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 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15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/2012 15 11 123/201</th> <th>иоле Ho Ho Ho Ho Ho Ho Ho Ho Ho Ho Ho Ho Ho H</th> <th>LX 1002 TX 1006 winking Water Stecky Other Croundwater Stacky Other (Coundwater Stacky Other Croundwater Stacky Other</th> <th>me: EK Queen Pearce ##: 2008-113 ##: 2008-113 As Ag Ba Cd Cr Pb Hg Se Cd, Sod, Alkalinity) Standard Analyze For TCLP Analyze For TCLP Analyze For TCLP Analyze For TCLP Analyze For TCLP Analyze For TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP TCLP 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Company Name Basin Environmental Service Technologies, LLC Company Address: P. O. Box 301 City/State/Zip: Lowington, NM 88260 Factor Gity/State/Zip: Sampler Signature: Gity/State/Zip: Sampler Signature: Barguino@beptin R#: HD: Afficience Bagginning Deptin R#: HD: Afficience Bagginning Deptin R#: HD: R: HD: R: HD: R: HD: R: HD: R: HD: <td>Service Technologies, LLC Service Technologies, LLC Time Sampled 1/23/2012 1505 0 11/23/2012 1505 0 13 X N 1/23/2012 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 150</td> <td>Исе Исе 1429 Изл. 2004 Изор. 1429 Исе 1420 Исе /td> <td>r (Specify) annihing Water SL=Suidge Groundwater SL=Suidge A18. 8015M 8015B A18. 8015M 8015B A18. 7006 A18. 7006</td> <td>A:: C:: Lea County, NM O:: C:: C:: A:: D:: D:: A:: C:: C:: A:: D:: D:: A:: C:: C:: A:: D:: D:: A:: D:: D::<</td> <td>ее С С С С С С С С С С С С С</td>	Service Technologies, LLC Service Technologies, LLC Time Sampled 1/23/2012 1505 0 11/23/2012 1505 0 13 X N 1/23/2012 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 15 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 1505 0 150	Исе Исе 1429 Изл. 2004 Изор. 1429 Исе 1420 Исе	r (Specify) annihing Water SL=Suidge Groundwater SL=Suidge A18. 8015M 8015B A18. 8015M 8015B A18. 7006 A18. 7006	A:: C:: Lea County, NM O:: C:: C:: A:: D:: D:: A:: C:: C:: A:: D:: D:: A:: C:: C:: A:: D:: D:: A:: D:: D::<	ее С С С С С С С С С С С С С
Company Address: P. O. Box 301 City/State/Zip: Lovington, IM 86260 Telephone No: (573)396-2378 Fax No: (573)396-1429 Sampler Signature: e-mail: Sampler Signat	Atigation Atigation Atigation	Исе 1429 Hone Acon Hone Acon	r (Specify) Cr (Specify) Cr (C Specify) Cr (C Specify) Cr (C Specify Cr	M. C: Lea County, NM A: L L C: Sod, Alkalinity) T SPI/CEC I T SPI/CEC I SPI/CEC A SPI/CEC B SPI/CEC A SPI/CEC B SPI/CEC B SPI/CEC B SPI/CEC B SPI/CEC	29 Z D D D D D D D D D D D D D D D D D D
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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:	Bogin / Plains
Date/Time:	1.25.12 15:15
Lab ID # :	435679
Initials:	- PÉ

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 property preserved?	Yes	No	N/A	
13. Sample container intact?	res	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 2,5°C lbs °C lbs °C	C Ibs	°c	lbs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:
Regarding:		
Corrective Action Taken	<u>.</u>	

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



Project Id: 2008-113 Contact: Ben Arguijo Project Location: Lea County, NM



PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Mon Dec-17-12 09:40 am

Report Date: 20-DEC-12

								Project Ma	nager:	Nicholas Stra	ccione	
	Lab Id:	454259-0	001	454259-0	002	454259-	003	454259-0	004	454259-0	005	1
Analysis Requested BTEX by EPA 8021B Benzene Toluene Ethylbenzene m_p-Xylenes o-Xylene Total Xylenes Total BTEX Percent Moisture Percent Moisture C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons C28-C35 Oil Range Hydrocarbons Total TPH	Field Id:	MW-4@	10'	MW-4@	20'	MW-4@	30'	MW-4@	40'	MW-4@60'		1
	Depth:											l
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		l
	Sampled:	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	1
BTEX by EPA 8021B	Extracted:	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	
	Analyzed:	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	
	Units/RL:	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	Extracted:											
	Analyzed:	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		
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	1
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	Extracted:	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	
	Analyzed: Dec-		19:53	Dec-18-12	20:26	Dec-19-12	09:30	Dec-18-12	21:29	Dec-18-12	22:01	
	Units/RL:	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.

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Ctr Nul

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 quantiation 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
- **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	

Final 1.000



Project Name: EK Queen Pearce

Vork 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	SU	RROGATE RE	ECOVERY S	STUDY					
ВТЕХ	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	-	0.0283	0.0300	94	80-120					
4-Bromofluorobenzene		0.0252	0.0300	84	80-120					
Lab Batch #: 903016	Sample: 454259-003 / SMP	Batcl	h: 1 Matrix:	Soil	·					
Units: mg/kg	Date Analyzed: 12/17/12 14:28	SU	RROGATE RE	ECOVERY S	STUDY					
ВТЕХ	K 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		0.0279	0.0300	93	80-120					
Lab Batch #: 903016	Sample: 454259-005 / SMP	Batcl	h: ¹ Matrix:	Soil	<u> </u>					
Units: mg/kg	Date Analyzed: 12/17/12 14:45	SU	RROGATE RF	COVERY S	STUDY					
BTEX	BTEX by EPA 8021B			Recovery %R [D]	Control Limits %R	Flags				
1.4-Difluorobenzene	1 11111 y 005	0.0241	0.0300	80	80-120					
4-Bromofluorobenzene		0.0283	0.0300	94	80-120					
Lab Batch #: 903016	Sample: 454259-004 / SMP	Batcl	h: 1 Matrix:	Soil	<u>.</u>					
Units: mg/kg	Date Analyzed: 12/17/12 15:02	SU	RROGATE RF	ECOVERY S	STUDY					
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1 4-Difluorobenzene	Allaryus	0.0245	0.0300	82	80-120					
4-Bromofluorobenzene		0.0253	0.0300	84	80-120					
Lab Batch #: 903016	Sample: 454259-001 / SMP	Batc	h: 1 Matrix:	: Soil	<u> </u>					
Units: mg/kg	Date Analyzed: 12/18/12 08:30	SU	RROGATE RF	ECOVERY	STUDY					
ВТЕХ	K 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		0.0304	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



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	SU	RROGATE RI	ECOVERY	STUDY				
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane		89.5	99.7	90	70-135				
o-Terphenyl		44.0	49.9	88	70-135				
Lab Batch #: 903201	Sample: 454259-002 / SMP	Batc	h: ¹ Matrix:	Soil					
Units: mg/kg	Date Analyzed: 12/18/12 20:26	SU	RROGATE RI	ECOVERY	STUDY				
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	-	87.5	100	88	70-135				
o-Terphenyl		42.8	50.1	85	70-135				
Lab Batch #: 903201	Sample: 454259-004 / SMP	Batc	h: ¹ Matrix:	Soil					
Units: mg/kg	Date Analyzed: 12/18/12 21:29	SU	RROGATE RI	ECOVERY	STUDY				
TPH	By SW8015 Mod	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	Batc	h: 1 Matrix:	Soil	I				
Units: mg/kg	Date Analyzed: 12/18/12 22:01	SU	RROGATE RI	ECOVERY	STUDY				
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes			[D]					
1-Chlorooctane		87.5	99.5	88	70-135				
o-Terphenyl		42.3	49.8	85	70-135				
Lab Batch #: 903201	Sample: 454259-003 / SMP	Bate	h: 1 Matrix:	Soil					
Units: mg/kg	Date Analyzed: 12/19/12 09:30	SU	RROGATE RI	ECOVERY	STUDY				
TPH 1	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



Project Name: EK Queen Pearce

Vork Orders: 454259),	Project ID: 2008-113							
Lab Batch #: 903016	Sample: 631322-1-BLK / B	LK Batch: 1 Matrix: Solid							
Units: mg/kg	Date Analyzed: 12/17/12 09:54	SU	RROGATE RE	COVERY	STUDY				
BTE	X 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 / B	LK Batc	h: ¹ Matrix:	Solid					
Units: mg/kg	Date Analyzed: 12/18/12 16:44	SU	RROGATE RH	COVERY	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 / B	KS Batc	h: ¹ Matrix:	Solid	<u> </u>				
Units: mg/kg	Date Analyzed: 12/17/12 09:26	SU	RROGATE RE	COVERY	STUDY				
BTE	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 / B	KS Batc	h: 1 Matrix:	Solid	<u> </u>				
Units: mg/kg	Date Analyzed: 12/18/12 15:40	SU	SURROGATE RECOVERY STUDY						
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes	4		լոյ					
1-Chlorooctane		96.9	99.8	97	70-135				
o-Terpnenyi		56.8	49.9	114	70-135				
Lab Batch #: 903016	Sample: 631322-1-BSD / B	SD Bate	h: 1 Matrix:	Solid					
Units: mg/kg	Date Analyzed: 12/17/12 09:38	<u>su</u>	RROGATE RE		STUDY				
BTE	X 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



Project Name: EK Queen Pearce

Work Orders: 454259, Project ID: 2008-113							
Lab Batch #: 903201	Sample: 631430-1-BSD / B	SD Batch: 1 Matrix: Solid					
Units: mg/kg	Date Analyzed: 12/18/12 16:15	SU!	RROGATE RF	COVERY	STUDY	,	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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	S Batcl	h: 1 Matrix:	Soil			
Units: mg/kg	Date Analyzed: 12/17/12 15:19	SU!	RROGATE RF	COVERY	STUDY		
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene		0.0322	0.0300	107	80-120		
4-Bromofluorobenzene		0.0283	0.0300	94	80-120		
Lab Batch #: 903201	Sample: 454258-005 S / MS	S Batcl	h: 1 Matrix:	:Soil	<u> </u>		
Units: mg/kg	Date Analyzed: 12/19/12 02:09	SU:	RROGATE RF	COVERY	STUDY		
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	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 / N	MSD Batel	h: 1 Matrix	:Soil	·		
Units: mg/kg	Date Analyzed: 12/17/12 15:36	SU	RROGATE RF	COVERY	STUDY		
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1 4-Difluorobenzene	Analytes	0.0356	0.0300	110	80-120		
4-Bromofluorobenzene		0.0325	0.0300	108	80-120		
Lah Ratch #: 903201		MSD Batel	h• 1 Matrix	• Soil	<u> </u>		
Units: mg/kg	Date Analyzed: 12/19/12 02:39	SU	RROGATE RI	ECOVERY :	STUDY		
TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		95.7	99.9	96	70-135		
o-Terphenyl		51.7	50.0	103	70-135	ĺ	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution





Work Order #: 454259	Project ID: 2008-113										
Analyst: KEB	Date Prepared: 12/17/2012					Date Analyzed: 12/17/2012					
Lab Batch ID: 903016 Sample: 631322-1-E	SKS	Batch #: 1				Matrix: Solid					
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	LICATE	RECOVE	ERY STUD	Y	
BTEX by EPA 8021B Blank Spike Blank Blank Sample Result Added Spike Spike [A] Result %R					Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[D]		լոյ		Kesuit [r]	[6]				
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	Da	ate Prepar	ed: 12/18/201	2			Date A	nalyzed: 1	2/18/2012		
Lab Batch ID: 903201 Sample: 631430-1-E	SKS	Batc	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	ICATE	RECOVE	ERY STUD	Y	
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	998	1030	103	999	949	95	8	70-135	35	<u> </u>
C12-C28 Diesel Range Hydrocarbons	<15.0	998	999	100	999	930	93	7	70-135	35	1



Form 3 - MS / MSD Recoveries

Project Name: EK Queen Pearce



Work Order #: 454259						Project I	D: 2008-1	13			
Lab Batch ID: 903016 Date Analyzed: 12/17/2012	QC- Sample ID: Date Prepared:	454259 12/17/2	-002 S 012	Ba An	tch #: alyst:	1 Matri KEB	x: Soil				
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 Date Analyzed: 12/19/2012	QC- Sample ID: Date Prepared:	454258 12/18/2	-005 S 012	Ba An	tch #: alyst:	1 Matri KEB	x: Soil				
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E




Project Name: EK Queen Pearce

Work Order #: 454259

Lab Batch #: 903085				Project I	D: 2008-113	;
Date Analyzed: 12/17/2012 11:55	Date Prepar	ed: 12/17/2012	2 Anal	yst:WRU		
QC- Sample ID: 454205-001 D	Batch	n#: 1	Mat	rix: Soil		
Reporting Units: %		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte			[B]			
Percent Moisture		1.16	1.11	4	20	
Lab Batch #: 903092						
Date Analyzed: 12/17/2012 15:10	Date Prepar	ed: 12/17/2012	2 Anal	yst: WRU		
QC- Sample ID: 454259-004 D	Batch	u #• 1	Mat	riv Soil		
		1//•	Iviau	IIA. DOII		
Reporting Units: %		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Reporting Units: % Percent Moisture Analyte		SAMPLE J Parent Sample Result [A]	Sample Duplicate Result [B]	DUPLIC RPD	ATE REC Control Limits %RPD	OVERY Flag

Spike Relative Difference RPD 200 * $|\,(B\text{-}A)/(B\text{+}A)\,|$ 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			· · · · · · · · · · · · · · · · · · ·				<u></u>					- Pro	oject	Nam	e: E	(Qi	ueen	Pea	rce		· · ·	<u> </u>		i	
	Company Name	Basin Environmental Se	rvice T	echnol	ogies, LLC									-	Pr	oject	#: <u>2(</u>	08-	113	-				· · ·			
- 1964 - 1976 - 1997 - 1998 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997	Company Address:	P. O. Box 301		<u></u>	· · · · · · · · · · · · · · · · · · ·				<u>.</u>					F	roje	ct Lo	c: <u>L</u> e	a Co	ounty	, NM				<u></u>			
	City/State/Zip:	Lovington, NM 88260			۰۰ ۲۰ ۱۹ میروند میروند						•					РО	#: <u>P/</u>	м-,	J. <u>He</u>	nry							
	Telephone No:	(575)396-2378				Fax No:	(5	75) 3	96-1	429				Report	t For	mat:	X	Sta	ndar	 		TRF	۲P	[DES	
	Sampler Signature:		6			e-mail [.]	- bi	arqu	iio@	hasin	env.	com															
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(lab use	only) 4542	59			· · · · ·										E	· · ·	T	CLP: TAL:			X					, 72 hr	
B# (lab use only)			ginning Depth	iding Depth	late Sampled	ime Sampled	id Filtered tal #. of Containers	0	Prese [©] ON	J		of Conta	one (Specify)	V=Drinking Water SL=Sludge V = Groundwater S=Soll/Solid =Non-Potable Specify Other X11	H: 418. 8015M 8015B	H: TX 1005 TX 1006	ilions (Ca, mg, Na, K) ions (Cl, SO4, Alkalinity)	R / ESP / CEC	stals: As Ag Ba Cd Cr Pb Hg Se	latiles mivolatiles	EX 8021B/5030		o.R.M.	aloridae		JSH TAT (Pre-Schedule) 24, 48	andard TAT 4 DAY
<u>-4</u> (5)	FIEL		<u> </u>	<u> </u>	12/11/2012	1140	1 Fie	v	T.	I I		: z	<u>z 0</u>	A O Z		Ē	A Ca	SA	Ň	S S	لقا v	Ĕ	ż	²	; 	Щ.	
02	MW	-4 @ 10			12/11/2012	1140		Îx			+		•	Soil	Ŷ				$\left \right $		X		\neg				Â
03	MW	-4 @ 30'			12/11/2012	1200	1	x					:	Soil	x		:			11	x		:				x
ou	MW	-4 @ 40'			12/11/2012	1210	1	X						Soil	X						X						X
05	MW	-4 @ 60'			12/11/2012	1230	1	x				+	\square	Soil	х						X			+	+	\vdash	x
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Final 1.000



XENCO Laboratories



Comments

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&SAcceptable Temperature Range: 0 - 6 degCDate/ Time Received: 12/17/2012 09:40:00 AMAir and Metal samples Acceptable Range: AmbientWork Order #: 454259Temperature Measuring device used :

Sample Receipt Checklist	
#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,

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



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

Certificate of Analysis Summary 308796 PLAINS ALL AMERICAN EH&S, Midland, TX

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

	Lab Id:	308796-001			
Analysis Pogyostad	Field Id:	Prelim GW			
Analysis Kequesieu	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.

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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(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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	Phone	гах
11381 Meadowglen Lane Suite L Houston, Tx 77082-2647	(281) 589-0692	(281) 589-0695
9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, Suite 104, San Antonio, TX 78238	(210) 509-3334	(210) 509-3335
2505 N. Falkenburg Rd., Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
6017 Financial Dr., Norcross, GA 30071	(770) 449-8800	(770) 449-5477



Form 2 - Surrogate Recoveries



Project Name: E K Queen 6" Pearce

Work Order #: 308796		Project II): 2008-113		
Lab Batch #: 729592 Sample: 308660-010 S / 1	MS Ba	tch: 1 Matri	x: Water		
Units: mg/L	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	
Lab Batch #: 729592 Sample: 308660-010 SD	/ MSD Ba	tch: ¹ Matri	x: Water		
Units: mg/L	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	
Lab Batch #: 729592 Sample: 308796-001 / SN	/IP Ba	tch: ¹ Matri	x: Water	· ·	
Units: mg/L	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0369	0.0300	123	80-120	**
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	
Lab Batch #: 729592 Sample: 513044-1-BKS /	BKS Ba	tch: 1 Matri	x: Water	1 1	
Units: mg/L	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount	True		Control	Flags
Analytes	Found [A]	Amount [B]	Recovery %R [D]	Limits %R	T ings
Analytes 1,4-Difluorobenzene	Found [A] 0.0291	Amount [B] 0.0300	Recovery % R [D] 97	Limits %R 80-120	1 mgs
Analytes 1,4-Difluorobenzene 4-Bromofluorobenzene	Found [A] 0.0291 0.0340	Amount [B] 0.0300 0.0300	Recovery % R [D] 97 113 113	Limits %R 80-120 80-120	
Analytes 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 729592 Sample: 513044-1-BLK /	Found [A] 0.0291 0.0340 BLK Ba	Amount [B] 0.0300 0.0300 tch: 1 Matri	Recovery % R [D] 97 113 x: Water	Limits %R 80-120 80-120	
Analytes 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 729592 Sample: 513044-1-BLK / Units: mg/L	Found [A] 0.0291 0.0340 BLK Bar SU	Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RH	Recovery %R [D] 97 113 3 x: Water 2 COVERY \$ 3	Limits %R 80-120 80-120 STUDY	
Analytes 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 729592 Sample: 513044-1-BLK / Units: mg/L BTEX by EPA 8021B Analytes	Found [A] 0.0291 0.0340 BLK Bau SU Amount Found [A]	Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RH True Amount [B]	Recovery %R [D] 97 113 x: Water COVERY S Recovery %R [D]	Limits %R 80-120 80-120 STUDY Control Limits %R	Flags
Analytes 1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 729592 Sample: 513044-1-BLK / Units: mg/L BTEX by EPA 8021B Analytes 1,4-Difluorobenzene	Found [A] 0.0291 0.0340 BLK Bar SU Amount Found [A] 0.0350	Amount [B] 0.0300 0.0300 tch: 1 Matri RROGATE RH True Amount [B] 0.0300	Recovery %R [D] 97 113 x: Water ECOVERY S Recovery %R [D] 117	Limits %R 80-120 80-120 STUDY Control Limits %R 80-120	Flags

** Surrogates outside limits; data and surrogates confirmed 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 #: 3	308796		Project II	D: 2008-113		
Lab Batch #: 7	V29592 Sample: 513044-1-F	BSD / BSD Ba	tch: 1 Matri	x: Water		
Units: m	ng/L	SU	RROGATE RI	ECOVERY S	STUDY	
	BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0282	0.0300	94	80-120	
4-Bromofluorobenzer	ne	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.





Project Name: E K Queen 6" Pearce

Work Order #: 308796							Proj	ect ID: 2	008-113		
Analyst: BRB	Da	ate Prepar	ed: 07/30/200	8			Date A	nalyzed: 0	7/31/2008		
Lab Batch ID: 729592 Sample: 513044-1-B	KS	Bate	h#: 1					Matrix: V	Vater		
Units: mg/L		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPL	ICATE 1	RECOVE	CRY STUD	Y	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Benzene	ND	0.0500	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 II	D: 2008-1	13			
Lab Batch ID: 729592 (Date Analyzed: 07/31/2008 Reporting Units: mg/(QC- Sample ID: Date Prepared:	308660- 07/30/2	-010 S 008	Ba An	tch #: alyst:	1 Matrix BRB	K: Water				
	MATRIA SPIKE / MATRIA SPIKE DUPLICATE RECOVERT STUDY										
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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 $[D] = 100^{*}(C-A)/B$ Relative Percent Difference $RPD = 200^{*}(D-G)/(D+G)$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

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



Environmental Lab of Texas

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

Client	Basin Environmental
Date/ Time:	7/24/08 8 30
Lab ID # :	3087.96
Initials	JG

Sample Receipt Checklist

Official and the Status

Date/ Time:

#1	Temperature of container/ cooler?	Yes	No	0.5 °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 / Lin
#9	Container label(s) legible and intact?	(Yes)	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	Tes	No	
#11	Containers supplied by ELOT?	Yes	No	
#12	Samples in proper container/ bottle?	CYes	No	See Below
#13	Samples properly preserved?	(Yes)	No	See Below
#14	Sample bottles intact?	CYes	No	
#15	Preservations documented on Chain of Custody?	(Yes)	No	
#18	Containers documented on Chain of Custody?	Yes	No	
#17	Sufficient sample amount for indicated test(s)?	(169	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.

Regarding:

Corrective Action Taken:

Check all that Apply

See attached e-mail/ fax

Contacted by

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

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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



Project Id: 2008-113 Contact: Jason Henry Project Location: Lea County, NM

Certificate of Analysis Summary 322927 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: E.K. Queen 6 Inch Pearce



Date Received in Lab: Wed Jan-21-09 08:32 am

Report Date: 22-JAN-09

Ducient Managem	Deant Daman II
Project Manager:	Brent Barron, II

	Lab Id:	322927-0	001	322927-0	02	322927-0	003		
Anglusia Doguostad	Field Id:	MW-1		MW-2		MW-3	3		
Analysis Kequesiea	Depth:								
	Matrix:	WATE	WATER		WATER		R		
	Sampled:	Jan-20-09	0:45	Jan-20-09 1	Jan-20-09 11:45		13:30		
Anions by EPA 300	Extracted:								
	Analyzed:	Jan-21-09 ()9:37	Jan-21-09 0	9:37	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 1	6:00	Jan-21-09	16:00		
v	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	Jan-21-09 16:05		Jan-21-09 16:05		16:05		
	Units/RL:	mg/L	mg/L RL		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.
- **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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(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116
	Phone (281) 240-4200 (214) 902 0300 (210) 509-3334 (813) 620-2000 (305) 823-8500 (432) 563-1800 (361) 884-0371



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Vork Orders: 322927,			Project II	D: 2008-113										
Lab Batch #: 747222	Sample: 322896-001 S / N	IS Ba	itch: 1 Matri	ix: Water										
Units: mg/L		SU	JRROGATE RI	ECOVERYS	STUDY									
BTEX by E	PA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
1 4 Difluorohenzene	, us	0.0216	0.0300	105	80.120									
4-Bromofluorobenzene		0.0313	0.0300	103	80-120									
Lah Datah #. 747222	Samuelas 322806 001 SD /	MSD B.	taha 1 Matu	Water										
Lab Batch #: 747222 Units: mg/L	Sample: 322890-001 SD7	MSD Ba	IRROGATE RI	ECOVERY	STUDY									
BTEX by E	PA 8021B	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		0.0309	0.0300	103	80-120									
Lab Batch #: 747222	Sample: 322927-001 / SM	P Ba	tch: ¹ Matri	x: Water	1 1									
Units: mg/L		SU	RROGATE RI	ECOVERYS	STUDY									
BTEX by E Analy	PA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
1,4-Difluorobenzene	·	0.0324	0.0300	108	80-120									
4-Bromofluorobenzene		0.0326	0.0300	109	80-120									
Lab Batch #: 747222	Sample: 322927-002 / SM	P Ba	tch: 1 Matri	x: Water										
Units: mg/L	-	SU	RROGATE RI	ECOVERY	STUDY									
BTEX by E Analy	PA 8021B vtes	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		0.0326	0.0300	109	80-120									
Lab Batch #• 747222		MP Batch: 1 Matrix: Water												
Eub Dutch n. · · · · ===	Sample: 322927-003 / SM	P Ba	tch: 1 Matri	ix: Water		SURROGATE RECOVERY STUDY								
Units: mg/L	Sample: 322927-003 / SM	P Ba	tch: 1 Matri	ix: Water ECOVERY S	STUDY									
Units: mg/L BTEX by E	Sample: 322927-003 / SM PA 8021B	P Ba SU Amount Found [A]	ntch: 1 Matri JRROGATE RI True Amount [B]	ix: Water ECOVERY S Recovery %R [D]	STUDY Control Limits %R	Flags								
Units: mg/L BTEX by E Analy 1,4-Difluorobenzene	Sample: 322927-003 / SM PA 8021B ytes	P Ba SU Amount Found [A] 0.0326	ttch: 1 Matri JRROGATE RI Amount [B] 0.0300	ix: Water ECOVERY S Recovery %R [D] 109	STUDY Control Limits %R 80-120	Flags								

** Surrogates outside limits; data and surrogates confirmed 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 II	D: 2008-113										
Lab Batch #: 747222 Sample: 5234	400-1-BKS / BKS	Batch: 1 Matr	ix: Water										
Units: mg/L	5	SURROGATE RECOVERY STUDY											
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
1,4-Difluorobenzene	0.0279	0.0300	93	80-120									
4-Bromofluorobenzene	0.0278	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 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	0.0329	0.0300	110	80-120									
Lab Batch #: 747222 Sample: 5234	400-1-BSD / BSD	/ BSD Batch: 1 Matrix: Water											
Units: mg/L	E State Stat	SURROGATE RI	ECOVERY	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	0.0293	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.





Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 322927		Project ID:							
Lab Batch #: 747179	Sample: 74717	x: Water							
Date Analyzed: 01/21/2009	Date Prepared: 01/21/	OR							
Reporting Units: mg/L	Batch #: 1	BLANK /I	BLANK /BLANK SPIKE RECOVER						
Anions by EPA 300	Blank Result	Spike Added	Blank Spike Result	Blank Spike % B	Control Limits %R	Flags			
Analytes		[10]	[C]	[D]	70K				
Chloride	ND	10.0	9.91	99	90-110				

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 322927	Project ID: 2008-113													
Analyst: ASA	Da	ate Prepar	ed: 01/21/200	9		Date Analyzed: 01/21/2009								
Lab Batch ID: 747222 Sample: 523400-1-B	KS	Batc	h #: 1		Matrix: Water									
Units: mg/L		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]							
Benzene	ND	0.1000	0.0891	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	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			Pr	oject ID:	2008-113	
Date Analyzed: 01/21/2009 Date	te Prepared:	01/21/2009		Analyst:	LATCOR	
QC- Sample ID: 322927-001 S	Batch #:	1		Matrix:	Water	
Reporting Units: mg/L	MAT	RIX / MA'	FRIX SPIKE	RECOV	VERY STU	DY
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes	[A]	[B]				
Chloride	200	100	304	104	80-120	

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



Form 3 - MS / MSD Recoveries

Project Name: E.K. Queen 6 Inch Pearce



Work Order #: 322927	Project ID: 2008-113													
Lab Batch ID: 747222 Q Date Analyzed: 01/22/2009 1 Reporting Units: mg/L 1	C- Sample ID: 322896-001 S Batch #: 1 Matrix: Water Date Prepared: 01/21/2009 Analyst: ASA 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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ 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: E.K. Queen 6 Inch Pearce

Work Order #: 322927

Lab Batch #: 747179	Project ID: 2008-113										
Date Analyzed: 01/21/2009 Date Pr	repared: 01/2	21/2009	Analyst: LATCOR								
QC- Sample ID: 322927-001 D	Batch #:	l	Matr	ix: Water							
Reporting Units: mg/L	SAMPLE	/ SAMPLE	DUPLICATE RECOVERY								
Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag						
Analyte		[B]									
Chloride	200	200	0	20							
Lab Batch #: 747236	1			1							
Lab Batch #: 747236 Date Analyzed: 01/21/2009 Date Pr	epared: 01/2	21/2009	Analy	st: WRU							
Lab Batch #: 747236 Date Analyzed: 01/21/2009 Date Pr QC- Sample ID: 322927-001 D	epared: 01/2 Batch #: 1	21/2009	Analy Matr	st: WRU ix: Water	·						
Lab Batch #: 747236 Date Analyzed: 01/21/2009 Date Pr QC- Sample ID: 322927-001 D 322927-001 D Reporting Units: mg/L 322927-001 D	epared: 01/2 Batch #: 1 SAMPLE	21/2009 / SAMPLE	Analy Matr DUPLIC	st: WRU ix: Water ATE REC	OVERY						
Lab Batch #: 747236 Date Analyzed: 01/21/2009 Date Pr QC- Sample ID: 322927-001 D D Reporting Units: mg/L D TDS by SM2540C Analyte	epared: 01/2 Batch #: SAMPLE Parent Sample Result [A]	21/2009 / SAMPLE Sample Duplicate Result [B]	Analy Matr DUPLIC RPD	st: WRU ix: Water ATE REC Control Limits %RPD	OVERY Flag						

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

Env	vironment	al Lab o	of To	exa	IS					12 Od	600 V lessa	(Nest a, Te:	CHA 1-20 xas 1	(<i>IN</i> () Eas 7976	0F st 55	cus	TOD	Y R	EC	ORL	A	ID A	NA P	LY hon Fax:	S/S ne: 4 : 4	RE0 32-5 32-5	QUE 63-1	:ST 1800 1713				
	Project Manager:	Curt Stanley				PAGE 01 O	F 01				_							Pr	ojec	t Na	me:	E.K	. QI	lee	n 6	incl	1 Pe	агсе	e			
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	Company Address:	P. O. Box 301																1	Proj	ect L	oc:	Lea	Cou	ınty,	NM							
	City/State/Zip:	Lovington, NM 6	38260																	P)#:	PAA	- J.	Her	ту							
	Telephone No:	(505) 441-2244					Fax No:		(505)	396-	-1429	,					R	epor	t Fo	rmat		x	Stan	dard			Тте	RP			NPD	ES
	Sampler Signature	A.C.	lu.	10-	01	ns Row	· · · · · · · · mail:		csta	anle	ev@	bas	ine	nv.	cor	n						_										
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ORDER	:#: '57.	1927								Pr	PSPTV	ation	8 4 6	ofCo	ntair	ners	Ma	trix	F			TOT	AL:	\mp	+	<u>x</u>	1			() 10c)		, 72 hn
C C C LAB # (lab use only)	FIEI	LD CODE WW-1 WW-2 WW-3		Beginning Depth	Ending Depth	200 200 200 200 200 200 200 200 200 200	۲۹۹ ۱۹۹۶ ۱۹۹۶ ۱۹۹۶ ۱۹۹۶ ۱۹۹۶ ۱۹۹۶	Field Filtered	C A Containers	X X Ice	HNO,	HGI	NaCH	Na ₂ S ₂ O ₂	Norse	Other (Specify)	DW - Drinking water SL - Sludge		TPH: 418 1 8015M 8015	TPH- TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Aritons (CI, SO4, Alkalimity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg S	VOIANIes Semivolatiles	X X X BTEL 80218/5030 & BTEX 826	RCI	N.O.R.M.	PAH 8270	X X X TDS (EPA METHOD SM 2)	X X X CHLORIDES E 300	Chardreed TAT (Pre-Schedule) 24.
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	Environmental Lab of Texas Variance/ Corrective Action Report- Sample Log-In
Client	Brisin Env Plains
Date/ Time	12101 30000 8.32
Lab ID #	322921
initials.	<u> </u>

Sample Receipt Checklist

-		1.4 million		Client Initia
#1	Temperature of container/ cooler?	Yes)	No	3.5 *0
#2	Shipping container in good condition?	Yes	No	
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present 2
#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	1
#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 / Ltd
#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	1.2 million (2.2 m
#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

Date/ Time;

Contact

Regarding

Corrective Action Taken:

Check all that Apply

See attached e-mail/ fax

Contacted by

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

Houston - Dallas - San Antonio - Tampa - Miami - Latin America 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



Project Id: 2008-113 Contact: Jason Henry Project Location: Lea County, NM

Certificate of Analysis Summary 335808 PLAINS ALL AMERICAN EH&S, Midland, TX

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

	Lab Id:	335808-001	335808-002	335808-003		
Analysis Pagy astad	Field Id:	MW-1	MW-2	MW-3		
Analysis Kequesiea	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		

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

XENCO Laboratories



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

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Work Orders : 335808	, Somple: 532282-1-BKS / B	Project ID: 2008-113 KS Batch: 1 Matrix: Water				
Units: mg/L	Date Analyzed: 06/20/09 13:11	SURROGATE RECOVERY STUDY				
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0303	0.0300	101	80-120	
4-Bromofluorobenzene		0.0319	0.0300	106	80-120	
Lab Batch #: 763207	Sample: 532282-1-BSD / B	SD Ba	atch: ¹ Matri	x: Water	, ,	
Units: mg/L	Date Analyzed: 06/20/09 13:32	SU	URROGATE RE	ECOVERY	STUDY	
BTEX	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	1 11111 y teo	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene		0.0322	0.0300	107	80-120	
Lab Batch #: 763207	Sample: 532282-1-BLK / B	LK Ba	atch: 1 Matri	x: Water	1 1	
Units: mg/L	Date Analyzed: 06/20/09 14:15	SU	URROGATE RE	ECOVERYS	STUDY	
BTEX	K 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	Ba Ba	atch: 1 Matri	x: Water	,,	
Units: mg/L	Date Analyzed: 06/20/09 14:37	SU	JRROGATE RE	ECOVERY	STUDY	
BTEX	K 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	Ba	atch: 1 Matri	x: Water	·	
Units: mg/L	Units: mg/L Date Analyzed: 06/20/09 14:58 SURROGATE RECOVERY STUDY					
BTEX	K 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 Batch: 1 Matrix: Water					
Lab Batch #: 763207						
Units: mg/L	Date Analyzed: 06/20/09 15:21	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluorobenzene	Analytes	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene		0.0231	0.0300	76	80-120	*
Lab Batch #: 763207	Sample: 335808-001 S / MS	S Ba	tch: 1 Matri	ix: Water	<u> </u>	
Units: mg/L	Date Analyzed: 06/20/09 22:56	SU	RROGATE RI	ECOVERY S	STUDY	
BTE	K 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 / N	MSD Ba	tch: 1 Matri	ix: Water	<u>, </u>	
Units: mg/L	Date Analyzed: 06/20/09 23:17	SURROGATE RECOVERY STUDY				
BTE	K 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.




Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 335808 Analyst: ASA	Da	ate Prepar	ed: 06/19/200	19			Proj Date Ai	ject ID: 2 nalyzed: 0	2008-113 6/20/2009		
Lab Batch ID: 763207 Sample: 532282-1-B	KS	Batcl	h#: 1					Matrix: V	Vater		
Units: mg/L		BLAN	K /BLANK S	SPIKE / E	BLANK S	SPIKE DUPL	ICATE 1	RECOVE	ERY STUD	Y	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Begult [F]	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[U]	լոյ		Kesult [F]	[G]				
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 II): 2008-1	13			
Lab Batch ID: 763207 Q Date Analyzed: 06/20/2009 1 Reporting Units: mg/L 1	QC- Sample ID: Date Prepared:	335808- 06/19/2 M	-001 S 009 [ATRIX SPIK]	Ba An E / MAT	tch #: alyst: RIX SPI	1 Matrix ASA KE DUPLICA	x: Water	OVERY	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)/BRelative 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

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	Project Manager:	Curt Stanley	_		PAGE 01 OF	01					_		_			P	roje	ct Na	ame:	E.P	(. Q	uee	n 6 i	inch	Pe	arce			
	Company Name	Basin Environmental Ser	vice Te	chnolo	ogles, LLC	10.00						_		_	_		P	roje	ct #:	200	08-1	13							
	Company Address:	P. O. Box 301															Proj	ject	Loc:	Lea	Cou	inty,	NM	-					
	City/State/Zip:	Lovington, NM 88260																P	0#:	PA	A - J.	Her	nry						
	Telephone No:	(505) 441-2244 N	4	_		Fax No		(505)) 396	-142	9	oinc				Repo	rt Fo	orma	t:	X	Stan	dard			TR	RP			IPDE
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(Aluo	#		5				Π	2	PI	reserv	vatio	n&f	of Co	ontair	hers	r SL=Sludge	15M 8015B	TX 1006	a, K)	(alinity)		d Cr Pb Hg Se		br BTEX 8260				HOD SM 254	JUU chedule) 24, 48,
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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client:	Plains/Basin
Date/ Time:	06-18-09 C 0834
Lab ID #:	335808
Initiala	TME

Sample Receipt Checklist

#2 Ship #3 Custs #4 Cust #5 Chai #6 Sam #7 Chai #8 Chai #9 Con #10 San #11 Con #11 San #13 San #14 San #15 Pre #16 Con	Inpertative of container occent piping container in good condition? stody Seals intact on shipping container/ cooler? atody Seals intact on sample bottles/ container?/(cbo ain of Custody present? mple instructions complete of Chain of Custody? ain of Custody signed when relinquished/ received? ain of Custody agrees with sample label(s)? ntainer label(s) legible and intact? imple matrix/ properties agree with Chain of Custody? amples in proper container/ bottle? imples in proper container/ bottle? imples properly preserved? ample bottles intact? eservations documented on Chain of Custody?	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes	No No No No No No No No No No No	ID written on Cont./ Lid Not Applicable See Below See Below
#2 Ship #3 Cust #4 Cust #4 Cust #5 Chai #5 Chai #7 Chai #8 Chai #9 Con #10 San #11 Cor #12 San #14 San #14 San #15 Pre #16 Cor	pung container in good container/ cooler? stody Seals intact on shipping container/ cooler? stody Seals intact on sample bottles/ container?/[cbox ain of Custody present? mple instructions complete of Chain of Custody? ain of Custody signed when relinquished/ received? ain of Custody agrees with sample label(s)? ntainer label(s) legible and intact? imple matrix/ properties agree with Chain of Custody? ontainers supplied by ELOT? amples properly preserved? ample bottles intact? eservations documented on Chain of Custody?	Yes Yes Yes Yes Yes Yes Xes Xes Xes Xes Xes Xes	No No No No No No No No No No	Not Present Not Present ID written on Cont/ Lid Not Applicable See Below See Below
43 Gast #4 Cust #4 Cust #5 Chai #6 Sam #7 Chai #8 Chai #9 Con #10 San #11 Cor #12 San #13 Sar #14 San #15 Pre #16 Cor	stody Seals intact on sample bottles/ container?/[abs ain of Custody present? mple instructions complete of Chain of Custody? ain of Custody signed when relinquished/ received? ain of Custody agrees with sample label(s)? ntainer label(s) legible and intact? imple matrix/ properties agree with Chain of Custody? ontainers supplied by ELOT? imples in proper container/ bottle? imples properly preserved? ample bottles intact? eservations documented on Chain of Custody?		No No No No No No No No No	Not Present
#5 Chai #6 Sam #7 Chai #8 Chai #9 Con #10 San #11 Cor #12 San #13 San #14 San #15 Pre #16 Cor	an of Custody present? mple instructions complete of Chain of Custody? ain of Custody signed when relinquished/ received? ain of Custody agrees with sample label(s)? ntainer label(s) legible and intact? imple matrix/ properties agree with Chain of Custody? ontainers supplied by ELOT? imples in proper container/ bottle? imples properly preserved? ample bottles intact? eservations documented on Chain of Custody?		No No No No No No No No No	ID written on Cont / Lid Not Applicable See Below See Below
#6 Sam #7 Chai #8 Chai #9 Con #10 San #11 Cor #12 San #13 Sar #14 Sar #15 Pre #16 Cor	mple instructions complete of Chain of Custody? ain of Custody signed when relinquished/ received? ain of Custody agrees with sample label(s)? ntainer label(s) legible and intact? mmple matrix/ properties agree with Chain of Custody? ontainers supplied by ELOT? amples in proper container/ bottle? amples properly preserved? ample bottles intact? eservations documented on Chain of Custody?		No No No No No No No No	ID written on Cont / Lid Not Applicable See Below See Below
#7 Chai #8 Chai #9 Con #10 San #11 Cor #12 San #13 Sar #13 Sar #14 Sar #15 Pre #16 Cor	ain of Custody signed when relinquished/ received? ain of Custody agrees with sample label(s)? ntainer label(s) legible and intact? imple matrix/ properties agree with Chain of Custody? ontainers supplied by ELOT? imples in proper container/ bottle? imples properly preserved? ample bottles intact? eservations documented on Chain of Custody?		No No No No No No No	ID written on Cont./ Lid Not Applicable See Below See Below
#8 Chai #9 Con #10 San #11 Cor #12 San #13 San #14 San #15 Pre #16 Cor	ain of Custody agrees with sample label(s)? ntainer label(s) legible and intact? imple matrix/ properties agree with Chain of Custody? ontainers supplied by ELOT? imples in proper container/ bottle? imples properly preserved? ample bottles intact? reservations documented on Chain of Custody?	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	No No No No No No	ID written on Cont./ Lid Not Applicable See Below See Below
#9 Con #10 San #11 Cor #12 San #13 San #14 San #14 San #15 Pre #16 Cor	ntainer label(s) legible and intact? imple matrix/ properties agree with Chain of Custody? ontainers supplied by ELOT? imples in proper container/ bottle? imples properly preserved? ample bottles intact? reservations documented on Chain of Custody?	Res Res Res Res Res Res	No No No No No	Not Applicable See Below See Below
#10 San #11 Cor #12 San #13 San #14 San #14 San #15 Pre #16 Cor	imple matrix/ properties agree with Chain of Custody? ontainers supplied by ELOT? amples in proper container/ bottle? amples properly preserved? ample bottles intact? eservations documented on Chain of Custody?	Tes Tes Tes Tes Yes	No No No No	See Below See Below
#11 Cor #12 San #13 San #14 San #15 Pre #16 Cor	ontainers supplied by ELOT? amples in proper container/ bottle? amples properly preserved? ample bottles intact? reservations documented on Chain of Custody?	Yes Yes Yes	No No No	See Below See Below
#12 San #13 San #14 San #15 Pre #16 Con	amples in proper container/ bottle? amples properly preserved? ample bottles intact? eservations documented on Chain of Custody?	Yes Yes	No No No	See Below See Below
#13 San #14 San #15 Pre #16 Con	amples properly preserved? ample bottles intact? eservations documented on Chain of Custody?	(Yes) (Yes)	No No	See Below
#14 Sar #15 Pre #16 Cor	ample bottles intact? reservations documented on Chain of Custody?	(Yes)	No	
#15 Pre #16 Cor	eservations documented on Chain of Custody?	(Yes)		
#16 Cor			No	
	ontainers documented on Chain of Custody?	Ves	No	
#17 Sut	ufficient sample amount for indicated test(s)?	(es)	No	See Below
#18 All :	I samples received within sufficient hold time?	(Yes)	No	See Below
#19 Sub	ubcontract of sample(s)?	Yes	No	Not Applicable
#20 VO	DC samples have zero headspace?	(Yes)	No	Not Applicable
Contact	Variance Do	cumentation		Date/ Time:
Regardin	ng			

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 (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

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



17-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 reanalysis. 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



Project Id: 2008-113 Contact: Jason Henry Project Location: Lea County, NM

Certificate of Analysis Summary 344695

PLAINS ALL AMERICAN EH&S, Midland, TX

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

	Lab Id:	344695-001	344695-002	344695-003		
Analysis Paguested	Field Id:	MW-1	MW-2	MW-3		
Analysis Kequestea	Depth:					
	Matrix:	WATER	WATER	WATER		
	Sampled:	Sep-15-09 12:30	Sep-15-09 12:50	Sep-15-09 13:15		
BTEX by EPA 8021B	Extracted:	Sep-16-09 17:00	Sep-16-09 17:00	Sep-16-09 17:00		
	Analyzed:	Sep-16-09 20:24	Sep-16-09 20:43	Sep-16-09 21:01		
	Units/RL:	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

XENCO Laboratories



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

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



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 inch Pearce

Vork Orders: 344695	',		Project II): 2008-113							
Lab Batch #: 772783	Sample: 538006-1-BKS / B ³	KS Batch	n: 1 Matrix:	Water							
Units: mg/L	Date Analyzed: 09/16/09 18:15	SU	RROGATE RE	COVERY S	STUDY						
ВТЕХ	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			נען		<u> </u>					
1,4-Difluorobenzene		0.0295	0.0300	98	80-120	<u> </u>					
4-Bromofluorobenzene		0.0325	0.0300	108	80-120	1					
Lab Batch #: 772783	Sample: 538006-1-BSD / B ²	SD Batch	n: 1 Matrix:	Water							
Units: mg/L	Date Analyzed: 09/16/09 18:33	SU	RROGATE RF	COVERY S	STUDY						
ВТЕХ	K 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	ł	0.0325	0.0300	108	80-120						
Lah Batch #: 772783	Sample: 538006-1-BLK / B	I.K Batcl	h 1 Matrix:	Water	1 1						
Units: mg/L	Date Analyzed: 09/16/09 19:10	SU	RROGATE RF	COVERY	STUDY						
ВТЕХ	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1 4-Difluorobenzene	Analytts	0.0270	0.0300	90	80-120						
4-Bromofluorobenzene		0.0270	0.0300	62	80-120	*					
Lah Batch #: 772783	Sample: 344695-001 / SMF	Batcl	h: 1 Matrix:	: Water	<u> </u>						
Units: mg/L	Date Analyzed: 09/16/09 20:24	SURROGATE RECOVERY STUDY									
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1.4 Difluorobenzene	Allalytes	0.0270	0.0300	00	<u>°0 120</u>						
4-Bromofluorobenzene		0.0270	0.0300	56	80-120	*					
I ab Ratch #• 772783		Batcl	h. 1 Matrix:	•Water	00120						
Lab Bach "	Date Analyzed: 09/16/09 20:43	SU	RROGATE RF	ECOVERY ?	STUDY						
BTEX	X 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	Batcl	h: 1 Matrix:	Water								
Units: mg/L	Date Analyzed: 09/16/09 21:01	SU	RROGATE RI	ECOVERY	STUDY							
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
1.4-Difluorobenzene	Analytes	0.0279	0.0300	93	80-120							
4-Bromofluorobenzene		0.0119	0.0300	40	80-120	*						
Lab Batch #: 772783	Sample: 344695-001 S / MS	S Batcl	h: 1 Matrix	Water	<u>, </u>							
Units: mg/L	Date Analyzed: 09/17/09 02:16	SU	RROGATE RI	ECOVERY	STUDY							
BTEX	X 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		0.0318	0.0300	106	80-120							
Lab Batch #: 772783	Sample: 344695-001 SD / N	ASD Batcl	h: 1 Matrix	Water								
Units: mg/L	Date Analyzed: 09/17/09 02:34	SU	RROGATE RI	ECOVERY	STUDY							
BTE	X 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		0.0336	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.





Project Name: E.K. Queen 6 inch Pearce

Work Order #: 344695 Analyst: ASA Lab Batch ID: 772783 Sample: 538006.1-B	Da	ate Prepar Batel	ed: 09/16/200	9			Proj Date Ai	ject ID: 2 nalyzed: () Matrix: V	2008-113 9/16/2009 Vater		
Units: mg/L	KB	BLAN	K /BLANK S	PIKE / E	BLANK S	PIKE DUPL	ICATE 1	RECOVE	CRY STUD	Y	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1025	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 II	D: 2008-1	13			
Lab Batch ID: 772783 Q Date Analyzed: 09/17/2009 D Reporting Units: mg/L D	C- Sample ID: Date Prepared:	344695- 09/16/20 M	001 S 009 ATRIX SPIK	Ba An E / MAT	tch #: alyst: RIX SPI	1 Matrix ASA KE DUPLICA'	x: Water	OVERY S	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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ 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

								12 00	600 N lessa	Nes a, Te	st I-2 exas	0 Ea:	st 65								Ph Fa	one ax:	: 43 43	2-56	3-18	00				
Project	Manager: Curt Stanley	_		PAGE 01 OF	01			-	_	_	_	-	_	_		Pro	ojeci	Nai	me:	E.K.	Que	een	6 in	hch	Pea	rce	_	-	-	_
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Compa	ny Address: P. O. Box 301	_			1							5		_		F	Proje	ect L	.oc:	Lea	Coun	ty, M	MM							
City/Sta	ate/Zip: Lovington, NM 88260																	PC	C#:	PAA	- J. H	lenr	y					_		
Telepho	one No: (505) 441-2244				Fax No		(505)) 396	1429	1					R	eport	For	mat	. [X s	tanda	ard			TRR	P	E] NP	DE	3
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AB # (lab use only)	FIELD CODE	eginning Depth	nding Depth	Date Sampled	Time Sampled	eld Filtered	otal #. of Containers	ce	HNO ₃	HOM LVDAS	H ₂ SO ₄	Na.C.O.	None	Other (Specify)	W - Drinking Water SL-Sludge	IP = Non-Potable Specify Othe	PH: 418.1 8015M 8015	PH: TX 1005 TX 1006	ations (Ca, Mg, Na, K)	mions (CI, SO4, Alkalinity)	ARY ESP / CEC Aetais: As Aa Ba Cd Cr Pb Ha S	olatiles	ternivolatiles	STEX 80218/5036 or BTEX 828	(CI	1.0.R.M.	TDS (EPA METHOD SM 2	CHLORIDES E 300	RUSH TAT (Pre-Schedule) 24,	Standard TAT
-001	MW-1		ш	9/15/2009	1230	E	3	X	-	X	-		1		G	W	F	4	0	< 4	0 2		0	X	1	2 1		T	T)
-002	MW-2			9/15/2009	1250		3	X		x					G	W								X						>
03	MW-3			9/15/2009	1315		3	×		X		-	+		G	W				+			-	X		+	+	-	+	>
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Date/ Time:	09 110	1107 0.40			
ab ID # :	34	4695			
nitials:	0	NA			
		Sample Receip	pt Checklist		Client Is
#1 Temperature of cor	ntainer/ co	oler?	Tes	No	3.6 °C
#2 Shipping container	in good co	ondition?	CYes	No	
#3 Custody Seals inta	ct on shipp	oing container/ cooler?	Yes	No	Not Present
#4 Custody Seals inta	ct on sam	ple bottles/ container?	CYES	No	Not Present
#5 Chain of Custody p	resent?		CYes	No	
#6 Sample instruction	s complete	e of Chain of Custody?	CYes	No	
#7 Chain of Custody s	igned whe	en relinquished/ received?	Nes	No	
#8 Chain of Custody a	grees with	n sample label(s)?	Cles	No	ID written on Cont./ Lid
#9 Container label(s)	legible and	i intact?	CYes	No	Not Applicable
#10 Sample matrix/ pr	operties a	gree with Chain of Custody?	(Yes)	No	
#11 Containers supplie	ed by ELO	Τ?	(Ves	No	
#12 Samples in proper	container	/ bottle?	Res	No	See Below
#13 Samples properly	preserved	12	Yes	No	See Below
#14 Sample bottles int	act?		Yes	No	
#15 Preservations doc	umented	on Chain of Custody?	(Yes	No	
#16 Containers docum	nented on	Chain of Custody?	(Yeş	No	
#17 Sufficient sample	amount fo	r indicated test(s)?	(Yes	No	See Below
#18 All samples receiv	ved within	sufficient hold time?	CYes	No	See Below
#19 Subcontract of sa	mple(s)?		Yes	No	Not Applicable
#20 VOC samples hav	/e zero he	adspace?	ALES?	No	Not Applicable
Contact:		Variance Doo Contacted by:	cumentation		Date/ Time:
Regarding:					
Corrective Action Take	n:			1	
Check all that Apply:		See attached e-mail/ fax Cilent understands and w Cooling process had beg	ould like to pro un shortly after	ceed with sampling	n analysis g 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:2008-113Work 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



Project Id: 2008-113 Contact: Jason Henry Project Location: Lea County, NM

Certificate of Analysis Summary 353107

PLAINS ALL AMERICAN EH&S, Midland, TX

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

	Lab Id:	353107-001	353107-002	353107-003		
Analysis Paguastad	Field Id:	MW-1	MW-2	MW-3		
Analysis Kequesiea	Depth:					
	Matrix:	WATER	WATER	WATER		
	Sampled:	Nov-19-09 09:20	Nov-19-09 10:05	Nov-19-09 11:20		
BTEX by EPA 8021	Extracted:	Nov-25-09 11:45	Nov-25-09 11:45	Nov-25-09 11:45		
	Analyzed:	Nov-27-09 02:11	Nov-27-09 02:32	Nov-27-09 02:53		
	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		
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

XENCO Laboratories

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

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9701 Harry Hines Blvd , Dallas, TX 75220
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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
842 Cantwell Lane, Corpus Christi, TX 78408

		Eathrin i morriod
Phone		Fax
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(214) 902 (0300	(214) 351-9139
(210) 509-3	3334	(210) 509-3335
(813) 620-2	2000	(813) 620-2033
(305) 823-8	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 II): 2008-113		
Lab Batch #: 783632	Sample: 544331-1-BKS / BJ	KS Batch	n: 1 Matrix:	Water		
Units: mg/L	Date Analyzed: 11/27/09 00:05	SU	RROGATE RF	COVERY S	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes		'	נען		i
1,4-Difluorobenzene		0.0299	0.0300	100	80-120	
4-Bromofluorobenzene		0.0296	0.0300	99	80-120	<u>ı </u>
Lab Batch #: 783632	Sample: 544331-1-BSD / BS	SD Batch	h: <u>1</u> Matrix:	:Water		
Units: mg/L	Date Analyzed: 11/27/09 00:26	SU	RROGATE RF	ECOVERY S	STUDY	
ВТЕ	X 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	. <u> </u>
4-Bromofluorobenzene		0.0291	0.0300	97	80-120	
Lah Batch #: 783632	Sample: 544331-1-BLK / B	I.K Batcl	h: 1 Matrix	·Water	<u> </u>	
Units: mg/L	Date Analyzed: 11/27/09 01:08	SU!	RROGATE RF	ECOVERY S	STUDY	
BTE	X 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	1
4-Bromofluorobenzene		0.0290	0.0300	97	80-120	
Lab Batch #: 783632	Sample: 353107-001 / SMP	Batcl	h: 1 Matrix	:Water	<u>.</u>	
Units: mg/L	Date Analyzed: 11/27/09 02:11	SU!	RROGATE RF	ECOVERY ?	STUDY	
BTE	X 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	1
4-Bromofluorobenzene		0.0295	0.0300	98	80-120	
Lab Batch #: 783632	Sample: 353107-002 / SMP	Batcl	h: 1 Matrix	:Water	<u> </u>	
Units: mg/L	Date Analyzed: 11/27/09 02:32	SU!	RROGATE RF	ECOVERY S	STUDY	
BTE	X 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	i
4-Bromofluorobenzene	i	0.0298	0.0300	99	80-120	i

* 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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Vork Orders : 353107	,		Project II	D: 2008-113										
Lab Batch #: 783632	Sample: 353107-003 / SMP	Batel	h: ¹ Matrix:	Water										
Units: mg/L	Date Analyzed: 11/27/09 02:53	SURROGATE RECOVERY STUDY												
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
14 Difluorahangana	Analytes	0.0270	[~]	80.120										
1,4-Diffuorobenzene		0.0270	0.0300	90	80-120									
4-Bromonuorobenzene		0.0295	0.0300	98	80-120									
Lab Batch #: 783632	Sample: 353107-001 S / MS	Batcl	h: ¹ Matrix:	Water										
Units: mg/L	Date Analyzed: 11/27/09 16:57	SURROGATE RECOVERY STUDY												
BTE	X by EPA 8021	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 / M	ISD Batcl	h: ¹ Matrix:	Water	<u> </u>									
Units: mg/L	Date Analyzed: 11/27/09 17:18	SU	RROGATE RI	ECOVERY	STUDY									
BTE	X 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 353107 Analyst: ASA	Date Prepared: 11/25/2009 Date Analy												
Lab Batch ID: 783632 Sample: 544331-1-B	SKS	S 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 II	D: 2008-1	13			
Lab Batch ID: 783632 Q Date Analyzed: 11/27/2009 1 Reporting Units: mg/L 1	C- Sample ID: Date Prepared:	353107- 11/25/2	-001 S 009 IATRIX SPIK	Ba An E / MAT	tch #: alyst: RIX SPI	1 Matrix ASA KE DUPLICA	x: Water	OVERY S	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)/BRelative 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 10 of 12

Environmental Lab of Texas

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CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765

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

	Project Manager:	Curt Stanley				PAGE 01 OF	01										-	P	ojec	t Nar	ne:	E.K.	Qu	ееп	1 6 i r	nch	Pea	ILCE	<u> </u>				
	Company Name	Basin Enviro	nmental Serv	ice Te	chnolo	gies, LLC											-		Pi	rojec	t#:_	2001	<u>}-11</u>	3									
	Company Address:	P. O. Box 301	I														-		Proj	ect L	oc:	Lea (Cour	nty, I	NM								
	City/State/Zip:	Lovington, N	M 88260														-			PC)#:_	PAA	- J. I	Heni	<u>y</u>								
	Telephone No:	(505) 441-224	14				Fax No:		(505)	396-	142						. 1	Repo	rt Fo	rmat	: [× s	itand	lard			TR	RP		י 🗌	I PDE	S	
	Sampler Signature:		Hituh for C.L. Reyons e-mail: <u>cstanley@basinenv.com</u>									<u>n</u>			_								هنيس										
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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:	A1_

Sample Receipt Checklist

Client Initials

			Nio	510 °C	
#1	Temperature of container/ cooler?	res		<u> </u>	
#2	Shipping container in good condition?	Yes	<u>NO</u>		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	(res)	No	Not Present	
#5	Chain of Custody present?	(Yès)	No		
#6	Sample instructions complete of Chain of Custody?	(es)	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?	Tes	No	Not Applicable	

Variance Documentation

Contact:	Contacted by:		Date/ Time:
Regarding:			
		· · · · · · · · · · · · · · · · · · ·	
Corrective Action Taken:			
-			
		,	

Check all that Apply:

一、大学的人们的人们 建水子

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:2008-113Work 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.



Project Id: 2008-113 Contact: Jason Henry Project Location: Lea County, NM

Certificate of Analysis Summary 374690

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: E.K. Queen 6 Inch Pearce



Date Received in Lab: Thu May-27-10 01:40 pm

Report Date: 03-JUN-10

Project Manager: Brent Barron, II

	Lab Id:	374690-001	374690-002	374690-003		
Analysis Pognostad	Field Id:	MW-1	MW-2	MW-3		
Analysis Kequestea	Depth:					
	Matrix:	WATER	WATER	WATER		
	Sampled:	May-21-10 09:00	May-21-10 10:00	May-21-10 11:00		
BTEX by EPA 8021	Extracted:	Jun-01-10 14:30	Jun-01-10 14:30	Jun-01-10 14:30		
	Analyzed:	Jun-02-10 10:38	Jun-02-10 11:00	Jun-02-10 11:23		
	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		
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.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Brent Barron, II

Odessa Laboratory Manager

XENCO Laboratories



- 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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(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

Nork Orders : 374690),	Project ID: 2008-113					
Lab Batch #: 809036	Sample: 564762-1-BKS / B!	KS Batch: 1 Matrix: Water					
Units: mg/L	Date Analyzed: 06/01/10 15:26	SURROGATE RECOVERY STUDY					
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene		0.0309	0.0300	103	80-120		
4-Bromofluorobenzene		0.0302	0.0300	101	80-120		
Lab Batch #: 809036	Sample: 564762-1-BSD / B;	SD Batcł	n: 1 Matrix:	Water	<u>.</u>		
Units: mg/L	Date Analyzed: 06/01/10 15:48	SUI	RROGATE RF	COVERY	STUDY		
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1.4-Difluorobenzene	Allaryus	0.0298	0.0300	99	80-120	í	
4-Bromofluorobenzene		0.0313	0.0300	104	80-120	í	
Lah Ratch #: 809036		I.K Batcł	h. 1 Matrix	•Water	<u> </u>		
Units: mg/L	Date Analyzed: 06/01/10 16:34	SURROGATE RECOVERY STUDY					
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1.4-Difluorobenzene		0.0245	0.0300	82	80-120	1	
4-Bromofluorobenzene		0.0326	0.0300	109	80-120		
Lab Batch #: 809036	Sample: 374690-001 / SMP	Batcl	n: 1 Matrix	:Water	<u>. </u>		
Units: mg/L	Date Analyzed: 06/02/10 10:38	SURROGATE RECOVERY STUDY					
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1 4-Difluorobenzene	Anaryus	0.0237	0.0300	79	80-120	*	
4-Bromofluorobenzene		0.0289	0.0300	96	80-120	Í	
Lab Batch #: 809036	Sample: 374690-002 / SMP	Batch: 1 Matrix: Water					
Units: mg/L	Date Analyzed: 06/02/10 11:00	SURROGATE RECOVERY STUDY					
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene		0.0240	0.0300	80	80-120		
4-Bromofluorobenzene		0.0307	0.0300	102	80-120	1	

* 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 / BAll 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 Batch: 1 Matrix: Water					
Lab Batch #: 809036	Sample: 374690-003 / SMP						
Units: mg/L	SURROGATE RECOVERY STUDY						
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1 4 Difluorohanzana	Analytes	0.0240	0.0200	60	80.120		
1,4-Diffuorobenzene		0.0240	0.0300	80	80-120		
		0.0297	0.0300	99	80-120		
Lab Batch #: 809036	Sample: 374248-007 S / MS	S Batch: 1 Matrix: Water					
Units: mg/L	Date Analyzed: 06/02/10 14:00	SURROGATE RECOVERY STUDY					
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1.4 Difluorobenzene	Anarytes	0.0288	0.0200	06	80.120		
1,4-Diffuorobenzene		0.0288	0.0300	90	80-120		
4-Biomonuorobenzene		0.0287	0.0300	90	80-120		
Lab Batch #: 809036	Sample: 374248-007 SD / N	MSD Batch: 1 Matrix: Water					
Units: mg/L	Date Analyzed: 06/02/10 14:22	SURROGATE RECOVERY STUDY					
BTE	X 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 / BAll results are based on MDL and validated for QC purposes.




Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 374690 Analyst: ASA Lab Batch ID: 809036 Sample: 564762 1 1	Da	Project ID: 2008-113 Date Prepared: 06/01/2010 Date Analyzed: 06/01/2010 S 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 Q Date Analyzed: 06/02/2010 A Reporting Units: mg/L A	QC- Sample ID: 374248-007 S Batch #: 1 Matrix: Water Date Prepared: 06/01/2010 Analyst: ASA 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)/BRelative 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 10 of 12

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765

Phone: 432-563-1800 Fax: 432-563-1713 A Party of the second
	Project Manager:	Curt Stanle	у			PAGE 01 O	F 01										_	P	rojec	t Na	me:	E.K.	Qu	een	6 ir	nch	Реа	rce				
	Company Name	Basin Envir	onmental Ser	vice Te	chnol	ogies, LLC													P	rojec	:t#:_	200	3-11	3								_
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	City/State/Zip:	Lovington,	NM 88260														_			PC	D#:_	PAA	- J. F	lenry	L							
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Laboratories

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: Var	Sin Env.	Plains
Date/Time: 5	3.27.10 1.	3:40
Lab ID #:	374690)
Initials:	AL	

Sample Receipt Checklist

1. Sample on ice?			Blue	Water	No							
2. Shipping containe	er in good condition?		Yes	No	None							
3. Custody seals int	act on shipping containe	r (cooler) and bottles?	Yes	No	N/A							
4. Chain of Custody	present?		(Yes)	No								
5. Sample instructio	ns complete on chain of	custody?	(Yes)	No								
6. Any missing / extr	ra samples?	Yes	(No)	····								
7. Chain of custody	signed when relinquishe	(Yes)	No									
8. Chain of custody	agrees with sample lable	e(s)?	Yes	No								
9. Container labels I	egible legible and intaction	>	Yes	No								
10. Sample matrix /	properties agree with ch	ain of custody?	(Yes)	No								
11. Samples in prop	er container / bottle?		(Yes)	No								
12. Samples proper	ly preserved?		Yes	No	N/A							
13. Sample containe	er intact?		(Yeg	No								
14. Sufficient sample	e amount for indicated te	st(s)?	res	No								
15. All samples rece	ived within sufficient hold	d time?	Yes	No								
16. Subcontract of s	ample(s)?	Alter and a second s	Yes	No	(N/A)							
17. Voc sample have	e zero head space?		Yes	No	N/A							
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4	No.	Cooler 5	No.						
ibs 3.6°C	lbs °C	lbs °C	lbs	°C	lbs	°C						
	Nonconformance Documentation											

Contact:_____Date/Time:_____D

Regarding:

Corrective ActionTaken:

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

Final Ver. 1.000

Analytical Report 396347

for PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

09-NOV-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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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:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 396347

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Fri Nov-05-10 03:15 pm

Report Date: 09-NOV-10

Project Manager: Brent Barron, II

	Lab Id:	396347-001	396347-002	396347-003		
Analysis Paguested	Field Id:	MW-1	MW-2	MW-3		
Analysis Kequestea	Depth:					
	Matrix:	WATER	WATER	WATER		
Sample		Nov-02-10 12:00	Nov-02-10 13:00	Nov-02-10 14:00		
BTEX by EPA 8021B Extracted		Nov-08-10 11:45	Nov-08-10 11:45	Nov-08-10 11:45		
	Analyzed:	Nov-09-10 03:46	Nov-09-10 04:09	Nov-09-10 04:31		
	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		

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

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Brent Barron, II

Odessa Laboratory Manager



Flagging Criteria

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

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

BRL Below Reporting Limit.

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

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2505 North Falkenburg Rd, Tampa, FL 33619	
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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(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



Project Name: EK Queen Pearce

Vork Orders: 396347	Vork Orders : 396347, Project ID: 2008-113								
Lab Batch #: 831143	Sample: 578218-1-BKS / B!	KS Batcl	h: <u>1</u> Matrix	:Water					
Units: mg/L	Date Analyzed: 11/08/10 23:36	SU!	RROGATE RF	ECOVERY S	STUDY				
ВТЕХ	X 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		0.0296	0.0300	99	80-120	·			
Lab Batch #: 831143	Sample: 578218-1-BSD / BS	SD Batcl	h: 1 Matrix	:Water					
Units: mg/L	Date Analyzed: 11/08/10 23:59	SU!	RROGATE RF	ECOVERY S	STUDY				
ВТЕУ	X 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		0.0310	0.0300	103	80-120				
Lab Batch #: 831143	Sample: 578218-1-BLK / B	LK Batcl	h: 1 Matrix	Water	<u>.</u> .				
Units: mg/L	Date Analyzed: 11/09/10 01:08	SURROGATE RECOVERY STUDY							
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	-	0.0269	0.0300	90	80-120				
4-Bromofluorobenzene		0.0278	0.0300	93	80-120	·			
Lab Batch #: 831143	Sample: 396347-001 / SMP	Batcl	h: 1 Matrix	:Water					
Units: mg/L	Date Analyzed: 11/09/10 03:46	SU!	RROGATE RF	ECOVERY S	STUDY				
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene		0.0269	0.0300	90	80-120				
4-Bromofluorobenzene		0.0290	0.0300	97	80-120				
Lab Batch #: 831143	Sample: 396347-002 / SMP	Batcl	h: 1 Matrix	Water	<u>.</u>				
Units: mg/L	Date Analyzed: 11/09/10 04:09	SU:	RROGATE RF	ECOVERY S	STUDY				
BTEX	X 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		0.0285	0.0300	95	80-120	. <u></u>			

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: EK Queen Pearce

Work Orders : 396347	,		Project II	D: 2008-113				
Lab Batch #: 831143	Sample: 396347-003 / SMP	Batc	h: ¹ Matrix:	Water				
Units: mg/L	Date Analyzed: 11/09/10 04:31	SU	RROGATE RI	ECOVERY	STUDY			
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1.4-Difluorobenzene	Analytes	0.0266	0.0300	89	80-120			
4-Bromofluorobenzene		0.0288	0.0300	96	80-120			
Lab Batch #: 831143	Sample: 396347-003 S / MS	B Batc	h: ¹ Matrix:	Water				
Units: mg/L	Date Analyzed: 11/09/10 05:16	SURROGATE RECOVERY STUDY						
BTEX	X 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 / M	ASD Bate	h: ¹ Matrix:	Water				
Units: mg/L	Date Analyzed: 11/09/10 05:39	SU	RROGATE RI	ECOVERY	STUDY			
BTE	X 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





Project Name: EK Queen Pearce

Work Order #: 396347 Analyst: ASA Leb Botch ID: 021142	Da	Project ID: 2008-113 Date Prepared: 11/08/2010 Date Analyzed: 11/08/2010 Same Batch #: 1 Matrix: Water										
Units: mg/L	5KS	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 II	D: 2008-1	13			
Lab Batch ID: 831143 Q Date Analyzed: 11/09/2010 I Reporting Units: mg/L I	C- Sample ID: Date Prepared:	396347- 11/08/20	003 S 010 ATRIX SPIK	Ba An E / MAT	tch #: alyst: RIX SPI	1 Matriz ASA KE DUPLICA	x: Water TE REC	OVERYS	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)/BRelative 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 10 of 12

Environmental Lab of Texas

Ben J. Arguijo

(575)396-2378

Project Manager:

Company Name

City/State/Zip:

Telephone No:

Company Address: P.O. Box 301

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

NPDES

Phone: 432-563-1800 12600 West I-20 East Fax: 432-563-1713 Odessa, Texas 79765 Project Name: EK Queen Pearce Project #: 2008-113 Basin Environmental Service Technologies, LLC Project Loc: Lea County, NM PO #: PAA-J. Henry Lovington, NM 88260 X Standard Fax No: (505) 396-1429 Report Format: Sampler Signature: Super lowey pm@basinenv.com e-mail:

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(lab use o	nly)																F			TO	LP:	_		\square	┛			Τ		2 hrs	
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XENCO Laboratorias

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Phoenix, Sen Antonio, Tailin

Rouston, Marchi, Coessa, Frances, States

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

Freiogin / Nonconford Labe Report - Sample Log-In

Client: Basin Environmental	Ph
Date/Time: 11-5-10 15.15	
<u>10:396347</u>	÷
tials XM	

Sample As that Chacklist

1. Samples on ice?	Slue	(Water)	No	
2. Shipping container in good condition?	Yes	No	None	
3. Custody seals intact on shipping container (acolor) and a contrainer (acolor) and a	Yes	No	N/A	
4. Chain of Custocher me of	Yes	No		
5. Sample instructions congress on chain of custody?	(Yes)	No		
6. Any missing a sure stand	Yes	No		
7. Chain of customy signed were relinquished a selection	Yes	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		
9. Container labers regibre ann pract?	Yes	NO		
10. Sample matrix / properties agree with chain of castoc-	Yes	No		
11. Samples in proper contained bottle?	Yes	No		
12. Samples provide or envel	Yes	No	N/A	
12. Seriese container ind str	(Yes)	No		
14. Sufficient same and and indicated test(s)?	Yes	No		
15. All camples service the michard hold these	Yes	No		
16. Subcontract () sample, s)?	Yes	No	N/A	
17. VOC sample dave zero head apage?	Yes	No	N/A	
18. Cooler 1 No. (Cooler No. Doe or Bate	Cooler 4 No).	Cooler 5 No.	i
2.6 20 5 60	°C Ibs	°C	ibs	°C
Note: 0.500, toks of 2008 ContractContractor bus Regarding:	amentation	Date/Time:_		
Corrective Action Vaker:				
Check all that apply: Coboline roccess has been trained and a single difficience by difficience of the second difficience	Sang event and o Sang Teacperature con Sangerature con	ut of temper nditions	ature	

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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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)



12-MAY-11

SALE ACCREDING

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



Total BTEX

Project Id: 2008-113

Contact: Jason Henry

Certificate of Analysis Summary 415745

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Fri May-06-11 03:27 pm

Report Date: 12-MAY-11

0.0010

ND

roject Location: Lea County, NM								Report	Date.	12-101/11-11	
Jour Locations Loa County, 1001								Project Mai	nager:	Brent Barron, II	
	Lab Id:	415745-0	001	415745-0	02	415745-0	03	415745-0	04		
An aluaia Do an ortod	Field Id:	MW-1		MW-2		MW-3		Travel Bla	ank		
Analysis Kequesiea	Depth:										
	Matrix:	WATE	R	WATEI	ર	WATEI	R	WATER	R		
	Sampled:	May-05-11	15:30	May-05-11	13:45	May-05-11	12:30	May-05-11	12:00		
BTEX by EPA 8021	Extracted:	May-09-11	09:02	May-09-11	09:02	May-09-11	09:02	May-09-11	16:12		
	Analyzed:	May-10-11	11:35	May-10-11	12:36	May-10-11	12:58	May-10-11	17:40		
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL		
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010		
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020		
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010		
m_p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020		
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010		
Xylenes, Total		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010)	

ND

0.0010

ND

0.0010

0.0010

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, 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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(210) 509-3334	(210) 509-3335
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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



Project Name: EK Queen Pearce

Nork Orders : 415745	, ',		Project II): 2008-113		
Lab Batch #: 855386	Sample: 602414-1-BKS / BF	KS Batch:	: 1 Matrix:	Water		
Units: mg/L	Date Analyzed: 05/09/11 11:23	SUR	ROGATE RI	ECOVERY S	STUDY	
ВТЕ	X 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		0.0325	0.0300	108	80-120	
Lab Batch #: 855386	Sample: 602414-1-BSD / BS	SD Batch:	: 1 Matrix:	Water		
Units: mg/L	Date Analyzed: 05/09/11 11:45	SUR	ROGATE RI	COVERY	STUDY	
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	Tinui y teo	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene		0.0315	0.0300	105	80-120	
Lab Batch #: 855386	Sample: 602414-1-BLK / BI	LK Batch:	1 Matrix:	Water	<u>ı </u>	
Units: mg/L	Date Analyzed: 05/09/11 12:52	SUR	ROGATE RE	COVERY S	STUDY	
ВТЕ	X by EPA 8021 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		0.0270	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	SUR	ROGATE RI	COVERY	STUDY	
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0340	0.0300	113	80-120	
4-Bromofluorobenzene		0.0291	0.0300	97	80-120	
Lab Batch #: 855386	Sample: 415745-001 SD / M	ISD Batch:	: 1 Matrix:	Water	<u> </u>	
Units: mg/L	Date Analyzed: 05/09/11 18:43	SUR	ROGATE RI	ECOVERY	STUDY	
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0343	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



Project Name: EK Queen Pearce

Vork Orders : 415745),		Project IF): 2008-113		
Lab Batch #: 855386	Sample: 415745-001 / SMP	Batch	a: 1 Matrix:	Water		
Units: mg/L	Date Analyzed: 05/10/11 11:35	SU	RROGATE RF	COVERY S	STUDY	
ВТЕ	X by EPA 8021 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		0.0262	0.0300	87	80-120	·
Lab Batch #: 855386	Sample: 415745-002 / SMP	Batcl	n: 1 Matrix:	Water		
Units: mg/L	Date Analyzed: 05/10/11 12:36	SU	RROGATE RF	COVERY S	STUDY	
BTE	X 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		0.0270	0.0300	90	80-120	
Lab Batch #: 855386	Sample: 415745-003 / SMP	Batcl	h: 1 Matrix:	Water		
Units: mg/L	Date Analyzed: 05/10/11 12:58	SU	RROGATE RF	COVERY S	STUDY	
BTE	X 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		0.0258	0.0300	86	80-120	·
Lab Batch #: 855780	Sample: 602621-1-BKS / BK	S Batcl	h: 1 Matrix:	Water		
Units: mg/L	Date Analyzed: 05/10/11 15:26	SU	RROGATE RF	COVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluorobenzene		0.0358	0.0300	119	80-120	i
4-Bromofluorobenzene		0.0318	0.0300	106	80-120	
Lab Batch #: 855780	Sample: 602621-1-BSD / BS	D Batcl	h: 1 Matrix	:Water	<u>, t</u>	
Units: mg/L	Date Analyzed: 05/10/11 15:48	SU!	RROGATE RF	COVERY S	STUDY	
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	-	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene		0.0317	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



Project Name: EK Queen Pearce

Vork Orders : 415745	•		Project II	D: 2008-113		
Lab Batch #: 855780	Sample: 602621-1-BLK / B	LK Batel	h: ¹ Matrix:	Water		
Units: mg/L	Date Analyzed: 05/10/11 16:55	SU	RROGATE RE	ECOVERY S	STUDY	
ВТЕ	X 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		0.0256	0.0300	85	80-120	
Lab Batch #: 855780	Sample: 415745-004 / SMP	, Batc	h: 1 Matrix:	Water	·	
Units: mg/L	Date Analyzed: 05/10/11 17:40	SU	RROGATE RE	ECOVERY S	STUDY	
BTE	X by EPA 8021	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		0.0259	0.0300	86	80-120	
Lab Batch #: 855780	Sample: 415803-001 S / MS	S Batc	h: ¹ Matrix:	Water	<u>ı </u>	
Units: mg/L	Date Analyzed: 05/11/11 10:08	SU	RROGATE RH	ECOVERY S	STUDY	
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0322	0.0300	107	80-120	
4-Bromofluorobenzene		0.0313	0.0300	104	80-120	
Lab Batch #: 855780	Sample: 415803-001 SD / M	MSD Bate	h: 1 Matrix:	Water	<u>.</u>	
Units: mg/L	Date Analyzed: 05/11/11 10:31	SU	RROGATE RE	ECOVERY S	STUDY	
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0327	0.0300	109	80-120	 I
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





Project Name: EK Queen Pearce

Work Order #: 415745							Pro	ject ID: 2	2008-113		
Analyst: ASA	Da	ite Prepar	ed: 05/09/201	. 1			Date A	nalyzed: ()5/09/2011		
Lab Batch ID: 855386 Sample: 602414-1-	BKS	Batch	1#: 1					Matrix: V	Nater		
Units: mg/L		BLAN	K /BLANK S	SPIKE / B	BLANK S	PIKE DUPI	JCATE 1	RECOVE	ERY STUD	Y	
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	0.104	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 Vulono	<0.00100	0.100	0.100	100	0.100	0.107	107	2	71 133	25	
0-Ayıcııc	<0.00100	0.100	0.109	109	0.100	0.107	107	2	71-133	25	
Analyst: ASA	<0.00100 Da	te Prepar	ed: 05/09/201	109	0.100	0.107	Date A	nalyzed: ()5/10/2011	23	
Analyst: ASA Lab Batch ID: 855780 Sample: 602621-1-	Da JKS	ate Prepar Batch	ed: 05/09/201	109	0.100	0.107	Date A	nalyzed: (Matrix: \)5/10/2011 Vater	23	
Analyst: ASA Lab Batch ID: 855780 Sample: 602621-1- Units: mg/L	BKS	ate Prepar Batch BLAN	ed: 05/09/201 #: 1 K/BLANK S	109 11 SPIKE / B	LANK S	PIKE DUPI	Date A	nalyzed: (Matrix: \ RECOVE)5/10/2011 Water	Y	
Analyst: ASA Lab Batch ID: 855780 Sample: 602621-1- Units: mg/L BTEX by EPA 8021 Analytes	Dr BKS Blank Sample Result [A]	0.100 ate Prepar Batch BLAN Spike Added [B]	ed: 05/09/201 n #: 1 K /BLANK S Blank Spike Result [C]	SPIKE / E Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Date A	nalyzed: (Matrix: RECOVH RPD %)5/10/2011 Water CRY STUD Control Limits %R	Y Control Limits %RPD	Flag
Analyst: ASA Lab Batch ID: 855780 Sample: 602621-1- Units: mg/L BTEX by EPA 8021 Analytes Benzene	Dr BKS BIank Sample Result [A] <0.00100	ate Prepar Batcl BLAN: Spike Added [B] 0.100	ed: 05/09/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.111	SPIKE / F Blank Spike %R [D] 111	BLANK S Spike Added [E] 0.100	Blank Spike Duplicate Result [F] 0.106	Date A	nalyzed: (Matrix: \ RECOVI	05/10/2011 Water ERY STUD Control Limits %R 70-125	Y Control Limits %RPD 25	Flag
Analyst: ASA Lab Batch ID: 855780 Sample: 602621-1- Units: mg/L BTEX by EPA 8021 Analytes Benzene Toluene	Dr BKS Blank Sample Result [A] <0.00100 <0.00200	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100	ed: 05/09/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.111 0.120	11 SPIKE / F Blank Spike %R [D] 111 120	Spike Added [E] 0.100	Blank Spike DUPI Blank Duplicate Result [F] 0.106 0.116	Date A Date A DICATE 1 Blk. Spk Dup. %R [G] 106 116	nalyzed: (Matrix: V RECOVI %	Control Limits %R 70-125 70-125	Y Control Limits %RPD 25 25 25	Flag
Analyst: ASA Lab Batch ID: 855780 Sample: 602621-1- Units: mg/L BTEX by EPA 8021 Analytes Benzene Toluene Ethylbenzene	Dr BKS Blank Sample Result [A] <0.00100 <0.00200 <0.00100	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100 0.100 0.100	ed: 05/09/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.111 0.120 0.118	11 SPIKE / E Blank Spike %R [D] 111 120 118	Spike Added [E] 0.100 0.100	PIKE DUPI Blank Spike Duplicate Result [F] 0.106 0.111	Date A. Date A. Dup. %R [G] 106 116 111	nalyzed: (Matrix: \ RECOVI % 5 3 6	Control Limits %R 70-125 70-125 71-129	Y Control Limits %RPD 25 25 25 25	Flag
Analyst: ASA Lab Batch ID: 855780 Sample: 602621-1- Units: mg/L BTEX by EPA 8021 Analytes Benzene Toluene Ethylbenzene m_p-Xylenes	Dr BKS Blank Sample Result [A] <0.00100 <0.00100 <0.00100 <0.00100	0.100 ate Prepar Batcl BLAN Spike Added [B] 0.100 0.100 0.100 0.200	ed: 05/09/201 n #: 1 K /BLANK S Blank Spike Result [C] 0.111 0.120 0.118 0.236	Blank SPIKE / E Blank Spike %R [D] 111 120 118 118	Spike Added [E] 0.100 0.100	Blank Spike Duplicate Result [F] 0.106 0.116 0.111 0.233	Date A Date A Date A Date A Dup. %R [G] 106 116 111 117	2 nalyzed: (Matrix: RECOVI RECOVI % 5 3 6 1	Control Limits %R 70-125 70-125 71-129 70-131	Y Control Limits % RPD 25 25 25 25 25	Flag

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 II	D: 2008-1	13			
Lab Batch ID: 855386 (Date Analyzed: 05/09/2011)C- Sample ID: Date Prepared:	415745 05/09/2	-001 S 011	Ba An	tch #: alyst:	1 Matri ASA	x: Water				
Reporting Units: mg/L		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	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	Ba	tch #:	1 Matrix	x: Water				
Date Analyzed: 05/11/2011	Date Prepared:	05/09/2	011	An	alyst:	ASA					
Reporting Units: mg/L		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ 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														F	Proj€	ct Na	ame	: <u>E</u> M	Qu	leen	<u>ı Pe</u>	arc	<u>e</u>						<u> </u>
	Company Name	Basin Environmental	Service T	echnol	ogies, LLC				-					<u></u>			(Proje	ect #	: 200	08-11	13									
	Company Address:	P. O. Box 301															Pro	oject	Loc	: <u>Le</u>	a Co	unty	<u>, NM</u>	J							
	City/State/Zip:	Lovington, NM 88260																F	°0 #	: <u>PA</u>	<u>A-J.</u>	Hen	ıry	_							
	Telephone No:	(575)396-2378				Fax No:		(5)	5) 39	96-14	129					Rep	ort F	orm	at:	X	Sta	ndar	d		П т	RR	Ρ	Ε] NP	DES	i
	Sampler Signature:	Blank	\frown			e-mail:		bjar	guij	jo@t	basir	ienv	.com	1			-													 7	ł
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ORDE	R#: 415745				1				F	reser	vatior	1&#</td><td>of Cor</td><td>ntainei I</td><td>rs</td><td>Matri</td><td>×</td><td></td><td></td><td></td><td></td><td>g Se</td><td></td><td></td><td>3260</td><td></td><td></td><td></td><td></td><td>24, 46</td><td></td></tr><tr><td>AB # (lab use only)</td><td>FIF</td><td></td><td>seginning Depth</td><td>inding Depth</td><td>Date Sampled</td><td>Time Sampled</td><td>ield Filtered</td><td>otal #. of Containers</td><td>lce</td><td>HNO₃</td><td>HCI</td><td>H2SU4</td><td>NaUH Na,S,O,</td><td>None</td><td>Other (Specify)</td><td>DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid</td><td>NP=Non-Potable Specify Other</td><td>08 MICIUS 1.814</td><td>Cations (Ca. Mq. Na. K)</td><td>Anions (Cl, SO4, Alkalinity)</td><td>SAR / ESP / CEC</td><td>Metals: As Ag Ba Cd Cr Pb Hg</td><td>Volatiles</td><td>Semivolatiles</td><td>BTEX 8021B/5030 or BTEX 8</td><td>RCI</td><td>Chloride 300</td><td></td><td></td><td>RUSH TAT (Pre-Schedule) 2</td><td>Standard TAT 4 DAY</td></tr><tr><td></td><td></td><td>MW-1</td><td><u>₩_</u></td><td><u> </u></td><td>5/5/2011</td><td>1530</td><td><u>u</u></td><td>3</td><td>x</td><td></td><td>x</td><td>+</td><td>+</td><td></td><td></td><td>GW</td><td></td><td>Ť</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td>x</td><td>Τ</td><td>Т</td><td></td><td></td><td></td><td>x</td></tr><tr><td></td><td></td><td>MW/-2</td><td></td><td>1</td><td>5/5/2011</td><td>1345</td><td></td><td>3</td><td>Y</td><td></td><td>×</td><td></td><td></td><td></td><td></td><td>GW</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>T</td><td>x</td><td></td><td></td><td>T</td><td></td><td></td><td>x</td></tr><tr><td></td><td></td><td>MW-3</td><td></td><td>1</td><td>5/5/2011</td><td>1230</td><td></td><td>3</td><td>x</td><td></td><td>x</td><td></td><td></td><td></td><td></td><td>GW</td><td>,</td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td>x</td><td></td><td></td><td></td><td>Τ</td><td></td><td>x</td></tr><tr><td></td><td></td><td></td><td>- </td><td></td><td></td><td>1.00</td><td>\square</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Τ</td><td>Τ</td><td></td><td></td><td></td><td></td><td>Τ</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>E</td><td>al Rlack</td><td></td><td></td><td>5/5/11</td><td>1900</td><td></td><td>3</td><td>x</td><td></td><td>ĸ</td><td></td><td>╈</td><td>T</td><td></td><td>61</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>K</td><td></td><td></td><td>\Box</td><td></td><td></td><td>K</td></tr><tr><td></td><td> <u>/</u> ^ ^ ^</td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Ι</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>\perp</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>⊢┥</td><td>\square</td><td>\downarrow</td><td></td><td>\rightarrow</td><td>\downarrow</td><td>┶</td><td>┢</td><td>\square</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>ļ</td><td></td><td>\square</td><td></td><td>\downarrow</td><td>_</td><td>\bot</td><td>\perp</td><td>\perp</td><td>╇</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><u> </u></td><td></td><td>Щ</td><td></td><td>\rightarrow</td><td>\rightarrow</td><td>╇</td><td>╇</td><td>+</td><td>╇</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Special</td><td>Instructions:</td><td></td><td></td><td>·····</td><td><u> </u></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Li S V</td><td>abor ampi OCs</td><td>atory e Co Free</td><td>y Co ontair e of ⊦</td><td>mme hers lead</td><td>ints Inta spa</td><td>: ct? 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XENCO Laboratories

Phoenix, San Antonio, Tampa

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

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 N	0.	Cooler 5 No.	
	lbs	°c	lbs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:
Regarding:		
Corrective Action Tak	en:	
Check all that apply:	□ Cooling process has begun shortly after sar condition acceptable by NELAC 5.5.8.3 □ Initial and Backup Temperature confirm out	npling event and out of temperature 3.1.a.1. 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) 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 Tucson (EPA Lab code: AZ00989): Arizona (AZ0758)



28-OCT-11

SALE ACCREDIES

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:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 430361

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Thu Oct-27-11 12:05 pm

Report Date: 28-OCT-11

Project Manager: Brent Barron II

	Lab Id:	430361-	001	430361-	002	430361-003			
Analysis Degreested	Field Id:	MW-	MW-1		MW-2		3		
Analysis Kequestea	Depth:								
	Matrix:	WATE	R	WATE	R	WATE	R		
	Sampled:	Oct-26-11	Oct-26-11 14:00		13:00	Oct-26-11 15:50			
BTEX by EPA 8021	Extracted:	Oct-27-11	14:30	Oct-27-11	14:30	Oct-27-11	14:30		
	Analyzed:	Oct-27-11	23:51	Oct-28-11	00:14	Oct-28-11	00:37		
	Units/RL:	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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Brent Barron II Odessa Laboratory Manager

Page 5 of 12



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 NEL	AC 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	



Project Name: EK Queen Pearce

Work Orders: 430361	ί,		Project II	J: 2008-113		
Lab Batch #: 873382	Sample: 430361-001 / SMP	Batcl	h: 1 Matrix:	Water		
Units: mg/L	Date Analyzed: 10/27/11 23:51	SU!	RROGATE RF	COVERY S	STUDY	
ВТЕ	X 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		0.0255	0.0300	85	80-120	·
Lab Batch #: 873382	Sample: 430361-002 / SMP	Batcl	h: 1 Matrix:	Water		
Units: mg/L	Date Analyzed: 10/28/11 00:14	SU!	RROGATE RF	COVERY S	STUDY	
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0269	0.0300	90	80-120	
4-Bromofluorobenzene		0.0250	0.0300	83	80-120	
Lab Batch #: 873382	Sample: 430361-003 / SMP	Batc	h: ¹ Matrix:	:Water	<u> </u>	
Units: mg/L	Date Analyzed: 10/28/11 00:37	SU.	RROGATE RF	ECOVERY S	STUDY	
BTE	X 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		0.0251	0.0300	84	80-120	·
Lab Batch #: 873382	Sample: 613305-1-BLK / BJ	LK Batc	h: 1 Matrix:	:Water		
Units: mg/L	Date Analyzed: 10/27/11 17:25	SU!	RROGATE RF	COVERY S	STUDY	
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0273	0.0300	91	80-120	
4-Bromofluorobenzene		0.0255	0.0300	85	80-120	
Lab Batch #: 873382	Sample: 613305-1-BKS / BI	KS Batc	h: 1 Matrix:	:Water	<u> </u>	
Units: mg/L	Date Analyzed: 10/27/11 15:53	SU	RROGATE RF	ECOVERY S	STUDY	
ВТЕ	X by EPA 8021 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		0.0271	0.0300	90	80-120	ı

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution


Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 430361	,		Project II	D: 2008-113						
Lab Batch #: 873382	Sample: 613305-1-BSD / B	SD Bate	h: ¹ Matrix:	Water						
Units: mg/L	Date Analyzed: 10/27/11 16:16	SU	RROGATE RI	ECOVERY	STUDY					
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1 4-Difluorobenzene	Analytes	0.0287	0.0300	96	80-120					
4-Bromofluorobenzene		0.0276	0.0300	92	80-120					
Lab Batch #: 873382	Sample: 430347-001 S / MS	S Bate	h: ¹ Matrix:	Water	1					
Units: mg/L	Date Analyzed: 10/28/11 02:07	SURROGATE RECOVERY STUDY								
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	111111 y vos	0.0289	0.0300	96	80-120					
4-Bromofluorobenzene		0.0277	0.0300	92	80-120					
Lab Batch #: 873382	Sample: 430347-001 SD / N	ASD Bate	h: ¹ Matrix:	Water						
Units: mg/L	Date Analyzed: 10/28/11 02:30	SU	RROGATE RI	ECOVERY	STUDY					
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene		0.0293	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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 430361 Analyst: ASA Lab Batch ID: 873382 Sample: 613305-1-E	Da BKS	Project ID: 2008-113 Date Prepared: 10/27/2011 Date Analyzed: 10/27/2011 Batch #: 1 Matrix: Water BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
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 #: Matrix: Water 1 Date Prepared: 10/27/2011 Analyst: ASA Date Analyzed: 10/28/2011 **Reporting Units:** mg/L MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control BTEX by EPA 8021 Sample Result Spiked Sample Spike Sample Spike Dup. RPD Limits Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] 0.00321 0.100 0.0904 87 0.100 0.0944 91 4 70-125 25 Benzene 92 Toluene < 0.00200 0.100 0.0863 86 0.100 0.0919 6 70-125 25 87 7 Ethylbenzene < 0.00100 0.100 0.0873 0.100 0.0932 93 71-129 25 m_p-Xylenes < 0.00200 0.200 0.153 77 0.200 0.161 81 5 70-131 25 < 0.00100 0.100 0.0815 82 0.100 0.0879 88 8 71-133 25 o-Xylene

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}[(C-F)/(C+F)]$ 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 10 of 12

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														_	Pr	ojec	ct Na	me:	EK	Qu	een	Pea	arce)					
	Company Name	Basin Environmental Ser	vice Te	echnol	ogies, LLC											_		Ρ	rojec	ct #:	200	8-11	3								
	Company Address:	P. O. Box 301														~		Proj	ect l	_oc:	Lea	Cou	ınty,	NM							
	City/State/Zip:	Lovington, NM 88260														_			Р	O #:	PA	<u>A-J.</u>	Hen	ſ <u>y</u>	_						
	Telephone No:	(575)396-2378				Fax No:		(57	5) 3	96-1	429					_	Repo	rt Fo	orma	t:	X	Star	darc	i	Ľ] TF	۲RP			NPD	ES
	Sampler Signature:	Cody Ward				e-mail:		bja	rgui	jo@	basi	nen	v.c c	m																	
(lab use	only)																	F			тс	CLP:	Ana	ilyze	For:	$\overline{\top}$		—		-	ş
ORDEF	R#: 4303							l		⁻ rese	rvatio	on & #	# of C	Contain	ers	T N	Aatrix	-	т <u> </u>	1	TOT	FAL:	e	\mp	7	ן ק	ł				48, 72
AB # (lab use only)	FIE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO ₃	HCI	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=Nm-Potable Snecify Other	TPH: 418.1 8015M 8015	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (CI, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Si	Volatiles	Semivolatiles RTFX 80218/5030 or BTEX 826(RCI	Chloride 300				KUSH IAI (Pre-Schedule) 24, 4 Standard TAT 4 DAY
10		WW-1			10/26/2011	1400		3			x						GW	Γ						\bot)					\Box	X
02		WW-2			10/26/2011	1300		3			х						GW							\downarrow	<u> </u>	4	_	\bot	\downarrow	\bot	x
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Relinquis	shed by:	Dete Time Received by ELOT:						l)-27.11 12:05 Temperature Upon Receipt:				<u>J.E</u>	<u>5</u> °	c																



XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

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

Phoenix, San Antonio, Tampa

Prelogin / Nonconformance Report - Sample Log-In

Client:	asin Env.	/ Plains
Date/Time:	10.27.11	12:05
Lab ID # :	4303(ol
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?	Tes	No		
10. Sample matrix / properties agree with chain of custody?	Tes	No		
11. Samples in proper container / bottle?	Tes	No		
12. Samples properly preserved?	Yes	No	N/A	
13. Sample container intact?	Tes	No		
14. Sufficient sample amount for indicated test(s)?	Tes	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?	Ves	No	N/A	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No).	Cooler 5 No.	
Ibs 2.5 °C Ibs °C Ibs °C	lbs	°c	ibs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:	
Regarding:			
Corrective Action Tak	en:		
•			
Check all that apply:	 □ Cooling process has begun shortly after sar condition acceptable by NELAC 5.5.8.3 □ Initial and Backup Temperature confirm out □ Client understands and would like to procee 	npling event and out of temperature 3.1.a.1. of temperature conditions ed 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



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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)

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08-MAY-12

SALE ACCREDIES

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





Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID:2008-113Work 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 limts.

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 limts.



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 441692

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed May-02-12 02:00 pm

Report Date: 08-MAY-12

Project Manager: Nicholas Straccione

	Lab Id:	441692-0	001	441692-0	002	441692-	003		
Analysis Paguastad	Field Id:	MW-1	MW-1		2	MW-3	3		
Analysis Kequestea	Depth:								
	Matrix:	WATE	WATER		WATER		R		
	Sampled:	May-02-12	07:00	May-02-12	07:45	May-02-12	08:30		
BTEX by EPA 8021	Extracted:	May-07-12	10:16	May-07-12	10:16	May-07-12	10:16		
	Analyzed:	May-07-12	18:31	May-07-12	20:23	May-07-12	20:45		
	Units/RL:	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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Ch-Nul

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
- **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	

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Vork Orders: 441692	<i>,</i>		Project II): 2008-113								
Lab Batch #: 887368	Sample: 441692-001 / SMP	Batcl	h: 1 Matrix:	Water								
Units: mg/L	Date Analyzed: 05/07/12 18:31	SU!	RROGATE RF	COVERY	STUDY							
ВТЕ	X 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		0.0245	0.0300	82	80-120	·						
Lab Batch #: 887368	Sample: 441692-002 / SMP	IP Batch: 1 Matrix:Water										
Units: mg/L	Date Analyzed: 05/07/12 20:23	SU!	RROGATE RF	COVERY S	STUDY							
BTE	X 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		0.0247	0.0300	82	80-120							
Lah Batch #: 887368	Sample: 441692-003 / SMP	Batc	h: 1 Matrix	:Water	<u> </u>							
Units: mg/L	Date Analyzed: 05/07/12 20:45	SU	RROGATE RF	ECOVERY S	STUDY							
BTE	X by EPA 8021	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		0.0245	0.0300	82	80-120							
Lab Batch #: 887368	Sample: 621542-1-BLK / BJ	3LK Batch: 1 Matrix: Water										
Units: mg/L	Date Analyzed: 05/07/12 12:43	SU	RROGATE RF	COVERY S	STUDY							
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
1 4 Diffuerohanzana	Analytes	0.0262	0.0200	00	90.120							
4-Bromofluorobenzene		0.0205	0.0300	86	80-120	1						
J ab Datab #. 887368	Somple: 621542-1-BKS / B!	Bate	L. 1 Matrix	Water	00.120							
Lap Dattin #. 007500	Date Analyzed • 05/07/12 11.14	SU SU	RROGATE RI	ECOVERY (STUDY							
BTE	X 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		0.0291	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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders: 441692	,		Project II	D: 2008-113								
Lab Batch #: 887368	Sample: 621542-1-BSD / B	SD Bate	h: ¹ Matrix:	Water								
Units: mg/L	Date Analyzed: 05/07/12 11:36	SU	RROGATE RI	ECOVERY	STUDY							
BTE	X 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	MS Batch: ¹ Matrix: Water										
Units: mg/L	Date Analyzed: 05/07/12 18:53	8:53 SURROGATE RECOVERY STUDY										
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
1,4-Difluorobenzene		0.0296	0.0300	99	80-120							
4-Bromofluorobenzene		0.0299	0.0300	100	80-120							
Lab Batch #: 887368	Sample: 441692-001 SD / N	ASD Bate	h: ¹ Matrix:	Water	•							
Units: mg/L	Date Analyzed: 05/07/12 19:16	SU	RROGATE RI	ECOVERY	STUDY							
BTE	X 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 441692 Analyst: SMG	D	Project ID: 2008-113 Date Prepared: 05/07/2012 Date Analyzed: 05/07/2012										
Lab Batch ID: 887368 Sampl	e: 621542-1-BKS	Batc	h#: 1					Matrix: V	Vater			
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 #: Matrix: Water 1 **Date Prepared:** 05/07/2012 Analyst: SMG **Date Analyzed:** 05/07/2012 **Reporting Units:** mg/L MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control BTEX by EPA 8021 Sample Result Spiked Sample Spike Sample Spike Dup. RPD Limits Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] < 0.00100 0.100 0.0896 90 0.100 0.0815 82 9 70-125 25 Benzene 8 Toluene < 0.00200 0.100 0.0885 89 0.100 0.0813 81 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 < 0.00100 0.100 0.0877 88 0.100 0.0811 81 8 71-133 25 o-Xylene

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}[(C-F)/(C+F)]$ 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 10 of 12

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														_ Р	rojec	t Na	me:	EK	Que	en	Pea	rce							
	Company Name	Basin Environmental	Service Te	chnol	ogies, LLC											-	P	roje	:t #: _	2008	-113	3									
	Company Address:	P. O. Box 301														_	Proj	ect l	.oc:]	Lea	Cou	nty,	NM								
	City/State/Zip:	Lovington, NM 88260)													_		P	- D #:	PAA	-J. ⊦	lenr	у								0
	Telephone No: Sampler Signature:	(575)396-2378	un		2	Fax No: e-mail:		<u>(57</u>	5) 3 rgui	96-14 ijo@b	29 asin	env.	con			- Repo	rt Fo	orma	: [X s	Stand	dard] TR	:RP	[] NF	PDES		Final 1.00
(lab use c	only)				<u> </u>	•											F			TCL TOT#	.P: \L:	Ana	lyze		-	\square		Τ	72 hrs		
	#: <u></u>	_D CODE MW-1 MW-2 MW-3	Beginning Depth	Ending Depth	Date S/2/2012 5/2/2012 5/2/2012	0700 074 <u>5</u> 074 <u>5</u> 074 <u>5</u>	Field Filtered	ω ω ω Total #. of Containers		Preserved ON ON	HCC HCC X X X X X	HOEN	f Coi		Other (Specify)	Mattix Secondary Secondary Comparison Compar	TPH: 418.1 80156 80158	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR/ESP/CEC	Metals: As Ag Ba Cd Cr PD Hg Se	Vuldutes Semivolatiles	X X X BTEX 8021B/5030 or BTEX 8260		Chloride 300			RUSH TAT (Pre-Schedule) 24, 46,	X X X Standard TAT 4 DAY	Page 11 of 12
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Special I	nstructions: ned by: WW MM	Date 5.9	17 140	me D	Received by:					· · · · · · · · · · · · · · · · · · ·					De	ate	Tim	le	Labe Sam VOC Labe Cust Cust	ple (s Fr ody ody ody	bry C Dont con seal seal	Com aine f He ntain s on s on	men rs Ini adsp ier(s) cont cool	act? ace? ace? aine er(s)			- Sector		N N N N		
Relinquist	ned by:	Date		ne	Received by:	ot: emand) }							5	Da Da	ate $\left \left(2 \right) \right $	Tim 4:(Sam I I Tem	pie h by Sa by Co pera	ture	Upa	ient F UF on Re	u 'S ceip	? DH CØ t:	rve 4.	FordEx Clar O	5 2 5 5 2		eac	x



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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: T/U	uns	<u></u>
Date/Time: 5	12/12/14:00	
Lab ID #:	441692	
Initials: At		

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		<u></u>
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	<u> </u>
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	NA	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 N	io.	Cooler 5 No.	
lbs 4.0 °C lbs °C lbs	°C lbs	s °C	lbs	°C

Nonconformance Documentation

Contact:______ Contacted by:_____ Date/Time:______ Regarding: ______ Corrective Action Taken: ______ 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. 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

Final 1.000

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







Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Ben Arguijo

Certificate of Analysis Summary 450842

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Tue Oct-16-12 03:00 pm

Report Date: 19-OCT-12

Project Manager: Nicholas Straccione

	Lab Id:	450842-0	001	450842-0	002	450842-	003		
Analysis Paguastad	Field Id:	MW-1		MW-2	2	MW-3	3		
Analysis Kequestea	Depth:								
	Matrix:	WATE	R	WATE	R	WATE	R		
	Sampled:	Oct-12-12	12:10	Oct-12-12	13:00	Oct-12-12	13:35		
BTEX by EPA 8021B	Extracted:	Oct-17-12	08:40	Oct-17-12	08:40	Oct-17-12	08:40		
	Analyzed:	Oct-17-12	14:03	Oct-17-12	14:18	Oct-17-12	14:33		
	Units/RL:	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		
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

Ch-Nul

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
- **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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LOQ Limit of Quantitation

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Phone	Fax
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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	

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Nork Orders : 450842	<i>'</i> ,		Project II): 2008-113		
Lab Batch #: 898995	Sample: 450842-001 / SMP	Bate'	h: 1 Matrix	Water		
Units: mg/L	Date Analyzed: 10/17/12 14:03	SU	RROGATE RI	COVERY	STUDY	
BTEX	X 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		0.0262	0.0300	87	80-120	
Lab Batch #: 898995	Sample: 450842-002 / SMP	Batc	h: ¹ Matrix	Water		
Units: mg/L	Date Analyzed: 10/17/12 14:18	SU	RROGATE RF	COVERY S	STUDY	
BTEX	X 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		0.0257	0.0300	86	80-120	
Lab Batch #: 898995	Sample: 450842-003 / SMP	Batc	h: ¹ Matrix	Water	<u>.</u>	
Units: mg/L	Date Analyzed: 10/17/12 14:33	SU	RROGATE RI	COVERY S	STUDY	
BTEX	X 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		0.0264	0.0300	88	80-120	
Lab Batch #: 898995	Sample: 628724-1-BLK / BL	.K Batc	h: 1 Matrix	:Water		
Units: mg/L	Date Analyzed: 10/17/12 09:55	SU	RROGATE RF	COVERY S	STUDY	
BTEX	X by EPA 8021B 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		0.0252	0.0300	84	80-120	
Lab Batch #: 898995	Sample: 628724-1-BKS / BK	S Batc'	h: 1 Matrix	Water	<u>.</u>	
Units: mg/L	Date Analyzed: 10/17/12 09:25	SU	RROGATE RI	COVERY S	STUDY	
BTEX	X 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		0.0272	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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 450842	'9		Project II	D: 2008-113		
Lab Batch #: 898995	Sample: 628724-1-BSD / B	SD Bate	h: ¹ Matrix:	Water		
Units: mg/L	Date Analyzed: 10/17/12 09:40	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	Anarytes	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene		0.0282	0.0300	94	80-120	
Lab Batch #: 898995	Sample: 450850-003 S / M	S Bate	h: ¹ Matrix:	Water	1	
Units: mg/L	Date Analyzed: 10/17/12 15:47	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0311	0.0300	104	80-120	
4-Bromofluorobenzene		0.0309	0.0300	103	80-120	
Lab Batch #: 898995	Sample: 450850-003 SD / N	MSD Batc	h: ¹ Matrix:	Water	•	
Units: mg/L	Date Analyzed: 10/17/12 16:02	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 450842							Proj	ject ID: 2	2008-113		
Analyst: KEB	Da	ate Prepar	ed: 10/17/201	2			Date A	nalyzed: 1	0/17/2012		
Lab Batch ID: 898995 Sample: 628724-1-B	KS	Batcl	h#: 1					Matrix: V	Vater		
Units: mg/L		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPL	ICATE 1	RECOVE	ERY STUD	Y	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Benzene	< 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 II	D: 2008-1	13			
Lab Batch ID: 898995 Date Analyzed: 10/17/2012 Reporting Units: mg/L	QC- Sample ID: Date Prepared:	450850 10/17/2	-003 S 012 IATRIX SPIK	Ba An E / MAT	tch #: alyst: RIX SPI	1 Matrix KEB KE DUPLICA	x: Water TE REC	OVERY	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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ 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 10 of 12



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&SAcceptable Temperature Range: 0 - 6 degCDate/ Time Received: 10/16/2012 03:00:00 PMAir and Metal samples Acceptable Range: AmbientWork Order #: 450842Temperature Measuring device used :

Sa	ample 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 contained	er/ 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 relinquish	ed/ received?	Yes	
#11 Chain of Custody agrees with sample lab	el(s)?	Yes	
#12 Container label(s) legible and intact?		Yes	
#13 Sample matrix/ properties agree with Cha	ain 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 te	st(s)?	Yes	
#18 All samples received within hold time?		Yes	
#19 Subcontract of sample(s)?		Yes	
#20 VOC samples have zero headspace (less	s than 1/4 inch bubble)?	Yes	
#21 <2 for all samples preserved with HNO3,	HCL, H2SO4?	Yes	
#22 >10 for all samples preserved with NaAs	O2+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									· .				11	Pr	ojeci	Nan	ne: E	KC	luee	n P	ear	ce				••••	
	Company Name	Basin Environmental Ser	vice T	echno	logies, LLC							- -					Pr	oject	#: 2	008-	113								
	Company Address:	P. O. Box 301						-	:						-		Proie	ct L	nc: L	ea C	ount	v. N	M						
	Citv/State/Zip:	Lovington, NM 88260										::						PO	#: P	ΔΑ	l He	nrv							
											2		1		:					7		<u></u> ,	-						
	Telephone No:	(575)396-2378	<u></u>			Fax No:		(57	5) 39	<u>96-14</u>	429			-	· ·	Repor	t Foi	mat	Ľ	⊻ St	anda	Ird		Ц	TRR	۲P ۱	<u>⊥</u> .	NPD)ES
	Sampler Signature:					e-mail:		bja	rguij	0@	oasi	inenv	.cor	n								1							
ab use i	only)	7/0															-			TCLF	A ?:	naly:]	ze Fo	or:	П			\neg	s
ORDEF	x#: 4508	q_{λ}						1	Pre	serv	atio	n & #	of Co	ntain	ers	Matrix				IATOTA				X					8, 721
LAB # (lab use only)	FIEL	DCODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO3	HCI	H ₂ SO ₄	NaOH	None	Other (Specify)	DW = Drinking Water SL = Sludg CW = Groundwater S = Soli/Soli NP = Non-Potable Specify Othe	TPH: 418.1 8015M 8015	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	Chloride 300			RUSH TAT (Pre-Schedule) 24, 4
		/W-1			10/12/2012	12:10		3			x	1				GW								X			T		
	N N	/W-2			10/12/2012	13:00		3			X		1			GW								X					
	<u>199</u> 7 - En 19	1W-3			10/12/2012	13:35		3			X					GW								x					
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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

> 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 - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America





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





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 limitsBenzoic 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, 2methylphenol, 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Ben Arguijo

Certificate of Analysis Summary 454473

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed Dec-19-12 02:00 pm

Report Date: 27-DEC-12

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id:	454473-0	01			
	Field Id:	MW-4				
	Depth:					
	Matrix:	WATER				
	Sampled:	Dec-18-12 13:00				
Alkalinity by SM2320B	Extracted:					
SUB: TX104704215	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	Extracted:	Dec-20-12 1	2:37			
SUB: TX104704215	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	Extracted:	Dec-22-12 0	07:00			
SUB: TX104704215	Analyzed:	Dec-22-12 1	1:22			
	Units/RL:	mg/L	RL			
Mercury		ND ().000200			

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Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Ch-Nul

Nicholas Straccione Project Manager


Certificate of Analysis Summary 454473

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed Dec-19-12 02:00 pm

Report Date: 27-DEC-12

Project Manager: Nicholas Straccione

	Lab Id:	454473-001			
Amalusia Doguostad	Field Id:	MW-4			
Analysis Kequesiea	Depth:				
	Matrix:	WATER			
	Sampled:	Dec-18-12 13:00			
Metals by EPA 200.8	Extracted:	Dec-22-12 10:00			
SUB: TX104704215	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	Extracted:	Dec-21-12 13:20			
SUB: TX104704215	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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Nicholas Straccione Project Manager



PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed Dec-19-12 02:00 pm

Report Date: 27-DEC-12

Project Manager: Nicholas Straccione

	Lab Id:	454473-001			
	Field Id:	MW-4			
Analysis Kequested	Depth:				
	Matrix:	WATER			
	Sampled:	Dec-18-12 13:00			
SVOAg by EDA 9270C		D 01 10 10 00			
SVOAS DY EFA 8270C SUB: TX10/70/215	Extracted:	Dec-21-12 10:09			
50D. 1A104/04215	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



Certificate of Analysis Summary 454473

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed Dec-19-12 02:00 pm Report Date: 27-DEC-12

Project Manager: Nicholas Straccione

	Lab Id:	454473-001			
Analysis Poguestad	Field Id:	MW-4			
Analysis Kequesiea	Depth:				
	Matrix:	WATER			
	Sampled:	Dec-18-12 13:00			
SVOAs by EPA 8270C	Extracted:	Dec-21-12 10:09			
SUB: TX104704215	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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Nicholas Straccione Project Manager



Certificate of Analysis Summary 454473

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed Dec-19-12 02:00 pm

Report Date: 27-DEC-12

Project Manager: Nicholas Straccione

	Lab Id:	454473-001			
Analysis Paguested	Field Id:	MW-4			
Analysis Kequestea	Depth:				
	Matrix:	WATER			
	Sampled:	Dec-18-12 13:00			
SVOAs by EPA 8270C	Extracted:	Dec-21-12 10:09			
SUB: TX104704215	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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Ch. Nul

Nicholas Straccione Project Manager



PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed Dec-19-12 02:00 pm Report Date: 27-DEC-12

Project Manager: Nicholas Straccione

	Lab Id:	454473-001			
Analysis Paguastad	Field Id:	MW-4			
Analysis Requested					
	Matrix:	WATER			
	Sampled:	Dec-18-12 13:00			
VOAs by SW-846 8260B	Extracted:	Dec-26-12 14:00			
SUB: TX104704215	Analyzed:	Dec-26-12 14:19			
	Units/RL:	mg/L RL			
Benzene		ND 0.0050	0		
Bromobenzene		ND 0.0050	0		
Bromochloromethane		ND 0.0050	0		
Bromodichloromethane		ND 0.0050	0		
Bromoform		ND 0.0050	0		
Methyl bromide		ND 0.0050	0		
n-Butylbenzene		ND 0.0050	0		
Sec-Butylbenzene		ND 0.0050	0		
tert-Butylbenzene		ND 0.0050	0		
Carbon Tetrachloride		ND 0.0050	0		
Chlorobenzene		ND 0.0050	0		
Chloroethane		ND 0.010)		
Chloroform		ND 0.0050	0		
Methyl Chloride		ND 0.010)		
2-Chlorotoluene		ND 0.0050	0		
4-Chlorotoluene		ND 0.0050	0		
p-Cymene (p-Isopropyltoluene)		ND 0.0050	0		
Dibromochloromethane		ND 0.0050	0		
1,2-Dibromo-3-Chloropropane		ND 0.0050	0		
1,2-Dibromoethane		ND 0.0050	0		
Methylene bromide		ND 0.0050	0		
1,2-Dichlorobenzene		ND 0.0050	0		
1,3-Dichlorobenzene		ND 0.0050	0		
1,4-Dichlorobenzene		ND 0.0050	0		
Dichlorodifluoromethane		ND 0.0050	0		

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Nicholas Straccione Project Manager



PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed Dec-19-12 02:00 pm Report Date: 27-DEC-12

Project Manager: Nicholas Straccione

	Lab Id:	454473-001			
Analysis Paguastad	Field Id:	MW-4			
Analysis Kequeslea	Depth:				
	Matrix:	WATER			
	Sampled:	Dec-18-12 13:00			
VOAs by SW-846 8260B	Extracted:	Dec-26-12 14:00			
SUB: TX104704215	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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Nicholas Straccione Project Manager



Certificate of Analysis Summary 454473

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Wed Dec-19-12 02:00 pm

Report Date: 27-DEC-12

Project Manager: Nicholas Straccione

	Lab Id:	454473-001			
Analysis Paguested	Field Id:	MW-4			
Analysis Requested	Depth:				
	Matrix:	WATER			
	Sampled:	Dec-18-12 13:00			
VOAs by SW-846 8260B	Extracted:	Dec-26-12 14:00			
SUB: TX104704215	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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Ch Nul

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 Det	tection 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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Final 1.000



Project Name: EK Queen Pearce

Work Orders : 454473	, 454473	Project ID: 2008-113						
Lab Batch #: 903558	Sample: 454473-001 / SMP	Batc	h: ¹ Matrix:	Water				
Units: mg/L	Date Analyzed: 12/21/12 17:52	SU	RROGATE RI	ECOVERY	STUDY			
SVOA	As 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	Batc	h: 1 Matrix:	Water				
Units: mg/L	Date Analyzed: 12/26/12 14:19	SU	RROGATE RI	ECOVERY	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 / B	LK Bate	h: ¹ Matrix:	Water				
Units: mg/L	Date Analyzed: 12/21/12 17:05	SU	RROGATE RI	ECOVERY	STUDY			
SVOA	As 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



Project Name: EK Queen Pearce

Vork Orders : 454473	3, 454473		Project II	D: 2008-113		
Lab Batch #: 903670	Sample: 631735-1-BLK / E	BLK Bate	h: 1 Matrix	Water		
Units: mg/L	Date Analyzed: 12/26/12 13:54	SU	RROGATE RI	ECOVERY	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 / B	KS Bate	h: 1 Matrix	Water		
Units: mg/L	Date Analyzed: 12/21/12 17:20	SU	RROGATE RI	ECOVERY	STUDY	
SVOA	As 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 / B	KS Bate	h: ¹ Matrix	Water		
Units: mg/L	Date Analyzed: 12/26/12 12:35	SU	RROGATE RI	ECOVERY	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



Project Name: EK Queen Pearce

Project ID: 2008-113					
SD Bate	RROGATE RE	ECOVERY	STUDY		
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
20.1	50.0	40	30-100		
14.2	50.0	28	15-94		
52.0	50.0	104	46-111		
30.6	50.0	61	44-117		
37.6	50.0	75	48-117		
49.0	50.0	98	46-126		
IS Batc	h: ¹ Matrix:	Solid			
SU	RROGATE RI	ECOVERY	STUDY		
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
29.1	50.0	58	30-100		
27.3	50.0	55	15-94		
33.3	50.0	67	46-111		
32.6	50.0	65	44-117		
40.8	50.0	82	48-117		
40.8	50.0	82	46-126		
IS Batc	h: ¹ Matrix:	Water			
SU	RROGATE RI	ECOVERY	STUDY		
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
0.0518	0.0500	104	75-131		
0.0493	0.0500	99	63-144		
0.0508	0.0500	102	80-117		
	0.0500	100			
	Batc SD Batc SU SU Amount Found [A] 20.1 14.2 52.0 30.6 37.6 49.0 Su IS Batc 20.1 49.0 Su Su Amount Found [A] 29.1 27.3 33.3 32.6 40.8 40.8 SU Su Su Amount Found [A] 0.0518 0.0493 0.0508	Batch: 1 Matrix: SURROGATE RI Amount True Found Image: Amount Image: Amount Image: Amount [A] Image: Amount Image: Amount Image: Amount Image: Amount 20.1 50.0 50.0 50.0 50.0 30.6 50.0 50.0 50.0 50.0 37.6 50.0 50.0 50.0 50.0 IS Batch: 1 Matrix: SURROGATE RI Found Image: Amount Image: Amount [A] Image: Image: Amount Image: Image: Amount Image: Image: Image: Amount [A] 29.1 50.0 50.0 50.0 29.1 50.0 27.3 50.0 33.3 50.0 33.3 50.0 32.6 50.0 32.6 50.0 IS Batch: 1 Matrix: SURROGATE RI [A] [B] Image: Amount Image: Amount Image: Amount Image: Amount Image: Amount	Batch: 1 Matrix: Water SURROGATE RECOVERY Recovery Amount True Recovery [A] Image: Constraint of the second of the s	Batch: 1 Matrix: Water SURROGATE RECOVERY STUDY Amount [A] True Amount [B] Recovery %R [D] Control Limits %R 20.1 50.0 40 30-100 14.2 50.0 28 15-94 52.0 50.0 104 46-111 30.6 50.0 61 44-117 37.6 50.0 75 48-117 49.0 50.0 98 46-126 IS Batch: 1 Matrix: Solid SURROGATE RECOVERY Control Limits Found True Amount Recovery (B] %R (D) 29.1 50.0 58 30-100 27.3 50.0 58 30-100 27.3 50.0 65 44-117 40.8 50.0 82 46-126 IS Batch: 1 Matrix: Water SURROGATE RECOVERY STUDY 40.8 50.0 82 46-126	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: EK Queen Pearce

Work Orders: 454473,	454473	Project ID: 2008-113										
Lab Batch #: 903670	Sample: 454473-001 SD / N	MSD Batch: 1 Matrix: Water										
Units: mg/L	Date Analyzed: 12/26/12 15:08	yzed: 12/26/12 15:08 SURROGATE RECOVERY STUDY										
VOAs t	oy 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





Work Order #: 454473	Project ID:						008-113
Lab Batch #: 903511 Date Analyzed: 12/22/2012	Sa Date Prep	mple: 631628- ared: 12/22/20	1-BKS 012	Matrix: Analyst:			
Reporting Units: mg/L	Ba	tch #: 1	BLANK /B	OVERY S	STUDY		
Mercury, Total by EPA 245.1		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags
Analytes				[C]	[D]		
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





Work Order #: 454473		Pr	2	008-113		
Lab Batch #: 903670	Sample: 631735-	-1-BKS	Matrix:	Water		
Date Analyzed: 12/26/2012	Date Prepared: 12/26/20	012	Analyst:	ZHO		
Reporting Units: mg/L	Batch #: 1	BLANK /	BLANK SPI	KE REC	OVERY	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
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	<u> </u>
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.





Work Order #: 454473		Pr	2008-113			
Lab Batch #: 903670	Sample: 631735-	1-BKS	Matrix:	Water		
Date Analyzed: 12/26/2012	Date Prepared: 12/26/20)12	Analyst:	ZHO		
Reporting Units: mg/L	Batch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY	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.





Work Order #: 454473, 454473	_	Project ID: 2008-113										
Analyst: JOL	Da	ate Prepar	ed: 12/20/201	2			Date A	nalyzed:]	2/20/2012			
Lab Batch ID: 903506 Sample: 631625-1-E	KS	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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes		[B]	[C]	נשן	[E]	Kesult [F]	[6]					
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		





Work Order #: 454473, 454473	Project ID: 2008-113 Date Prepared: 12/22/2012 Date Analyzed: 12/25/2012											
Analyst: MKO	Da	ate Prepar	ed: 12/22/201	2			Date Al	naryzeu:	.2/25/2012			
Lab Batch ID: 903654 Sample: 631631-1-B	I-I-BKS Batch #:] Matrix: water											
Units: mg/L	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Metals by EPA 200.8	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes		[B]	[C]	נטן	[E]	Kesuit [F]	[G]					
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		





Work Order #: 454473, 454473		Project ID: 2008-113									
Analyst: MKO	Da	ate Prepar	red: 12/21/201	2			Date A	nalyzed: 1	2/22/2012		
Lab Batch ID: 903536 Sample: 631622-1-E	BKS	Batch #: 1 Matrix: Water									
Units: mg/L		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
Metals per ICP by EPA 200.7 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
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	





Work Order #: 454473, 454473	Project ID: 2008-113										
Analyst: KAN	Da	ate Prepar	ed: 12/21/201	2			Date A	nalyzed:]	12/21/2012		
Lab Batch ID: 903558 Sample: 631543-1-E	BKS	Batcl	h #: 1					Matrix: \	Water		
Units: mg/L		BLAN	K /BLANK S	SPIKE / I	BLANK S	PIKE DUPI	LICATE	RECOVI	ERY STUD	θY	
SVOAs by EPA 8270C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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	





Work Order #:	454473, 454473
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Analyst: KAN Lab Batch ID: 903558

Sample: 631543-1-BKS

Date Prepared: 12/21/2012

Batch #: 1

Date Analyzed: 12/21/2012 Matrix: Water

Project ID: 2008-113

Units: mg/L

SVOAs by EPA 8270C	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Basult [E]	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[D]	[C]	נטן	[E]	Kesuit [F]	[6]				
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	





Analyst: KAN Lab Batch ID: 903558

Sample: 631543-1-BKS

Date Prepared: 12/21/2012

Batch #: 1

Project ID: 2008-113 Date Analyzed: 12/21/2012 Matrix: Water

Units: mg/L

SVOAs by EPA 8270C	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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	





Work Order #:	454473, 454473
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Analyst: KAN Lab Batch ID: 903558

Sample: 631543-1-BKS

Date Prepared: 12/21/2012 **Batch #:** 1 Project ID: 2008-113 Date Analyzed: 12/21/2012 Matrix: Water

Units: mg/L

SVOAs by EPA 8270C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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	



Form 3 - MS Recoveries





Work Order #: 454473										
Lab Batch #: 903506			Pro	oject ID:	2008-113					
Date Analyzed: 12/20/2012 Date	Prepared: 12/2	0/2012	Α	nalyst: J	DL					
QC- Sample ID: 454411-001 S	Batch #: 1 Matrix: Waste Water									
Reporting Units: mg/L	MATRIX / MATRIX SPIKE RECOVERY STUIParent Sample ResultSpike ResultSpiked Sample ResultControl Limits[A][B][C][D]%R									
Inorganic Anions by EPA 300 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	1		,			1				
Date Analyzed: 12/25/2012 Date	Prepared: 12/2	2/2012	А	analyst: M	IKO					
QC- Sample ID: 454373-001 S	Batch #: 1		I	Matrix: W	/ater					
Reporting Units: mg/L	MATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	ERY STUDY				
Metals by EPA 200.8	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
Metals by EPA 200.8 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
Metals by EPA 200.8 Analytes Arsenic	Parent Sample Result [A] 0.0581	Spike Added [B] 0.100	Spiked Sample Result [C] 0.147	% R [D] 89	Control Limits %R 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium	Parent Sample Result [A] 0.0581 0.109	Spike Added [B] 0.100 0.100	Spiked Sample Result [C] 0.147 0.212	% R [D] 89 103	Control Limits %R 70-130 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium Cadmium	Parent Sample Result [A] 0.0581 0.109 <0.00100	Spike Added [B] 0.100 0.100 0.100	Spiked Sample Result [C] 0.147 0.212 0.0965	%R [D] 89 103 97	Control Limits %R 70-130 70-130 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium Cadmium Chromium	Parent Sample Result [A] 0.0581 0.109 <0.00100	Spike Added [B] 0.100 0.100 0.100 0.100	Spiked Sample Result [C] 0.147 0.212 0.0965 0.0961	%R [D] 89 103 97 96	Control Limits %R 70-130 70-130 70-130 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium Cadmium Chromium Cobalt	Parent Sample Result [A] 0.0581 0.109 <0.00100	Spike Added [B] 0.100 0.100 0.100 0.100 0.100 0.100	Spiked Sample Result [C] 0.147 0.212 0.0965 0.0961 0.0918	%R [D] 89 103 97 96 92	Control Limits %R 70-130 70-130 70-130 70-130 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium Cadmium Chromium Cobalt Copper	Parent Sample Result [A] 0.0581 0.109 <0.00100	Spike Added [B] 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100	Spiked Sample Result [C] 0.147 0.212 0.0965 0.0961 0.0918 0.0968	%R [D] 89 103 97 96 92 87	Control Limits %R 70-130 70-130 70-130 70-130 70-130 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium Cadmium Chromium Cobalt Copper Iron	Parent Sample Result [A] 0.0581 0.109 <0.00100	Spike Added [B] 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100	Spiked Sample Result [C] 0.147 0.212 0.0965 0.0961 0.0918 0.0968 0.516	%R [D] 89 103 97 96 92 87 103	Control Limits %R 70-130 70-130 70-130 70-130 70-130 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium Cadmium Chromium Cobalt Copper Iron Lead	Parent Sample Result [A] 0.0581 0.109 <0.00100	Spike Added [B] 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100	Spiked Sample Result [C] 0.147 0.212 0.0965 0.0961 0.0918 0.0968 0.516 0.103	%R [D] 89 103 97 96 92 87 103 103	Control Limits %R 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium Cadmium Cadmium Chromium Cobalt Copper Iron Lead Manganese	Parent Sample Result [A] 0.0581 0.109 <0.00100	Spike Added [B] 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100	Spiked Sample Result [C] 0.147 0.212 0.0965 0.0961 0.0918 0.0968 0.516 0.103 0.0967	%R [D] 89 103 97 96 92 87 103 103 94 94	Control Limits %R 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium Cadmium Cadmium Chromium Cobalt Copper Iron Lead Manganese Molybdenum	Parent Sample Result [A] 0.0581 0.109 <0.00100	Spike Added [B] 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100	Spiked Sample Result [C] 0.147 0.212 0.0965 0.0961 0.0918 0.0968 0.516 0.103 0.0967 0.127	%R [D] 89 103 97 96 92 87 103 103 94 106	Control Limits %R 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium Cadmium Cadmium Chromium Cobalt Copper Iron Lead Manganese Molybdenum Nickel	Parent Sample Result [A] 0.0581 0.109 <0.00100	Spike Added [B] 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100	Spiked Sample Result [C] 0.147 0.212 0.0965 0.0961 0.0968 0.0968 0.516 0.103 0.0967 0.127 0.0894	%R [D] 89 103 97 96 92 87 103 103 94 106 89 89	Control Limits %R 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium Cadmium Cadmium Chromium Cobalt Copper Iron Lead Manganese Molybdenum Nickel Selenium	Parent Sample Result [A] 0.0581 0.109 <0.00100	Spike Added [B] 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100	Spiked Sample Result [C] 0.147 0.212 0.0965 0.0961 0.0968 0.0968 0.516 0.00967 0.127 0.0894 0.104	%R [D] 89 103 97 96 92 87 103 94 106 89 89 89	Control Limits %R 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Flag				
Metals by EPA 200.8 Analytes Arsenic Barium Cadmium Cadmium Chromium Cobalt Copper Iron Lead Manganese Molybdenum Nickel Selenium Silver	Parent Sample Result [A] 0.0581 0.109 <0.00100	Spike Added [B] 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100	Spiked Sample Result [C] 0.147 0.212 0.0965 0.0961 0.0918 0.0968 0.516 0.103 0.0967 0.127 0.0894 0.104	%R [D] 89 103 97 96 92 87 103 94 106 89 89 95	Control Limits %R 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Flag				

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



Form 3 - MS Recoveries

Date Prepared: 12/21/2012

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 SVOAs by SW-846 82

Project ID: 2008-113

Analyst: KAN

QC- Sample ID: 454456-001 S	Batch #: 1 Matrix: Solid MATRIX / MATRIX SPIKE RECOVERY STUDY													
Reporting Units: mg/L	MATE	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY								
SVOAs by SW-846 8270C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag								
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)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries





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Work Order #: 454473											
Lab Batch #: 903558			Pro	oject ID:	2008-113						
Date Analyzed: 12/21/2012	Date Prepared: 12/21	1/2012	Analyst: KAN								
QC- Sample ID: 454456-001 S	Batch #: 1		Matrix: Solid								
Reporting Units: mg/L	MATR	XIX / MA	TRIX SPIKE	RECO	VERY STU	DY					
SVOAs by SW-846 8270C Analytes		Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag					
Benzo(g.h.i)pervlene	<0.0250	0.250	0.203	81	47-129						
Benzo(k)fluoranthene	<0.0250	0.250	0.172	69	52-122	1					
Benzoic Acid	<0.150	0.750	0.494	66	4-113	<u> </u>					
Benzyl Butyl Phthalate	<0.0250	0.250	0.217	87	57-122	<u> </u>					
bis(2-chloroethoxy) methane	<0.0250	0.250	0.159	64	53-112	1					
bis(2-chloroethyl) ether	<0.0250	0.250	0.161	64	57-108	1					
bis(2-chloroisopropyl) ether	<0.0250	0.250	0.239	96	54-111	1					
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	<u> </u>					
Dimethyl Phthalate	<0.0250	0.250	0.184	74	59-113						
di-n-Butyl Phthalate	<0.0250	0.250	0.186	74	60-118	İ					
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



Project Name: EK Queen Pearce



Work Order #: 454473 Project ID: 2008-113 Lab Batch ID: 903511 Matrix: Water QC- Sample ID: 454566-001 S Batch #: 1 **Date Prepared:** 12/22/2012 Analyst: RKO Date Analyzed: 12/22/2012 **Reporting Units:** mg/L MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Duplicate Control Spiked Spiked Control Mercury, Total by EPA 245.1 Sample Spiked Sample Spike Result Sample Spike Dup. RPD Limits Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [**B**] [D] [E] [G] < 0.000200 0.00100 0.000888 89 0.00100 0.000880 88 1 70-130 20 Mercury Lab Batch ID: 903654 QC- Sample ID: 454669-002 S Batch #: 1 Matrix: Water Analyst: MKO Date Prepared: 12/22/2012 Date Analyzed: 12/25/2012 Reporting Units: mg/L MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Control Control Spiked Metals by EPA 200.8 Sample Spike Result Spiked Sample RPD Limits Sample Spike Dup. Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [**B**] [D] [E] [G] 0.577 58 Х Arsenic 0.519 0.100 0.100 0.602 83 4 70-130 20 113 124 Barium 0.0750 0.100 0.188 0.100 0.199 6 70-130 20 0.100 0.0851 85 0.100 85 0 70-130 20 < 0.00100 0.0850 Cadmium 92 7 70-130 0.00656 0.100 0.0986 0.100 0.106 99 20 Chromium Cobalt < 0.00500 0.100 0.0891 89 0.100 0.0950 95 6 70-130 20 7 Copper 0.0326 0.100 0.113 80 0.100 0.121 88 70-130 20 < 0.150 0.500 0.509 102 0.500 0.545 109 7 70-130 20 Iron < 0.00200 0.100 0.105 105 0.100 0.110 110 5 70-130 20 Lead < 0.00200 0.100 0.0939 94 0.100 0.102 102 8 70-130 20 Manganese 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 0.100 0.0878 75 0.0944 82 7 70-130 Selenium 0.0126 0.100 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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}[(C-F)/(C+F)]$ 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 #: 454473 Project ID: 2008-113 Lab Batch ID: 903536 QC- Sample ID: 454052-001 S Batch #: Matrix: Water 1 **Date Prepared:** 12/21/2012 Analyst: MKO **Date Analyzed:** 12/22/2012 **Reporting Units:** mg/L MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control Metals per ICP by EPA 200.7 Sample Result Spiked Sample Spike Sample Spike Dup. RPD Limits Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] Aluminum < 0.200 5.00 4.95 99 5.00 4.91 98 1 70-130 20 0.0689 1.00 1.08 101 1.00 1.07 100 70-130 20 Boron 1 Calcium 12.1 25.0 36.2 96 25.0 35.9 95 1 70-130 20 1.96 25.0 26.2 97 25.0 25.5 94 3 70-130 20 Magnesium 3.97 10.0 14.2 102 10.0 13.9 99 2 70-130 20 Potassium 8.27 25.0 32.8 98 25.0 32.8 98 0 70-130 20 Sodium

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}[(C-F)/(C+F)]$ 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 34 of 40



Project Name: EK Queen Pearce



Work Order #: 454473 Project ID: 2008-113 Lab Batch ID: 903670 Matrix: Water QC- Sample ID: 454473-001 S Batch #: 1 Date Prepared: 12/26/2012 Analyst: ZHO Date Analyzed: 12/26/2012 Reporting Units: mg/L MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Duplicate Control Spiked Spiked Control VOAs by SW-846 8260B Sample Spiked Sample Spike Result Sample Spike RPD Limits Limits Flag Dup. Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] < 0.00500 0.0500 0.0503 101 0.0500 0.0532 106 6 66-142 25 Benzene < 0.00500 0.0500 0.0473 95 0.0500 0.0501 100 75-125 Bromobenzene 6 25 < 0.00500 0.0500 0.0481 96 5 25 Bromochloromethane 0.0500 0.0506 101 60-140 Bromodichloromethane < 0.00500 0.0500 0.0507 101 0.0500 0.0552 110 8 75-125 25 0.0454 91 99 8 75-125 25 Bromoform < 0.00500 0.0500 0.0500 0.0493 0.0425 85 98 25 Methyl bromide < 0.00500 0.0500 0.0500 0.0492 15 60-140 0.0500 0.0555 111 115 4 75-125 25 n-Butylbenzene < 0.00500 0.0500 0.0575 0.0500 0.0541 0.0500 0.0557 75-125 25 Sec-Butylbenzene < 0.00500 108 111 3 tert-Butylbenzene < 0.00500 0.0500 0.0537 107 0.0500 0.0551 110 3 75-125 25 Carbon Tetrachloride 0.0500 0.0501 62-125 25 < 0.00500 100 0.0500 0.0553 111 10 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 3 Chloroform < 0.00500 0.0500 0.0512 102 0.0500 0.0526 105 70-130 25 Methvl Chloride < 0.0100 0.0500 0.0405 81 0.0500 0.0468 94 14 60-140 25 0.0524 2 73-125 25 2-Chlorotoluene < 0.00500 0.0500 105 0.0500 0.0535 107 4-Chlorotoluene 3 74-125 25 < 0.00500 0.0500 0.0515 103 0.0500 0.0533 107 0.0546 109 113 3 75-125 25 p-Cymene (p-Isopropyltoluene) < 0.00500 0.0500 0.0500 0.0565 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 101 3 59-125 25 0.0506 9 1,2-Dibromoethane < 0.00500 0.0500 0.0465 93 0.0500 0.0509 102 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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}[(C-F)/(C+F)]$ 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 #: 454473

Lab Batch ID: 903670

Date Analyzed: 12/26/2012

Reporting Units: mg/L

QC- Sample ID: 454473-001 S **Date Prepared:** 12/26/2012

Batch #: 1 Analyst: ZHO

: 1 Matrix: Water : ZHO

Project ID: 2008-113

VOAs by SW-846 8260B	Parent Sample Bosult	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	[B]	[C]	⁷⁰ K [D]	E]	Kesult [F]	[G]	70	70K	%KPD	
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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ 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 #: 454473

Lab Batch ID: 903670

Date Analyzed: 12/26/2012

Reporting Units: mg/L

QC- Sample ID: 454473-001 S **Date Prepared:** 12/26/2012

Batch #: Matrix: Water 1 Analyst: ZHO

Project ID: 2008-113

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





Work Order #: 454473

Lab Batch #: 903414				Project I	D: 2008-113	3				
Date Analyzed: 12/20/2012 14:44	Date Prepar	Dared: 12/20/2012 Analyst: ALA								
QC- Sample ID: 454473-001 D	Batch	#: 1 Matrix: Water								
Reporting Units: mg/L		SAMPLE / SAMPLE DUPLICATE RECOV								
Alkalinity by SM2320B		Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag				
Analyte			נםן							
Alkalinity, Total (as CaCO3)		172	172	0	20					
Alkalinity, Bicarbonate (as CaCO3)		172	172	0	20					
Alkalinity, Carbonate (as CaCO3)		<4.00	<4.00	0	20	U				
Lab Batch #: 903414										
Date Analyzed: 12/20/2012 16:03	Date Prepar	ed: 12/20/2012	2 Ana	lyst: ALA						
QC- Sample ID: 454484-004 D	Batch	n#: 1	Mat	rix: Water						
Reporting Units: mg/L		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY				
Alkalinity by SM2320B Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
Alkalinity, Bicarbonate (as CaCO3)		250	252	1	20					
Alkalinity, Carbonate (as CaCO3)		<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		•											•	Pro	ject N	lame	: <u>El</u>	(Qu	een	Pe	arce	•				
· · · · · · · · · · · · · · · · · · ·	Company Name	Basin Environmental Se	rvice T	echnol	ogies, LLC										•••••		Proj	ect f	t: <u>20</u>	08-11	3							
	Company Address:	P. O. Box 301							•			: . 				P	ojec	Loc	:: <u>Le</u>	a Co	unty,	NM		* 1 * *				
	City/State/Zip:	Lovington, NM 88260	· · ·									· 						PO #	: <u>PA</u>	A-J.	Henr	<u>у</u>	·		1	. :		•
	Telephone No:	(575)396-2378				Fax No:		(57	5) 396	-142	9 · · ·				Re	port	Form	at:	X	Star	ndard		: E		RP	и 🗌 и	PDES	
	Sampler Signature:	MunielDas	n	~		e-mail:		bjar	guijo	@ba	siner	v.cor	n			- 		-										
	oniy) #· 식둥니니	$\frac{\gamma}{13}$			1				Dr	son	ation &	# of Co	ntaina	FC	Mai	riv			T TC	CLP: TAL:	Ana		For:	<u> </u>		B B	8, 72 hrs	*
AB# (lab use only)	FIEI		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	-teld Filtered	Fotal #. of Containers	Ice		H ₂ SO4	NaOH NaOH	None	0 Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soli/Solid	NP≕Non-Potable Specify Other	TPH: 418.1 8015M 8015E	Cations (Ca. Mo. Na. K)	Aniona (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals Aś Ag Ba Cd Čr Pb Hg Se	Volaures	Semivolaules RTFX 80218/5030 or BTEX 8260	RCI	Chloride 300	<u>CM, Fe, Mn, Zn, A</u> Co, Mo, Ni	RUSH TAT (Pre-Schedule) 24, 4	Standard TAT 4 DAY
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Final 1.000



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&SAcceptable Temperature Range: 0 - 6 degCDate/ Time Received: 12/19/2012 02:00:00 PMAir and Metal samples Acceptable Range: AmbientWork Order #: 454473Temperature Measuring device used :

Comments
14
Yes
No
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

STANDART OF

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-13Date Received:02/04/2013

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: Lovington

Certificate of Analysis Summary 456943

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Mon Feb-04-13 11:50 am

Report Date: 07-FEB-13

Project Manager: Nicholas Straccione

	Lab Id:	456943-001			
Analysis Paguested	Field Id:	MW-4			
Analysis Requested	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.

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Nul Ctr

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
- **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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LOQ Limit of Quantitation

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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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Vork Orders: 456943	j,	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	SU!	RROGATE RF	COVERY	STUDY					
ВТЕХ	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	-	0.0277	0.0300	92	80-120					
4-Bromofluorobenzene		0.0290	0.0300	97	80-120					
Lab Batch #: 906400	Sample: 633456-1-BLK / B	LK Batcl	h: ¹ Matrix:	Water						
Units: mg/L	Date Analyzed: 02/06/13 10:38	SU!	RROGATE RF	COVERY S	STUDY					
BTEX	K 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	1				
4-Bromofluorobenzene		0.0252	0.0300	84	80-120					
Lab Batch #: 906400	Sample: 633456-1-BKS / B	KS Batc	h: 1 Matrix	Water	<u>.</u>					
Units: mg/L	Date Analyzed: 02/06/13 10:21	SU!	RROGATE RF	ECOVERY	STUDY					
BTEX	X 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					
Lab Batch #: 906400	Sample: 633456-1-BSD / B	BSD Batch: 1 Matrix: Water								
Units: mg/L	Date Analyzed: 02/06/13 10:04	SU	RROGATE RF	COVERY S	STUDY					
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene		0.0292	0.0300	97	80-120	1				
4-Bromofluorobenzene		0.0283	0.0300	94	80-120					
Lab Batch #: 906400	Sample: 456863-001 S / MS	S Batcl	h: 1 Matrix	Water	<u> </u>					
Units: mg/L	Date Analyzed: 02/06/13 11:11	SU!	RROGATE RF	COVERY ?	STUDY					
BTEX	K by EPA 8021B 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	i	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 / BAll 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 / M	MSD Batch: 1 Matrix: Water							
Units: mg/L	Date Analyzed: 02/06/13 11:28	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
	Analytes			[2]					
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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 456943	De	ate Prenar	ed• 02/06/201	3			Project ID: #2008-113 Date Analyzed: 02/06/2013					
Lab Batch ID: 906400 Sample: 633456-1-B	KS	Batcl	h #: 1	5	Matrix: Water							
Units: mg/L		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPL	ICATE 1	RECOVE	CRY STUD	Y		
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]					
Benzene	< 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 #: Matrix: Water 1 Date Prepared: 02/06/2013 Analyst: KEB Date Analyzed: 02/06/2013 **Reporting Units:** mg/L MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control BTEX by EPA 8021B Sample Result Spiked Sample Spike Sample Spike Dup. RPD Limits Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] < 0.00100 0.100 0.0886 89 0.100 0.102 102 14 70-125 25 Benzene 84 Toluene < 0.00200 0.100 0.0840 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 < 0.00100 0.100 0.0818 82 0.100 0.102 102 22 71-133 25 o-Xylene

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}[(C-F)/(C+F)]$ 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 10 of 12

CHAI Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (28 Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392- territoramental Aberka kodochemistry	N OF CUSTOI 1)240-4200 Odessa: 12600 Wo 7550	DY RECORD /est I-20 East Odessa, TX 79765 (432)563-1800	Page 1 of 1 LAB W.O # : 456943 Field billable Hrs :	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
Company: Basin Environmental Service Technologies, LLC	Phone: (575)396-2378	TAT Work Days = D Need results	by: Time:	PA Plastic Amber PC Plastic Clear PC Plastic Clear
Address: 3100 Plains Hwy.	Fax: (575)396-1429	Std (5-7D) 5Hrs 1D 2D 3D	40 50 7D 10D 14D Other	Size(s): 207, 407, 807, 1607, 3207, 1Gal
City: Lovington State: NM	Zip: 88260	ANIALME	NESTREQUESTED	** Preservative Type Codes
PM/Attn: Ben Arguijo Email:	⊐ bjarguijo@basinenv.com	Gome Trace VP		A. None E. HCl: 1 Tce
Project ID: EK Queen Pearce SR: #2008-113	PO#: PAA-J. Henry	Restlyce E,I		B. HNO₃ F. MeOH J. MCAA C. H₂SO₄ G. Na₂S₂O₃ K. ZnAc&NaOH D. NaOH H. NaHSO₄ L Asbc Acid&NaOH
nvoice To: Jason Henry Plains All American	Quote #:			o. Matrix Type Codes
Sampler Signature: MMMARA Semi-Annual Annual Semi-Annual Annual Circle One Event: Daily Semi-Annual Annual Circle One Event: Daily Semi-Annual Annual	Weekly Monthly Quartery N/A	TPH TPH BTEX Chloride		GW Ground Water S Sol/Sediment/Solid WWW-Wester Water W Wipe DW Drinking Water A Air SW Surface Water O Oil OW Ocean/Sea Water T Tissue PL Product-Liquid U Urine
Date Time		Lab Only:		PS Product-Solid B Blood SL Sludge
1 MW-4 2/1/13 J2 '//s	GW 3	x		
2				
3				
4				
5				
6				
<u>- 7</u>				
8				
9				
0				
Reg. Program //Clean-op Stol STATE for Gents : CTLs TRRP DW NPDES LPST DryCln FL TX GA NC SC NJ F Dther: AL NM Other:	A Regis C/A/CIC Love A OK LA 1 2 3 4 CLP NELAC DoD-ELAP	el & Certification EDDs P AFCEE QAPP ADaPT SEDD ERPIMS P Other: XLS Other:	GOC & Labels Gaolors Tamp. C Match Incomplete Absent Unclear 1 1 2 3 5 5	Leath-USE Only YES NO N/A Non-Conformances found?
1 Multuring Bash	Env 2.1.13	5.20 KBHth Shanne Briff	- MS 2/1/13 3/50+ 1 Xencu 2/4/13 11:50	Received on wer toe/
3 4				Proper containers used?

FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

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&SAcceptable Temperature Range: 0 - 6 degCDate/ Time Received: 02/04/2013 11:50:00 AMAir and Metal samples Acceptable Range: AmbientWork Order #: 456943Temperature 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)

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09-MAY-13

SUP ACCREDING

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



Total BTEX

Project Id: 2008-113 Contact: Ben Arguijo Project Location: Lea County, NM

Certificate of Analysis Summary 462519

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: E.K. Queen 6 Inch Pearce



Date Received in Lab: Fri May-03-13 02:30 pm

Report Date: 09-MAY-13

reject Location, Lea County, 1001								Project Ma	nager:	Kelsey Brooks	
	Lab Id:	462519-	462519-001		462519-002		462519-003		004		
An alunia Domenated	Field Id:	MW-	MW-1		2	MW-3		MW-4			
Analysis Kequestea	Depth:										
	Matrix:	WATE	WATER		WATER		WATER		R		
	Sampled:	May-03-13	May-03-13 09:00		10:00	May-03-13 11:00		May-03-13 12:00			
BTEX by EPA 8021B	Extracted:	May-08-13	May-08-13 08:00		08:00	May-08-13 08:00		May-08-13 08:00			
	Analyzed:	May-08-13	May-08-13 15:14		May-08-13 15:31 May-08-13 17:36		May-08-13 15:47				
	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		

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.

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Kms Boah

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
- **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

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

Certified and approved by numerous States and Agencies.

LOQ Limit of Quantitation

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 (770) 449-5477

 (602) 437-0330
 (210) 509-3335

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: E.K. Queen 6 Inch Pearce

Nork Orders: 462519	Ι,		Project II	J: 2008-113					
Lab Batch #: 913186	Sample: 462519-001 / SMP	Batch	h: 1 Matrix	:Water					
Units: mg/L	Date Analyzed: 05/08/13 15:14	SU	RROGATE RF	ECOVERY	STUDY				
BTEX	X 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	Batcl	h: 1 Matrix	Water	<u>.</u>				
Units: mg/L	Date Analyzed: 05/08/13 15:31	SU	RROGATE RF	ECOVERY !	STUDY				
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1.4-Difluorobenzene		0.0251	0.0300	84	80-120	i			
4-Bromofluorobenzene		0.0332	0.0300	111	80-120				
Lab Batch #: 913186	Sample: 462519-004 / SMP	Batcl	h: 1 Matrix	:Water	<u>.</u>				
Units: mg/L	Date Analyzed: 05/08/13 15:47	SU!	RROGATE RI	ECOVERY ?	STUDY				
BTEX	X 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	SU	RROGATE RF	ECOVERY S	STUDY				
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1 4-Difluorobenzene		0.0352	0.0300	117	80-120	1			
4-Bromofluorobenzene		0.0329	0.0300	110	80-120				
Lab Batch #: 913186	Sample: 637750-1-BLK / BL	.K Batcl	h: 1 Matrix	• Water	<u> </u>				
Units: mg/L	Date Analyzed: 05/08/13 09:50	SU	RROGATE RI	ECOVERY !	STUDY				
BTEX	K 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	i			
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 / BAll 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	l ,		Project II	D: 2008-113				
Lab Batch #: 913186	Sample: 637750-1-BKS / B	KS Batel	h: ¹ Matrix:	Water				
Units: mg/L	Date Analyzed: 05/08/13 08:23	SU	RROGATE RI	ECOVERY	STUDY			
BTE	K by EPA 8021B Analvtes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	<u>_</u>	0.0264	0.0300	88	80-120			
4-Bromofluorobenzene		0.0269	0.0300	90	80-120			
Lab Batch #: 913186	Sample: 637750-1-BSD / B	SD Batcl	h: 1 Matrix:	Water				
Units: mg/L	Date Analyzed: 05/08/13 08:39	SU	RROGATE RI	OGATE RECOVERY STUDY				
BTE	K 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	Batcl	h: 1 Matrix:	Water				
Units: mg/L	Date Analyzed: 05/08/13 14:58	SU	RROGATE RI	ECOVERY	STUDY			
BTE	K 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: E.K. Queen 6 Inch Pearce

Work Order #: 462519 Analyst: DYV	Da	Project ID: 2008-113 Date Prepared: 05/08/2013 Date Analyzed: 05/08/2013									
Lab Batch ID: 913186 Sample: 637750-1-B	KS	Batcl	n#: 1					Matrix: V	Vater		
Units: mg/L		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPL	ICATE	RECOVE	ERY STUD	Y	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[10]	[0]	[12]	[L ²]	Kesutt [1]	[0]				
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			Pr	niect ID∙	2008-113				
Date Analyzed: 05/08/2013 Date I	Prepared: 05/0	8/2013	Analyst: DYV						
QC- Sample ID: 462546-001 S	Batch #: 1 Matrix: Water								
Reporting Units: mg/L	MATE	RIX / MA	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			
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*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)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 | | | | | | | | _ | _

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Shed by: | Project Manager: Ben J. Arguijo Company Name Basin Environmental Ser Company Address: P.O. Box 301 City/State/Zip: Lovington, NM 88260 Telephone No: (575)396-2378 Sampler Signature: | Project Manager: Ben J. Arguijo Company Name Basin Environmental Service Te Company Address: P.O. Box 301 City/State/Zip: Lovington, NM 88260 Telephone No: (575)396-2378 Sampler Signature: | Project Manager: Ben J. Arguijo Company Name Basin Environmental Service Technolo Company Address: P.O. Box 301 City/State/Zip: Lovington, NM 88260 Telephone No: (575)396-2378 Sampler Signature: | Project Manager: Ben J. Arguijo Company Name Basin Environmental Service Technologies, LLC Company Address: P.O. Box 301 City/State/Zip: Lovington, NM 88260 Telephone No: (575)396-2378 Sampler Signature: | Project Manager: Ben J. Arguijo Company Name Basin Environmental Service Technologies, LLC Company Address: P.O. 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Henry Telephone No: (575)306-2378 Fax No: (575)306-1278 Report Format: Image: Signature: P0 #: PAA - J. Henry Company Signature: e-mail: project As: (575)306-1278 Report Format: Image: Signature: Image: Signature:<!--</td--><td>Project Manager: Ben J. Arguijo Project Manager: E.K. Queen 6 inch Pear Company Name Basin Environmental Service Technologies, LLC Project 4 :::::::::::::::::::::::::::::::::::</td><td>Project Managaer Bes. J. Arguijo Project Name: E.K. Queen 6 inch Pearce Company Name Basin Environmental Service Technologies, LLC Project 4:: 2008-113 Company Address: P.O. Box 301 Project 4:: 2008-113 City/State/ZIP: Lovington, NM 8260 Pol 5: PAA - J. Henry Report Format: Image: Standard Image: Standard Image: Standard City/State/ZIP: Lovington, NM 8260 Pol 5: PAA - J. 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XENCO Laboratories



Comments

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 05/03/2013 02:30:00 PM **Temperature Measuring device used :** Work Order #: 462519

Sample Receipt Checklist	
#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: Mmg Moah Kelsey Brooks Checklist reviewed by: Mmg Moah Kelsey Brooks

Date: 05/06/2013

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



Project Id: Contact: Ben Arguijo Project Location: New Mexico

Certificate of Analysis Summary 468775

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Fri Aug-16-13 02:10 pm Report Date: 23-AUG-13

Project Manager: Kelsey Brooks

	Lab Id:	468775-001			
Analysis Paguastad	Field Id:	MW-4			
Analysis Kequesiea	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	1	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

Huns Boah

Kelsey Brooks Project Manager

Page 5 of 11



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.
- RPD exceeded lab control limits. F
- The target analyte was positively identified below the quantitation limit and above the detection limit. J
- 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.

LOD Limit of Detection

- ** Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection Limit SDL Sample Detection Limit
- LOQ Limit of Quantitation **POL** Practical Quantitation Limit MQL Method Quantitation Limit
- **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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6017 Financial Drive, Norcross, GA 30071
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Phone

(281) 240-4200

(214) 902 0300

Final 1.000

Fax

(281) 240-4280

(214) 351-9139



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Vork Orders: 468775	<i>5</i> , 468775		Project II	D:		
Lab Batch #: 921235	Sample: 468775-001 / SMP	Batch	: 1 Matrix	:Water		
Units: mg/L	Date Analyzed: 08/22/13 11:42	SUR	ROGATE RF	ECOVERY ?	STUDY	
BTEX	X 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		0.0264	0.0300	88	80-120	
Lab Batch #: 921235	Sample: 642911-1-BLK / BL	K Batch	: 1 Matrix	Water	<u> </u>	
Units: mg/L	Date Analyzed: 08/22/13 11:18	SUR	ROGATE RF	ECOVERY ?	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	Analytto	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene		0.0258	0.0300	86	80-120	
L ob Rotch #• 921235	Samule: 642911-1-BKS / BK	Ratch	- 1 Matrix	•Water	<u> </u>	
Units: mg/L	Date Analvzed: 08/22/13 10:30	SUR	ROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0341	0.0300	114	80-120	
4-Bromofluorobenzene		0.0275	0.0300	92	80-120	
Lab Batch #: 921235	Sample: 642911-1-BSD / BS	D Batch	: 1 Matrix	Water	<u>.</u>	
Units: mg/L	Date Analyzed: 08/22/13 10:46	SUR	ROGATE RF	ECOVERY ?	STUDY	
BTE	X by EPA 8021B	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		0.0268	0.0300	89	80-120	
Lab Batch #: 921235	Sample: 468775-001 S / MS	Batch	· 1 Matrix	Water	<u> </u>	
Units: mg/L	Date Analyzed: 08/22/13 15:34	SUR	ROGATE RI	ECOVERY !	STUDY	
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0349	0.0300	116	80-120	
4-Bromofluorobenzene		0.0271	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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 468775, 468775	Project ID:											
Analyst: KEB	Da	ate Prepar	ed: 08/22/201	3			Date A	nalyzed: (08/22/2013			
Lab Batch ID: 921235 Sample: 642911-1-B	KS	Batcl	n#: 1					Matrix: V	Vater			
Units: mg/L		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B	TEX by EPA 8021B Blank Spike Blank Sample Result [A] Blank Spike Result				Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]					
Benzene	< 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



Form 3 - MS Recoveries

Project Name: EK Queen Pearce



Work Order #: 468775								
Lab Batch #: 921235			Pr	oject ID:				
Date Analyzed: 08/22/2013 Date	Prepared: 08/22	2/2013	A	analyst: K	EB			
QC- Sample ID: 468775-001 S	Batch #: 1 Matrix: Water							
Reporting Units: mg/L	MATE	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	0.121	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*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

XE	Houston: 4143 Greent Hobbs: 4008 N Grimes	oriar Dr. Statford, s Hobbs, NM 882	CHAI IX 77477 (281 40 (575)392-7	N OF	Odess	JST sa: 126	600 We	DY RE	CO Odessa, T	RD 7x 79765 (432)563-1	800	LAB \ Field bi	Pag W.O # illable H	e <u>1</u> : rs:	of 1 44	87-	15	* Container Type VA Vial Amber ES Enc VC Vial Clear TS Ten VP Vial Pre-preserved AC Air GA Glass Amber TB Ter GC Glass Clear ZB Zip PA Plastic Amber PC PI	e Codes prore Sampler raCore Sampler Canister dlar Bag Lock Bag astic Clear
Company	Basin Environmental Service Te	echnologies, LL	с	Phone:	(575)	396-2	378	TAT W	ork Day	/s = D	Need r	esults b	y:			Tim	e:		Other	_
Address:	3100 Plains Hwy.		10-12	Fax:	(575)	396-1-	429	1	Std (5-	7D) 5H	rs 1D 2	2D 3D	4D <u>5D</u>	7D 100	0 14D	Other_			Size(s): 2oz, 4oz, 8oz, 16oz, 32oz, 40ml, 125 ml, 250 ml, 500 ml, 1L, 0	1Gal Dther
City:	Lovington		State: NM	Zip:	8826	0		-		1	AN	ALYSE	S RE	QUES	TED				** Preservative Typ	be Codes
PM/Attn:	Ben Arguijo		Email:	bjarguijo(@basin	env.co	m	Cont Type * VC		VP		12-0				1100			A. None E. HCL I. Ice B. HNO, F. MeOH J. MC	AA C.
Project ID	EK Queen Pearce SRS #2008-113			PO#:	PAA-	J. Henr	y	Pres Type** E, I		E.I						_	·		H ₂ SO ₄ G. Na ₂ S ₂ O ₃ K. ZnAc& D. NaOH H. NaHSO ₄ L Ast	NaOH bc Acid&NaOH
Invoice To	Jason Henry Plains All Am	erican		Quote #:				80						1				PAH niy ti	^ Matrix Type (Codes
Sampler S	Signature:	Circle One Semi-Annua	Event: Daily al Annual	Weekly N/A	Month	nly Q	uartely	kample es by 82	TPH	BTEX	hloride							old Sample) Run t TPH 0	GW Ground Water S Soil/ WW Waste Water W Wip DW Drinking Water A Air SW Surface Water O Oil	'Sediment/Solid e
mple #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Ey Volatil			0							H (CALL on Highes	OW Ocean/Sea Water T Tiss: PL Product-Liquid U Urini PS Product-Solid B Bloo SL Sludge Other	ue. e d
Sa			-					# Cont	Lab On	y:									REMARK	S
_1	MW-4	8/13/13	1500	GW		1	3			x										
_2																	-			
_3								1								-				
4			1			1		-	1.1.1	1	1			1			-		11	
5			3							3.5						-				
6										1111		· · · · ·								
7			2	- A,				10										100		
8			1							112								-		
9			1																	
			1					To Lo		1										
Re	eg. Program / Clean-up Std	STATE	for Certs &	Regs	Q	A/QC	Leve	I & Certific	ation	12	EDDs		COC 8	& Labels		Coolers	Temp °	с	Lab Use Only	YES NO N/A
CTLs TR Other:	RP DW NPDES LPST DryCln	FL TX GA AL NM Ot	NC SC NJ F	A OK LA	1 2 NELA	3 4 C Dol	4 CLP	AFCEE QA Other:	APP	ADaPT XLS Oth	SEDD	ERPIMS	Match Absent	Incomplete Unclear	1	2	3		Non-Conformances found? Samples intact upon arrival?	
	Relinquished by		Affilia	ition	100	Date		Tim	ne	R	eceived	by	Affili	iation	D	ate	Ti	me	Received on Wet Ice? Labeled with proper preservatives?	
1	- Alla	~	Basin	EAV.	8/	15/1	5	07	45	de	lo	x	8/15	113	0/15/1	3	074	5	Received within holding time? Custody seals intact?	288
2 (her for		Basiy	Env.	8/	15/1	3	134	15 (X6	Att	()	RIE	113	18/19	513	14	C	VOCs rec'd w/o headspace? Proper containers used?	
3	0 8				-				-	1200	DA	1	xee	nco	8.1	10	111		pH verified-acceptable, excl VOCs? Received on time to meet HTs?	222
4										ay.	Khu	nan	8-110	5/13	076	-12	14.	10		

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

Final 1.000



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S	Acceptable Temperature Rang	e: 0 - 6 degC
Date/ Time Received: 08/16/2013 02:10:00 PM	Air and Metal samples Accepta	able Range: Ambient
Work Order #: 468775	Temperature Measuring device	e used :
Sa	mple Receipt Checklist Co	omments
#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 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:
 Marghwah
 Date:
 08/19/2013

 Kelsey Brooks
 Date:
 08/19/2013

 Checklist reviewed by:
 Marghwah
 Date:
 08/19/2013

 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.

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. 474179 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.

Ams boah

 Kelsey Brooks

 Project Manager

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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


Project Id: SRS#2008-113 Contact: Ben Arguijo Project Location: New Mexico



PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Fri Nov-15-13 03:02 pm

Report Date: 22-NOV-13

					Project Manager:	Kelsey Brooks	
	Lab Id:	474179-001	474179-002	474179-003	474179-004		
An aluaia Dona anto I	Field Id:	MW-1	MW-2	MW-3	MW-4		
Analysis Requested	Depth:						
	Matrix:	WATER	WATER	WATER	WATER		
	Sampled:	Nov-15-13 13:15	Nov-15-13 12:00	Nov-15-13 12:20	Nov-15-13 12:40		
BTEX by EPA 8021	Extracted:	Nov-21-13 15:00	Nov-21-13 15:00	Nov-21-13 15:00	Nov-21-13 15:00		
	Analyzed:	Nov-21-13 18:38	Nov-21-13 18:53	Nov-21-13 19:09	Nov-21-13 19:30		
	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		
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		

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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Huns Boah

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 **POL** 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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6017 Financial Drive, Norcross, GA 30071
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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Oi Lab Batch	r ders : 4741′ #: 928301	79, Sample: 474179-001 / SMP	Batch	Project ID: : 1 Matrix:	SRS#2008-2 Water	113	
Units:	mg/L	Date Analyzed: 11/21/13 18:38	SUI	RROGATE R	ECOVERY S	STUDY	
	BTI	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0267	0.0300	89	80-120	
4-Bromoflu	orobenzene		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	SUI	RROGATE R	ECOVERY S	STUDY	
	BTH	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0253	0.0300	84	80-120	
4-Bromoflu	orobenzene		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	SUI	RROGATE R	ECOVERY S	STUDY	
	BTI	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1,4-Difluor	obenzene		0.0264	0.0300	88	80-120	
4-Bromoflu	orobenzene		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	SUI	RROGATE R	ECOVERY S	STUDY	
	BTI	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0249	0.0300	83	80-120	
4-Bromoflu	orobenzene		0.0264	0.0300	88	80-120	
Lab Batch	#: 928301	Sample: 647366-1-BLK / BI	LK Batch	: 1 Matrix:	Water		
Units:	mg/L	Date Analyzed: 11/21/13 18:06	SUI	RROGATE R	ECOVERY S	STUDY	
	BTI	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0261	0.0300	87	80-120	
4-Bromoflu	lorobenzene		0.0285	0.0300	05	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 Or	rders: 47417	79,		Project ID:	SRS#2008-1	113	
Lab Batch	#: 928301	Sample: 647366-1-BKS / B	KS Batcl	h: 1 Matrix:	Water		
Units:	mg/L	Date Analyzed: 11/21/13 16:47	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	CX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene	··· · · ·	0.0278	0.0300	93	80-120	
4-Bromoflu	orobenzene		0.0318	0.0300	106	80-120	
Lab Batch	#: 928301	Sample: 647366-1-BSD / B	SD Batcl	h: 1 Matrix:	Water		
Units:	mg/L	Date Analyzed: 11/21/13 17:03	SU	RROGATE RI	ECOVERY S	STUDY	
	BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0285	0.0300	95	80-120	
4-Bromoflu	orobenzene		0.0329	0.0300	110	80-120	
Lab Batch	#: 928301	Sample: 474260-017 S / MS	S Batcl	h: 1 Matrix:	Water	11	
Units:	mg/L	Date Analyzed: 11/21/13 17:19	SU	RROGATE RI	ECOVERY S	STUDY	
	BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluor	obenzene	Anaryus	0.0277	0.0300	02	80.120	
4-Bromoflu	orobenzene		0.0328	0.0300	109	80-120	
Lab Batch	#: 928301	Sample: 474260-017 SD / N	MSD Batcl	h: 1 Matrix:	Water	00 120	
Units:	mg/L	Date Analyzed: 11/21/13 17:35	SU	RROGATE RI	ECOVERY S	STUDY	
	BTE	CX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0274	0.0300	91	80-120	
4-Bromoflu	orobenzene		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							Proj	ect ID:	SRS#2008-	113	
Analyst: ARM	Date Prepared: 11/21/2013					Date Analyzed: 11/21/2013					
Lab Batch ID: 928301 Sample: 647366-1-E	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	0.0937	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	Ba	tch #:	1 Matrix	: Water				
Date Analyzed:	11/21/2013	Date Prepared:	11/21/2	013	Ar	alyst: A	ARM					
Reporting Units:	mg/L		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	BTEX by EPA 8021	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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 $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

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

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 474179

Temperature Measuring device used :

Sample Receipt Checklis	t	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: Candau James Candace James

Date: 11/18/2013

Checklist reviewed by: Mark Kelsey Brooks

Date: 11/18/2013

Im		Houston: 4143 Greenbrid Hobbs: 4008 N Grimes I	ar Dr. Stafford, Hobbs, NM 882	CHAI TX 77477 (28 240 (575)392-7	N OF	Odess	ISTO a: 12600 W	DY RE	Odessa,	RD *x 79765 (432)563-180	00	Pag LAB W.O #	ie <u>1</u> :	of 1	4170	7	* Container Type VA Vial Amber ES Enc VC Vial Clear TS Ter VP Vial Pre-preserved AC Air GA Glass Amber TB Tec GC Glass Clear ZB Zip PA Plastic Amber PC Pic	e Codes core Sampler raCore Sampler Canister dlar Bag b Lock Bag astic Clear
C	ompany	^{y:} Basin Environmental Service Tec	hnologies, LL	c	Phone:	(575)3	396-2378	TAT W	ork Dav	/s = D	Need re	sults b	y:		Tim	e:		PC Plastic Clear Other	
A	ddress:	3100 Plains Hwy.			Fax:	(575)3	396-1429		Std (5-	7D) 5H	rs 1D 20	D 3D 4	4D 5D 7D 10	D 14D	Other			Size(s): 2oz, 4oz, 8oz, 16oz, 32oz , 40ml, 125 ml, 250 ml, 500 ml, 1L, 0	1Gal Other
C	ity:	Lovington		State: NM	Zip:	88260)				ANA	LYSE	S REQUES	TED				** Preservative Typ	be Codes
P	M/Attn:	Ben Arguijo		Email:	bjarguijo(@basine	env.com	Cont Type * VC		VP								A. None E. HCL I. Ice	***
P	roject IE	D: EK Queen Pearce SRS #2008-113			PO#:	PAA-C	. Bryant	Pres Type** E, I		EL								H_2SO_4 G. $Na_2S_2O_3$ K. ZnAc8 D. NaOH H. NaHSO ₄ L Ast	&NaOH bc Acid&NaOH
In	voice T	o: Camille Bøyant Plains All Am	erican		Quote #			8		L ,1							PAH nty If	^{O.}	Codes
S	ampler	Signature:	Circle One Semi-Annua	Event: Daily al Annual	Weekly N/A	Month	ly Quartel	ample es by 826	ТРН	BTEX	hloride) Run TPH 0	GW Ground Water S Soil/ WW Waste Water W Wip DW Drinking Water A Air SW Surface Water O Oil	/Sediment/Solid e
	mple #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N) Total # of	Volatile			ō						(CALL	OW Ocean/Sea Water T Tiss PL Product-Liquid U Urin PS Product-Solid B Bloo SL Sludge Other	ne od
	Sa							# Cont	Lab On	y:								REMARK	S
	_1	MW-1	11/15/13	1315	GW		3			x									
	2	MW-2	11/15/13	1200	GW		3		_	x									
T	3	MW-3	11/15/13	1220	GW		3			x									
F	4	MW-4	11/15/13	1240	GW		3			X									
F	5			1010							12.00								
F	6													1					
F	7														1				
F	8														1				
-	_0							-	-						1				
-	_0						-			-									
-	U	Reg. Program / Clean-up Std	STATE	E for Certs a	& Reas	Q	A/QC Lev	el & Certifi	cation		EDDs		COC & Labels		Coolers	Temp °C	;	Lab Use Only	YES NO NA
0	TLs TI	RRP DW NEDES LPST DryCln	FL TX GA	NC SC NJ F	PA OK LA	1 <u>2</u>	3 4 CL	P AFCEE Q	APP		SEDD E	RPIMS	Match Incomplete Absent Unclear	17-5	(2	3		Non-Conformances found?	
		Relinquished by	1	Affilia	ation		Date	Tir	ne	R	eceived I	by	Affiliation		Date	Tim	ne	Received on Wet Ice?	
L	1	my lip-		ET	_	11/	15/12	1 2:	45	1	1/11	10	Basintin	11/	15/13	19	95	Received within holding time? Custody seals intact?	
L	2	· · ·				-				20	uhm	ller	M/S X-CACO	11-1	5-13	1500	VOCs rec'd w/o headspace? Proper containers used?		
H	3			-		-	-	-		<i>ile</i> ت	ann		Od KARCE	11-11	5-13	15:0	2	pH verified-acceptable, excl VOCs? Received on time to meet HTs?	
L	4		D	11.000.000	0.11		4 040 40		- 400 /	02 4000	C 1	Anata	240 500 2224	Dhar	. 600 4	27.0220	-	COC Serial #	

Final lemp 5 C

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: 11/15/2013 03:02:00 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 474179

Temperature Measuring device used :

Sample Receipt Checklis	st	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: Candau James Candace James

Date: 11/18/2013

Checklist reviewed by: Mmg Moah 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



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.

Ams boah

 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



Project Id: SRS# 2008-113 Contact: Ben Arguijo

Project Location: NM

Certificate of Analysis Summary 479073

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Mon Feb-10-14 03:50 pm

Report Date: 19-FEB-14

Project Manager: Kelsey Brooks

	Lab Id:	479073-001			
Analysis Paguastad	Field Id:	MW-4			
Analysis Kequestea	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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Huns Roah

Kelsey Brooks Project Manager

Page 5 of 12



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
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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 Or Lab Batch	rders : 47907 #: 934362	73, Sample: 479073-001 / SMP	Batch	Project ID: SRS# 2008-113 IP Batch: 1 Matrix: Water											
Units:	mg/L	Date Analyzed: 02/19/14 15:34	SUR	ROGATE R	ECOVERY S	STUDY									
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
		Analytes			[D]										
1,4-Difluor	obenzene		0.0285	0.0300	95	80-120									
4-Bromoflu	iorobenzene		0.0276	0.0300	92	80-120									
Lab Batch	#: 934362	Sample: 651272-1-BLK / BL	K Batch:	1 Matrix	: Water										
Units:	mg/L	Date Analyzed: 02/19/14 10:45	SUR	ROGATE R	ECOVERY S	STUDY									
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
1 4-Difluor	obenzene	Anarytes	0.0278	0.0300	03	80-120									
4-Bromoflu	orobenzene		0.0270	0.0300	90	80-120									
I ab Batch	#• 934362	Sample: 651272-1-BKS / BK	S Batch:	1 Matrix	• Water	80-120									
Lab Daten	mg/I	Deta Apolyzed: 02/10/14 00:56	SURROCATE DECOVEDV STUDV												
Units:	IIIg/L	Date Analyzed: 02/19/14 09.50	SUR	ROGATE R	ECOVERY	STUDY									
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
		Analytes													
1,4-Difluor	obenzene		0.0309	0.0300	103	80-120									
4-Bromoflu	iorobenzene		0.0305	0.0300	102	80-120									
Lab Batch	# : 934362	Sample: 651272-1-BSD / BS	D Batch:	1 Matrix	: Water										
Units:	mg/L	Date Analyzed: 02/19/14 10:12	SUR	ROGATE R	ECOVERY S	STUDY									
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
1,4-Difluor	obenzene		0.0311	0.0300	104	80-120									
4-Bromoflu	iorobenzene		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	SUF	ROGATE R	ECOVERY S	STUDY									
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
1,4-Difluor	obenzene		0.0310	0.0300	103	80-120									
4-Bromoflu	orobenzene		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 #: 93436	2 Sample: 479541-003 SD / M	MSD Bate	h: 1 Matrix:	Water								
Units: mg/L	Date Analyzed: 02/19/14 16:05	SURROGATE RECOVERY STUDY										
E	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							Pro	ject ID: S	SRS# 2008	-113	
Analyst: KEB	D	ate Prepar	ed: 02/19/201	4			Date A	nalyzed: (02/19/2014		
Lab Batch ID: 934362 Sample: 651272-1-B	SKS	Batcl	h #: 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	0.108	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 II	D: SRS#2	2008-113			
Lab Batch ID:	934362	QC- Sample ID:	479541	-003 S	Ba	tch #:	1 Matrix	x: Water				
Date Analyzed:	02/19/2014	Date Prepared:	02/19/2	014	An	alyst: H	KEB					
Reporting Units:	mg/L	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
]	BTEX by EPA 8021B	Parent Sample Bosult	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Kesult [F]	%R [G]	% 0	%K	%RPD	
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 $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = 200*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Page 10 of 12

NICO		CHAI	I OF	CI	IST	10	YRE	CO	RD	_								* Container Type Codes		
Houston: 4143 Greenbri Hobbs: 4008 N Grimes	iar Dr. Stafford, T Hobbs, NM 8824	X 77477 (281 40 (575)392-7)240-4200 550	Odes	sa: 126	600 We	st I-20 East C	Odessa, T	X 79765 (432)563-1	300	LAB ^V Field bi	Pag W.O # illable Hi	e <u>1</u> : rs :	ut <u>1</u>	907	13	VA Vial Amber ES Encore Sampler VC Vial Clear TS TerraCore Sampler VP Vial Pre-preserved AC Air Canister GA Glass Amber TB Tediar Bag GC Glass Clear ZB Zip Lock Bag PA Plastic Amber PC Plastic Clear		
Basin Environmental Service Teo	chnologies, LLC)	Phone:	(575)	396-23	378	TAT Wo	ork Day	s = D	Need r	esults by	<i>r</i> :			Tim	e:		PC Plastic Clear Other		
3100 Plains Hwy.			Fax:	(575)	396-14	429		Std (5-	7D) 5H	rs 1D 2	D 3D 4	1D 5D	7D 10D	14D	Other_		1	Size(s): 2oz, 4oz, 8oz, 16oz, 32oz , 1Gal 40ml, 125 ml, 250 ml, 500 ml, 1L, Other		
Lovington		State: NM	Zip:	8826	0	= $[$				AN	ALYSE	S RE	QUES	TED				** Preservative Type Codes		
Ben Arguijo	E	Email:	cjbryant@ bjarguijo	@paalp. @basin	com, env.coi	m	Cont Type * VC	VP							1			A. None E. HCL I. Ice		
EK Queen Pearce			PO#:	PAA-0	C. Brya	int	Pres Type** E, I	EL										H_2SO_4 G. $Na_2S_2O_3$ K. ZnAc&NaOH D. NaOH H. NaHSO ₄ L Asbc Acid&NaOH		
Camille Bryant Plains All An	nerican		Quote #	:			0	<u> </u>	-								AH y If	0		
Signature:	Circle One E Semi-Annual	Event: Daily Annual	Weekly N/A	Month	nly Qu	uartely	imple s by 826	IEX									d Sample Run P TPH Oni	Matrix Type Codes GW Ground Water Soll/Sediment/Solid WW wate Water WW Wipe DW Drinking Water A Air		
Sample ID	Collect Date	Collect Time	Matrix Code ^	Teld	ntegrity DK (Y/N)	otal # of ontainers	Exa Volatile:	8									Hold (CALL) on Highest 1	SW Surface Water O Oil OW Ocean/Sea Water T Tissue PL Product-Liquid U Urine PS Product-Solid B Blood SL Studge		
					-0	E O	# Cont	Lab On	y:								-	REMARKS		
MW-4	2-10-14	10:00	GW			3		х												
	1000					10				1000	·									
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a Program / Closed in Std	STATE	for Corts 8	Roce	0	AIOC		& Certific	ation		EDDe	L	COC 8	Labele		Coolers	Temp)'C	Labiles Only VES NO N/		
RP DW NPDES LPST DryCing	FL TX GA M	NC SC NJ P	A OK LA		3 4		AFCEE QA	PP	ADaPT	SEDD 1	ERPIMS	Match Absent		1	2	34	3.3	Non-Conformances found?		
Relinquished by		Affilia	tion		Date		Tim	е	R	eceived	by	Affil	iation	D	ate	T	ime	Samples intact upon arrival? Received on Wet Ice? Labeled with proper preservatives? Received within holding time? Custody seals intact? VOCs rec'd wio headspace?		
then of the floor		Et		10	-2-1	10-14	3:5	0	Perl	aRe	sent	M	5	2-10	5-14	3:	SO			
																		Proper containers used?pH verified-acceptable, excl VOCs?		
		1							BI	VA	2-	- X	erev	2-1	11-14	14	1:20	Received on time to meet HTs?		
	Houston: 4143 Greenbr Hobbs: 4008 N Grimes Basin Environmental Service Tec 3100 Plains Hwy. Lovington Ben Arguijo EK Queen Pearce SRS #2008-113 Camille Bryant Plains All An Signature: Sample ID MW-4 AWV-4	Houston: 4143 Greenbriar Dr. Stafford, T Hobbs: 4008 N Grimes Hobbs, NM 8824 Basin Environmental Service Technologies, LLC 3100 Plains Hwy. Lovington Ben Arguijo EK Queen Pearce SRS #2008-113 Camille Bryant Plains All American Signature: Camille Bryant Plains All American Signature: Collect Date MW-4 A AWV-4 A AL MW-4 A AL MM Oth Relinquished by A A A A A A A A A A A A A A A A A A A	CHAIN Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281 Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392-73 Basin Environmental Service Technologies, LLC 3100 Plains Hwy. Lovington Ben Arguijo Email: EK Queen Pearce SRS #2008-113 Camille Bryant Plains All American Signature: Circle One Event: Daily Semi-Annual Annual Sample ID Collect Collect Time NWV-4 Z-/D-//4 10:00 NWV-4 Collect Collect Time Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample I	CHAIN OF Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 hobbi: 4008 N Grimes Hobbs, NM 88240 (575)392-7550 Basin Environmental Service Technologies, LLC Phone: 3100 Plains Hwy. Fax: Lovington State: NM Zip: Ben Arguijo Email: gipraulio EK Queen Pearce PO#: SRS #2008-113 Circle One Event: Daily Weekly Sample ID Collect Collect Matrix Sample ID Collect Collect Matrix MWV-4 2-10-14 [0 : 0:0] GW MWV-4 2-10-14 [0 : 0:0] GW MWV-4 2-10-14 [1 0 : 0:0] GW MWV-4 2-10-14 [1 0 : 0:0] GW Grice Collect Matrix MWV-4 2-10-14 [1 0 : 0:0] GW Grice Collect Matrix Grice Tor Certs & Regs FL TX GA NC SC NJ PA OK LA	CHAIN OF CL Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odes Hobbs: 4008 N Grimes Hobbs, NM 88240 (579)392-7550 Odes Basin Environmental Service Technologies, LLC Phone: (575) 3100 Plains Hwy. Fax: (575) Lovington State: NM Zip: 8226 Ben Arguijo Email: cjbryan@paalp.bjarguijo@paasin Difference SR #2008-113 PO#: PAA- Strice Camille Bryant Plains All American Quote #: Signature: Circle One Event: Daily Weekly Month Sample ID Collect Collect MW-4 Z-ID-IH I/D MW-4 Z-ID-IH I/D MW-4 Z-ID-IH I/D Interview Interview Interview MW-4 Z-ID-IH I/D Interview Interview Interview Interview Interview Interview Interview Interview Interview Sample ID Collect Collect Interview Interview Interview MW-4 Z-ID-IH I/D	CHAIN OF CUST Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 126 Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 126 Basin Environmental Service Technologies, LLC Phone: (575)396-12 3100 Plains Hwy. Fax: (575)396-12 Lovington State: NM Zip: 88260 Ben Arguijo Email: cipryant@paalp.com. Lovington EK Queen Pearce SRS #2008-113 Cardille Bryant Plains All American Note: Sample ID Collect Collect Matrix pg gg gg	CHAIN OF CUSTOL Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odesa: 12600 We Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odesa: 12600 We Basin Environmental Service Technologies, LLC Phone: (575)396-2378 3100 Plains Hwy. Fax: (575)396-1429 Lovington State: NM Ben Arguijo Email: ciptryant@pasinenv.com EK Queen Pearce SRS #2008-113 Camille Bryant Plains All American Signature: Circle One Event: Daily Weekly Monthly Quartely Semi-Annual Annual NA Sample ID Collect Date MW-4 2-/b-/H [0:00] GW 3 Sample ID Collect Natix 1 1 MW-4 2-/b-/H [0:00] GW 3 MW-4 2-/b-/H [0:00] GW 3 MW-4 2-/b-/H [0:00] GW 1 MW-4 2-/b-/H	CHAIN OF CUSTODY REE Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-420 Odesas: 12600 West I-20 East Of Hobba: 4008 N Grimes Hobba, NM 88240 (676)392-7560 TAT Workston: For Version Basin Environmental Service Technologies, LLC Phone: (675)396-2378 TAT Workston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-420 Basin Environmental Service Technologies, LLC Phone: (675)396-2378 TAT Workston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-420 Basin Environmental Service Technologies, LLC Phone: (675)396-2378 TAT Workston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)292-7580 Lovington State: NM Zip: 88260 Cont Type * Basin Environmental Service Technologies, LLC Phone: (675)396-2378 TAT Workston: 4008 N 4008 Ben Anguigo Email: Colver: Paint Diagraphic.com Cont Type * Prest Type * State: NM Zip: Rest 2008 N 4008 Cont Paint Plane All American Quote #: Oog Quice With Paint Prest Type * Signature: Callect Collect Collect Matrix (Cole /n 09 M Hot Matrix (Cole /n 09 M Hot Matrix (Cole /n 09 M Hot Matrix (Cole /n 09 M Hot Matrix (Cole /n 09 M Hot Matrix (Cole /n 09 M Hot Matrix (Cole /n 09 M Hot Matrix (Cole /n 09 M Hot Matrix (Cole /n 09 M Hot Matr	CHAIN OF CUSTODY RECOIN Notice: 1413 Greenbriar Dr. Stafford, TX 77477 (281)240-420 Odesa: 12600 West I-20 East Odesas, T Notice: 4008 N Grimes Hobb, NM 88240 (675)392-7560 TAT Work Day Stafford, TX 77477 (281)240-420 Odesa: 12600 West I-20 East Odesas, T Basin Environmental Service Technologies, LLC Phone: (675)396-2378 TAT Work Day Stafford Stafford TAT Work Day Stafford Port: Port: Port: Port: PAA-C. 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TX7070 (20120-2012) Interview <</td><td></td><td></td><td>Page 1 of 1 Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Descri</td><td>Page_1_f_1 Page_1_f_1 <th colspan="2" page_1_<="" td=""><td>Page_1_of_1 Page_1_of_1 Page_1 Page_1 Page_1 <th< td=""></th<></td></th></td></t<>	CHAIN OF CUSTODY RECORD Provide Text of Greenbair Dr. Stafford, TX 7777 (281/240-4200 Odesse: 12000 West L20 East: Odesse, TX 7976 (423/953-1800 Market: 4143 Greenbair Dr. Stafford, TX 7777 (281/240-4200 Odesse: 12000 West L20 East: Odesse, TX 7976 (423/953-1800 TAT Work Days = D Need results by Std (5-7D) 5Hrs 1D 2D 3D 0 Annali NM Zip: Bas 200 ANNAL YSE Odesse: 12000 West L20 East: Odesse, TX 7976 (423/953-1800 TAT Work Days = D Need results by Std (5-7D) 5Hrs 1D 2D 3D 0 ANNAL YSE Ben Arguijo Enail: Opyrin@pred@pred@pred@pred@pred@pred@pred@pred	CHAIN OF CUSTODY RECORD Heater 21: 321 Greenberg ID: X1707 (20120-2012) Dense: 1200 Weet Je Eal Odesa. TX7070 (20120-2012) Interview <			Page 1 of 1 Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Description Page 1 of 1 Descri	Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 Page_1_f_1 <th colspan="2" page_1_<="" td=""><td>Page_1_of_1 Page_1_of_1 Page_1 Page_1 Page_1 <th< td=""></th<></td></th>	<td>Page_1_of_1 Page_1_of_1 Page_1 Page_1 Page_1 <th< td=""></th<></td>		Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1_of_1 Page_1 Page_1 Page_1 <th< td=""></th<>

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

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

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 479073

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 cor	ntainer/ cooler?	N/A			
#5 Custody Seals intact on sample bottle	es?	N/A			
#6 *Custody Seals Signed and dated?		N/A			
#7 *Chain of Custody present?		Yes			
#8 Sample instructions complete on Cha	in of Custody?	Yes			
#9 Any missing/extra samples?		No			
#10 Chain of Custody signed when relind	uished/ received?	Yes			
#11 Chain of Custody agrees with sample	e label(s)?	Yes			
#12 Container label(s) legible and intact?)	Yes			
#13 Sample matrix/ properties agree with	h 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 indicate	ed test(s)?	Yes			
#18 All samples received within hold time	9?	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 HN	IO3,HCL, H2SO4?	Yes			
#22 >10 for all samples preserved with N	laAsO2+NaOH, ZnAc+NaOH?	N/A			

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Date: 02/11/2014

Checklist completed by: Murry Moah Kelsey Brooks Checklist reviewed by: Murry Moah 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



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.

Ams boah

 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-14Date 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 Name: EK Queen Pearce



Date Received in Lab: Wed May-07-14 03:17 pm

Project Location: NM

Project Id: SRS# 2008-113

Contact: Ben Arguijo

Report Date: 14-MAY-14

								Project Ma	nager:	Kelsey Brooks	
	Lab Id:	484840-00	1	484840-	002	484840-003		484840-0	004		
An aluaia Domandod	Field Id:	MW-1	MW-1		2	MW-3		MW-4			
Analysis Kequesiea	Depth:										
	Matrix:	WATER		WATE	R	WATE	R	WATE	R		
	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	May-13-14 18:00		18:00	May-13-14 18:00		May-13-14 18:00			
	Analyzed:	May-13-14 21	May-13-14 21:44		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	0.00100	ND	0.00100	ND	0.00100	ND	0.00100		
Toluene		ND 0	0.00200	ND	0.00200	ND	0.00200	ND	0.00200		
Ethylbenzene		ND 0	0.00100	ND	0.00100	ND	0.00100	ND	0.00100		
m_p-Xylenes		ND 0	0.00200	ND	0.00200	ND	0.00200	ND	0.00200		
o-Xylene		ND 0	0.00100	ND	0.00100	ND	0.00100	ND	0.00100		
Total Xylenes		ND 0	0.00100	ND	0.00100	ND	0.00100	ND	0.00100		
Total BTEX		ND 0	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.

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Huns Roah

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 LimitSDL Sample Detection LimitLOD Limit of DetectionPQL Practical Quantitation LimitMQL Method Quantitation LimitLOQ 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

(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	

Phone

(281) 240-4200

Final 1.000

Fax

(281) 240-4280



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Or Lab Batch	rders : 48484 #: 940837	40, Sample: 484840-001 / SMP	Project ID: SRS# 2008-113Batch:1Matrix: Water									
Units:	mg/L	Date Analyzed: 05/13/14 21:44	SURROGATE RECOVERY STUDY									
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
		Analytes			[D]							
1,4-Difluor	obenzene		0.0266	0.0300	89	80-120						
4-Bromoflu	ıorobenzene		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	SUI	RROGATE R	ECOVERY	STUDY						
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1 4-Difluor	obenzene	Analytes	0.0265	0.0300	88	80-120						
4-Bromoflu	iorobenzene		0.0285	0.0300	95	80-120						
Lab Batch	#• 940837	Sample: 484840-003 / SMP	Batch	• 1 Matrix	• Water	00-120						
Units.	mg/L	Date Analyzed: $05/13/1422.17$										
Cints.	IIIg/L	Date Analyzeu: 05/15/14 22.17	SUKKUGATE KEUUVEKY STUDY									
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1 4-Difluor	obenzene		0.0263	0.0300	88	80-120						
4-Bromoflu	lorobenzene		0.0279	0.0300	03	80-120						
Lab Batch	#• 940837	Sample: 484840-004 / SMP	Batch	• 1 Matrix	• Water	00-120						
Unite.	mg/I	Date Analyzed: $05/13/14$ 22:33										
Omts.	ing/L	Date Analyzeu. 05/15/14 22.55	SURROGATE RECOVERY STUDY									
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1,4-Difluor	obenzene		0.0262	0.0300	87	80-120						
4-Bromoflu	ıorobenzene		0.0280	0.0300	93	80-120						
Lab Batch	#: 940837	Sample: 655390-1-BLK / BI	LK Batch	: 1 Matrix	Water	1						
Units:	mg/L	Date Analyzed: 05/13/14 20:05	SUI	RROGATE R	ECOVERY	STUDY						
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1,4-Difluor	obenzene		0.0261	0.0300	87	80-120						
4-Bromofly	lorobenzene		0.0275	0.0300	02	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 Or	rders : 4848	40,	Project ID: SRS# 2008-113									
Lab Batch	#: 940837	Sample: 655390-1-BKS / B	KS Batch: 1 Matrix: Water									
Units:	mg/L	Date Analyzed: 05/13/14 20:21	SU	JRROGATE RECOVERY STUDY								
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1 4-Difluor	ohenzene		0.0279	0.0300	03	80-120						
4-Bromoflu	orobenzene		0.0217	0.0300	106	80-120						
I ab Batch	#• 940837	Sample: 655390-1-BSD / B	SD Batch	0.0500 h• 1 Matrix•	Water	00-120						
Lau Datti	π.)40057	Data Analyzed 05/12/14 20:28	SD Date									
Units:	mg/L	Date Analyzed: 03/13/14 20:38	SU	RROGATE RI	ECOVERY S	STUDY						
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1,4-Difluoro	obenzene		0.0277	0.0300	92	80-120						
4-Bromoflu	orobenzene		0.0318	0.0300	106	80-120						
Lab Batch	#: 940837	Sample: 484840-001 S / MS	S Batch: 1 Matrix: Water									
Units:	mg/L	Date Analyzed: 05/13/14 20:54	SURROGATE RECOVERY STUDY									
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
		Analytes			[D]							
1,4-Difluoro	obenzene		0.0278	0.0300	93	80-120						
4-Bromoflu	orobenzene		0.0320	0.0300	107	80-120						
Lab Batch	#: 940837	Sample: 484840-001 SD / N	ISD Batch	h: 1 Matrix:	Water							
Units:	mg/L	mg/L Date Analyzed: 05/13/14 21:11 SURROGATE RECOVERY STUDY										
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1,4-Difluor	obenzene		0.0282	0.0300	94	80-120						
4-Bromoflu	orobenzene		0.0324	0.0300	108	80-120						
L				1	1	I						

* 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							Proj	ject ID:	SRS# 2008	-113			
Analyst: ARM	D	Date Prepared: 05/13/2014					Date Analyzed: 05/13/2014						
Lab Batch ID: 940837 Sample: 655	5390-1-BKS	Batc	h #: 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	0.0942	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





Project Name: EK Queen Pearce



Work Order # :	484840						Project II): SRS#2	2008-113			
Lab Batch ID:	940837	QC- Sample ID:	484840	001 S	Ba	tch #:	1 Matrix	: Water				
Date Analyzed:	05/13/2014	Date Prepared: 05/13/2014					ARM					
Reporting Units:	mg/L	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
]	BTEX by EPA 8021B	Parent Sample Bacult	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Kesult [F]	%R [G]	%	% K	%RPD	
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 $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

dress: 3100 Plair		mpany: Basin Environmental Service Technologies, LLC Phone: (575)396-2378					TAT W	Field billable Hrs : TAT Work Days = D Need results by:							ne:		PC Plastic Clear Other	u.	
	ns Hwy.			Fax:	(575)396	5-1429		Std 5	-7D) 5H	Irs 1D 2	D 3D	4D <u>5D</u>	7D 100	0 14D	Other		_	Size(s): 2oz, 4oz, 8oz, 16oz, 32oz , 1Gal 40ml, 125 ml, 250 ml, 500 ml, 1L, Other	_
y: Lovington		_	State: NM	Zip:	88260					AN/	ALYSI	ES RE	QUES	TED				** Preservative Type Co	des
1/Attn: Ben Argui	io		Email:	cjbryant@ bjarguijo@	paalp.com basinenv	n, .com	Cont Type * VC	VP		-			-		1			A. None E. HCL I. Ice	
oject ID: EK Queen SRS #200	Pearce 8-113			PO#:	PAA-C. B	ryant	Pres Type** E, I	EL										H ₂ SO ₄ G. Na ₂ S ₂ O ₃ K. ZnAc&NaOH D. NaOH H. NaHSO ₄ L Asbc Acid8	kNaOH
oice To: Camille Br	yant Plains All Am	erican		Quote #:			0	,ı								1	AH İy If	0	
mpler Signature:		Circle One Semi-Annua	Event: Daily I Annual	Weekly N/A	Monthly	Quartely	mple s by 826	LEX									Run F Run F	Matrix Type Codes GW Ground Water S Soil/Sedimer WW Waste Water W Wipe DW Drinking Water A Air	š it∕Solid
S	ample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered Integrity	OK (Y/N) Total # of containers	Exa Volatiles	8									Hold (CALL_) on Highest T	SW Surface Water O Oil OW Ocean/Sea Water T Tissue PL Product-Liquid U Urine PS Product-Solid B Blood SL Studge Offner	
5							# Cont	Lab Onl	y:									REMARKS	
1	MW-1	5/4/14	1030	GW		3		x								117			
2	MW-2	5/6/14	1330	GW		3		x											
3	MW-3	5/6/14	945	GW		3		x				-							
4	MW-4	5/6/14	1136	GW		3		x											
5															-				
6												1							
7																			
8			1	100	10										-				
9		1						[
0																			
Reg. Program	/ Clean-up Std	STATE	for Certs &	Regs	QA/Q	C Leve	l & Certific	ation		EDDs		COC &	Labels	(Coolers	Temp °	C	Lab Use Only YES N	O N/A
Ls TRRP DW NF er:	DES LPST DryCln	FL TX GA N AL NM Othe	IC SC NJ PA er:	OK LA	1 <u>2</u> 3 NELAC D	4 CLP oD-ELAP	AFCEE QA Other:	PP	ADaPT XLS Othe	SEDD E	RPIMS	Match Ir Absent	ncomplete Unclear	110.	F2T	$)_{3}^{\circ}$		Non-Conformances found?	
111	Relinquished by		Affiliat	ion	Da	te	Tim	е	V P	eceived t	by	Affilia	ation	Di	ate	Ti	me	Received on Wet Ice?	22
plato	× 1				5/6/	14	1536	5	1.1	1001	140	IVE	>	514	14	3	35	Received within holding time?	

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 C.O.(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



Work Order #: 484840

XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 05/07/2014 03:17:00 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Reco	eipt Checklist Comme	ents
#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?	Νο	
#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)?	Νο	
#20 VOC samples have zero headspace (less than 1/4 inch	h bubble)? Yes	
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes	
#22 >10 for all samples preserved with NaAsO2+NaOH, Zr	NAC+NaOH? No	

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Date: 05/08/2014

Checklist completed by: Mmg Hoah Kelsey Brooks Checklist reviewed by: Mmg Hoah 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



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.

Ams boah

 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-14Date Received:08/07/2014

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Id: Contact: Ben Arguijo Project Location: New Mexico

Certificate of Analysis Summary 491032

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Thu Aug-07-14 11:21 am Report Date: 13-AUG-14

Project Manager: Kelsey Brooks

	Lab Id:	491032-001			
Analysis Paguastad	Field Id:	MW-4			
Analysis Requested	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.

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Huns Roah

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 LimitSDL Sample Detection LimitLOD Limit of DetectionPQL Practical Quantitation LimitMQL Method Quantitation LimitLOQ 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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(210) 509-3335

(813) 620-2033

(432) 563-1713

(770) 449-5477



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Oi	rders: 49103	32,		Project ID	:		
Lab Batch	#: 947952	Sample: 491032-001 / SMP	Batch:	1 Matrix	: Water		
Units:	mg/L	Date Analyzed: 08/11/14 17:32	SUR	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[0]		
1,4-Difluor	obenzene		0.0275	0.0300	92	80-120	
4-Bromoflu	orobenzene		0.0296	0.0300	99	80-120	
Lab Batch	#: 947952	Sample: 659867-1-BLK / BL	K Batch:	1 Matrix	: Water		
Units:	mg/L	Date Analyzed: 08/11/14 11:17	SUR	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluor	obenzene	1 mary tes	0.0284	0.0300	95	80-120	
4-Bromoflu	orobenzene		0.0204	0.0300	101	80-120	
Lah Batch	#• 947952	Sample: 659867-1-BKS / BK	CS Batch	• 1 Matrix	• Water	00-120	
Units:	mg/L	Date Analyzed: 08/11/14 11:33		ROGATE R	FCOVERV	STUDV	
	BTE	X by EPA 8021B	Amount Found	True Amount	Recovery	Control Limits	Flags
		Analytes	[A]	[B]	%R [D]	%R	
1,4-Difluor	obenzene		0.0285	0.0300	95	80-120	
4-Bromoflu	orobenzene		0.0348	0.0300	116	80-120	
Lab Batch	#: 947952	Sample: 659867-1-BSD / BS	D Batch:	1 Matrix	: Water		
Units:	mg/L	Date Analyzed: 08/11/14 11:49	SUR	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0289	0.0300	96	80-120	
4-Bromoflu	orobenzene		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	SUR	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0268	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: 491032	· ,		Project ID:								
Lab Batch #: 947952	Sample: 490785-001 SD / M	MSD Batch	n: 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							Proj	ject ID:			
Analyst: ARM	Da	ate Prepar	red: 08/11/201	14		Date Analyzed: 08/11/2014					
Lab Batch ID: 947952 Sample: 659867-1-B	SKS	S 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	0.0941	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 II):				
Lab Batch ID:	947952 Q	C- Sample ID:	490785	-001 S	Ba	tch #:	1 Matrix	: Water				
Date Analyzed:	08/11/2014	Date Prepared:	08/11/2	014	An	alyst: A	ARM					
Reporting Units:	mg/L	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
I	BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	[B]		[D]	[E]		[G]				
Benzene		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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Page 10 of 12

	Houston: 4143 Greenbr Hobbs: 4008 N Grimes	iar Dr. Stafford, Hobbs, NM 882	CHAII TX 77477 (281 40 (575)392-7	N OF	Odes	JS1 sa: 126	101	DY RE	CO Ddessa, 7	RD TX 79765 (432)563-1	800	LAB Field b	Pag W.O # pillable H	ge_1_of :	103	32	* Container Type VA Vial Amber ES En VC Vial Clear TS Te VP Vial Pre-preserved AC Ai GA Glass Amber TB Te GC Glass Clear ZB Zi PA Plastic Amber PC F	e Codes toore Sampler traCore Sampler r Canister adlar Bag ip Lock Bag Plastic Clear
Compan	y: Basin Environmental Service Teo	chnologies, LL	с	Phone:	(575)	396-2	378	TAT W	ork Day	/s = D	Need r	esults b	y:			Time:		PC Plastic Clear Other	
Address:	3100 Plains Hwy.			Fax:	(575)	396-1	429		Std (5-	7D) 5H	rs 1D 2	2D 3D	4D 5D	7D 10	D 14D Oth	er		Size(s): 20z, 40z, 80z, 160z, 320z , 40ml, 125 ml, 250 ml, 500 ml, 1L,	, 1Gal Other
City:	Lovington		State: NM	Zip:	8826	0				,	AN	ALYSI	ES RE	QUES	TED			** Preservative Ty	pe Codes
PM/Attn:	Ben Arguijo		Email:	cjbryant(@paalp @basir	.com, nenv co	m	Cont Type *	VP	1			1					A. None E. HCL I. Ice	3
Project II	D: EK Queen Pearce SRS #2008-113			PO#:	PAA-	C. Brya	int	Pres Type** E, I	E.I									B. HNO ₃ F. MeOH J. MC H ₂ SO ₄ G. Na ₂ S ₂ O ₃ K. ZnAci D. NaOH H. NaHSO ₄ L As	CAA C &NaOH sbc Acid&NaOH
nvoice T	o: Camille Bryant Plains All An	nerican		Quote #	:			00	,.								PAH dy tř		0
Sampler	Signature: Daly Such	Circle One Semi-Annua	Event: Daily I Annual	Weekly N/A	Month	nly Qi	uartely	xample les by 826	3TEX								old Sample Run t TPH Or	GW Ground Water WW Waste Water DW Drinking Water SW Surface Water O Oil	VSediment/Solid
ample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Volatil									H((CALL on Highes	OW Ocean/Sea Water T Tiss PL Product-Liquid U Urir PS Product-Solid B Bloc SL Sludge Other	sue ne od
ŵ.								# Cont	Lab On	y:					, , , , , , , , , , , , , , , , , , , ,			REMARK	S
_1	MW-4	8.6.14	14:45	GW		1	3		х		100				2.1				
_2		1.0																	
3						10				8				1.0					
4						1.3	1					1.1							
5																			
6															1 - 1				
7					1.3														
8																			
9									1				1						
0		10100										0.00	1						
F	eg. Program / Clean-up Std	STATE	for Certs &	Regs	Q	A/QC	Leve	& Certific	ation		EDDs		COC 8	& Labels	Coole	rs Temp	°C	Lab Use Only	YES NO N/A
CTLs T Other:	RRP DW NPDES LPST DryCin	FL TX GA I AL NM Oth	NC SC NJ P. er:	A OK LA	1 2 NELA	3 4 C DoD	CLP	AFCEE QA Other:	PP	ADaPT XLS Oth	SEDD I	ERPIMS	Match Absent	Incomplete Unclear	12.82	1· 3		Non-Conformances found? Samples intact upon arrival?	
	Relinquished by	- 1	Affilia	tion	0	Date		Tim	e	R	eceived	by	Affil	iation	Date	1	Time	Received on Wet Ice?	
1	Maley upp		Basin &	nvirtu.	8	-6.	-14	4: d	4	Y.C	GI	10	MB	0 10 50	8/10/14	4	30	Received within holding time? Custody seals intact?	
2	1	_	-		-	-	_			M	Kr(2	X	chu	11118	4 1	121	VOCs rec'd w/o headspace? Proper containers used?	
3				_	-						-		-			-	_	pH verified-acceptable, excl VOCs? Received on time to meet HTs?	333
	harstariaa, Habba 575 202 751	EQ Dellas 21	4 902 0200	Houst		04 04	2 420	0 Odecco	122 5	62 1900	San A.	stonia	240 500	2024	Theorem CO2	427 022	0		

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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

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XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 08/07/2014 11:21:00 AM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 491032	Temperature Measuring device used :							
	Sample Receipt Checklist	Comments						
#1 *Temperature of cooler(s)?	1							
#2 *Shipping container in good condition?	Ye	es						
#3 *Samples received on ice?	Ye	es						

#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 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: Mrs. Hoah 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	А	Apr-07-10 15:00		368359-001



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen 6" Pearce



Project ID:2008-113Work 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





Project Id: 2008-113 Contact: Jason Henry Project Location: Lea Co, NM

Certificate of Analysis Summary 368359

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen 6" Pearce



Date Received in Lab: Wed Apr-07-10 05:30 pm

Report Date: 12-APR-10

Project Manager: Brent Barron, II

	Lab Id:	368359-0	001			
Analysis Paguested	Field Id:	SVE Disch	arge			
Analysis Kequestea	Depth:					
	Matrix:	AIR				
	Sampled:	Apr-07-10	15:00			
BTEX in Air by EPA 18M	Extracted:	Apr-09-10	15:23			
SUB: T104704215-TX	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 Extracted:		Apr-09-10	15:23			
SUB: T104704215-TX	Analyzed:	Apr-09-10	15:23			
	Units/RL:	ppmv	RL			
TPH-GRO		5150	1000			

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Brent Barron, II

Odessa Laboratory Manager

XENCO Laboratories



- 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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(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	Э,		Project II	D: 2008-113				
Lab Batch #: 801815	Sample: 560306-1-BKS / B	KS Batel	h: ¹ Matrix:	Air				
Units: ppmv	Date Analyzed: 04/09/10 10:26	SU	SURROGATE RECOVERY STUDY					
BTEX i	in Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
4-Bromofluorobenzene	Analytes	26.6	30.0	89	75-125			
Lak Batak # 201215	Samala, 560306 1 BLK / B		h. 1 Motriv	Air	75 125			
	Sample: 500500-1-BEK/1		RROGATE RE	ECOVERY S	STUDY			
	Date Analyzed: 04/09/10 11:50							
BTEX i	in Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			נטן				
4-Bromofluorobenzene		30.8	30.0	103	75-125			
Lab Batch #: 801815	Sample: 368246-002 D / M	D Batcl	h: 1 Matrix	Air				
Units: ppmv	Date Analyzed: 04/09/10 13:07	SU	RROGATE RI	ECOVERYS	STUDY			
BTEX i	in Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
4-Bromofluorobenzene		28.8	30.0	96	75-125			
Lab Batch #: 801815	Sample: 368359-001 / SMI	Batcl	h: 1 Matrix:	Air				
Units: ppmv	Date Analyzed: 04/09/10 15:23	SU	RROGATE RI	ECOVERY S	STUDY			
BTEX i	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 / B	KS Batcl	h: 1 Matrix:	Air				
Units: ppmv	Date Analyzed: 04/09/10 11:11	SU	RROGATE RI	ECOVERY	STUDY			
GRO is	n Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			נען				
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 / BAll 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 / B	LK Bate	h: ¹ Matrix:	Air			
Units: ppmv	Date Analyzed: 04/09/10 11:50	SU	RROGATE RI	ECOVERY	STUDY		
GRO in	n 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 / M	D Batc	h: 1 Matrix	Air			
Units: ppmv	Date Analyzed: 04/09/10 13:07	alyzed: 04/09/10 13:07 SURROGATE RECOVERY STUDY					
GRO in	n 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	Batc	h: 1 Matrix	Air			
Units: ppmv	Date Analyzed: 04/09/10 15:23	SURROGATE RECOVERY STUDY					
GRO ii	n 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen 6'' Pearce

Work Order #: 368359	Project ID:				2	008-113	
Lab Batch #: 801815	Sa	Sample: 560306-1-BKS		Matrix: Air			
Date Analyzed: 04/09/2010	Date Prej	pared: 04/09/20	010	Analyst:	CAA		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /B	BLANK SPI	KE REC	COVERY S	STUDY
BTEX in Air by EPA 18M		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags
Analytes				[C]	[D]		
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	Sa	ample: 560307-	1-BKS	Matrix:	Air		
Date Analyzed: 04/09/2010	Date Pre	pared: 04/09/20	010	Analyst:	CAA		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /B	BLANK SPI	KE REC	COVERY S	STUDY
GRO in Air by EPA 18M Analytes		Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
TPH-GRO		ND	500	457	91	71-130	

Blank Spike Recovery [D] = 100*[C]/[B]All results are based on MDL and validated for QC purposes.





Project Name: EK Queen 6" Pearce

Work Order #: 368359

Lab Batch #: 801815				Project I	D: 2008-113	3
Date Analyzed: 04/09/2010	Date Prepar	ed: 04/09/2010) Ana	lyst:CAA		
QC- Sample ID: 368246-002 D	Batch	n#: 1	Mat	t rix: Air		
Reporting Units: ppmv		SAMPLE /	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX in Air by EPA 18 Analyte	3M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 368246-002 D	Date Prepar Batch	ed:04/09/2010) Ana Mat	lyst: CAA t rix: Air		
Reporting Units: ppmv		SAMPLE /	/ SAMPLE	DUPLIC	ATE REC	OVERY
GRO in Air by EPA 18 Analyte	Μ	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

Xenco Laboratories

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

The Environmental Lab of Texas		12600 West I-20 Eas Odessa, Texas 7976	st Phone: 432-563-1800 55 Fax: 432-563-1713
Project Manager:	JAN GET		Project Name: EKQUEENG'' LEAR
Company Name BASINE	MIRDUMENT	AL	Project #: 2009-113
Company Address: 2800	LAIRS Hu		Project Loc: LEACO, NM
City/State/Zip:	~ NM		PO# PAH-S. HENRY
Telephone No: 575-441	-7244	Fax No:	Report Format: L'Standard TRRP NPDES
Sampler Signature:	1-	e-mail:	
(labuse only)	200		Analyze For:
ORDER #: 368359		Preservation & # of Con	tainers Matrix 🛱 🧝 🕫
			lie 24, 24, 24, 24, 24, 24, 24, 24, 24, 24,
	5 _		S=Solifs = Solifs = S
	npied Depth	Contain Be	a water dwater 1005 Ag Ba a, MG, SO4,., SO4,., SO4,., Ag Ba B/503 B/1 Ag Ba
	ding C ding C ate Sa	me Sc 1 d Filtere 2 SO ₄ 2 SO ₄	Provide the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second seco
FIELD CODE			
-001 SVE DISCHARGE			
			┼┼╏──┨┼┽┼┼┼┼┼┼┼┼┼┼┼
Special Instructions:	I,I		Laboratory Comments:
	Time		VOCs Free of Headspace? Y N
Relinquished/by	Ime Received by:		Custody seals on container(s) Y N Custody seals on container(s) Y N
Relinquished by Date	Time Received by:		Date Time Sample Hand Delivered Y N by Sampler/Client Rep. ? Y N by Courier? UPS DHL FedEx Lone Star
Relinquished by: Date	Time Received in ELOT	7/	Hold Time Temperature Upon Receipt: Ambient C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client:	Basin / Phins
Date/ Time:	4.7.10 17:30
Lab ID # :	368359
Initials:	BB/AL

Sample Receipt Checklist

				Client I	Initials
#1	Temperature of container/ cooler?	(Yes)	No	Amo. °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		<u> </u>
#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:	Subbrd	to X	enco-Houston.	
				· · · · · · · · · · · · · · · · · · ·
Corrective Action	on Taken:		,	
		<u>-</u>		
Check all that A	Apply:		See attached e-mail/ fax Client understands and would like to proceed wit Cooling process had begun shortly after sampling	h analysis g 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	А	May-18-10 14:30		373487-001



Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce 6''



Laboratories

Project ID:2008-113Work 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



Project Id: 2008-113 Contact: Jason Henry Project Location: Lea County, NM

Certificate of Analysis Summary 373487

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce 6"



Date Received in Lab: Wed May-19-10 08:25 am

Report Date: 24-MAY-10

Project Manager: Brent Barron, II

	Lab Id:	373487-0	001			
Anglusia Deguested	Field Id:	SVE Discha	arge-1			
Analysis Requested	Depth:					
	Matrix:	AIR				
	Sampled:	May-18-10	14:30			
BTEX in Air by EPA 18M	Extracted:	May-20-10	17:51			
SUB: T104704215-TX	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 Extracted:		May-20-10	17:51			
SUB: T104704215-TX	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.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Brent Barron, II

Odessa Laboratory Manager

XENCO Laboratories



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

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



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce 6"

Vork Orders : 373487	,		Project II	D: 2008-113							
Lab Batch #: 807626	Sample: 563872-1-BLK / B	LK Bate	h: ¹ Matrix:	Air							
Units: ppmv	Date Analyzed: 05/20/10 11:22	SU	RROGATE RI	ECOVERY	STUDY						
BTEX i	n 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 / B	KS Batc	h: 1 Matrix:	:Air	I						
Units: ppmv	Date Analyzed: 05/20/10 12:01	SU	RROGATE RI	ECOVERY	STUDY						
BTEX i	n Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
4-Bromofluorobenzene		31.4	30.0	105	75-125						
Lab Batch #: 807626	Sample: 373489-001 D / M	D Bate	h: 1 Matrix:	Air							
Units: ppmv	Date Analyzed: 05/20/10 15:55	SURROGATE RECOVERY STUDY									
BTEX i	n Air by EPA 18M	Amount Found	True Amount	Recovery	Control Limits	Flags					
	Analytes	[A]	[D]	[D]	70K						
4-Bromofluorobenzene		30.0	30.0	100	75-125						
Lab Batch #: 807626	Sample: 373487-001 / SMF	Batcl	h: 1 Matrix:	Air							
Units: ppmv	Date Analyzed: 05/20/10 17:51	SU	RROGATE RI	ECOVERY	STUDY						
BTEX i	n 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 / B	KS Batc	h: 1 Matrix:	Air							
Units: ppmv	Date Analyzed: 05/20/10 10:44	SU	RROGATE RI	ECOVERY	STUDY						
GRO in	n Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			נען							
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 / BAll 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 / B	LK Batch: 1 Matrix: Air											
Units: ppmv	Date Analyzed: 05/20/10 11:22	SU	SURROGATE RECOVERY STUDY										
GRO ir	Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
4-Bromofluorobenzene	Analytes	30.5	30.0	102	75-125								
Lab Batch #: 807625	Sample: 373489-001 D / M	D Batc	h: ¹ Matrix:	Air									
Units: ppmv	Date Analyzed: 05/20/10 15:55	SURROGATE RECOVERY STUDY											
GRO ir	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
4 Bromofluorohonzono	Analytes	20.0	20.0	[U]	75.105								
4-Bromonuorobenzene		30.0	30.0	100	75-125								
Lab Batch #: 807625	Sample: 373487-001 / SMP	Bate	h: 1 Matrix	Air									
Units: ppmv	Date Analyzed: 05/20/10 17:51	SURROGATE RECOVERY STUDY											
GRO ir	a 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce 6"

Work Order #: 373487 Project ID:									
Lab Batch #: 807626	Sample: 563872-1-BKS Matrix: Air								
Date Analyzed: 05/20/2010	Date Prej	pared: 05/20/20)10	Analyst:	JUJ				
Reporting Units: ppmv	Ba	atch #: 1	BLANK /E	BLANK SPI	KE REC	COVERY S	STUDY		
BTEX in Air by EPA 18M		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags		
Analytes				[C]	[D]				
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	Sa	mple: 563877-	1-BKS	Matrix:	Air				
Date Analyzed: 05/20/2010	Date Prej	pared: 05/20/20	010	Analyst:	JUJ				
Reporting Units: ppmv	Ba	atch #: 1	BLANK /F	BLANK SPI	KE REC	COVERY S	STUDY		
GRO in Air by EPA 18M		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags		
Analytes					נען				
TPH-GRO		ND	500	461	92	71-130			

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce 6"

Work Order #: 373487

Lab Batch #: 807626				Project I	D: 2008-113	3
Date Analyzed: 05/20/2010	Date Prepar	ed: 05/20/2010) Ana	lyst:JUJ		
QC- Sample ID: 373489-001 D	Batch	n#: 1	Mat	trix: Air		
Reporting Units: ppmv		SAMPLE /	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX in Air by EPA 18M Analyte	1	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 373489-001 D	Date Prepar Batch	ed:05/20/2010) Ana Mat	l yst: JUJ t rix: Air		
Reporting Units: ppmv		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
GRO in Air by EPA 18M Analyte	[Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

Environmental Lab of Texas

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CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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12600 West I-20 East Odessa, Texas 79765

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

	Project Manager:	Camille Bryant														-	Pr	ojec	t Nar	ne: <u> </u>	EK (Que	en l	Pea	rce	6"					
	Company Name	Basin Environmental Se	rvice T	echno	ologies, LLC													Pr	ojec	t#:_2	2008	3-11	3								
	Company Address:	pany Address: P. O. Box 301										F	^o roje	ect L	oc: <u>L</u>	.ea (Coun	ity, I	M												
	City/State/Zip:	Lovington, NM 88260																	PO	#: F	PAA	- J. I	lenr	γ γ					-		
	Telephone No:	(575)605-7210				Fax No:		(50	5) 3:	96-14	129					F	lepor	t Fo	mat:	2	× s	tand	ard			TR	RP		 7 nf	PDE!	3
	Sampler Signature:	at Sentisk	er.	DET	(ang	e-maii:		<u>cit</u>	orya	ant(@b	asi	า-co	onsi	ultin	Ig.c	om											-	.		
(iab use	only)	<u> </u>			T															-	TCL	/ P:	\naly	rze F	or:					Τ.	
ORDEF	<u>:#: 373</u>	487						8	Pre	eserv	atio	n&∮	of Co	ntain	iers	M	atrix				TOTA		F	†	X					4 Z 4	
LAB # (lab use only)	FIEL	D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	otal #. of Containers 'Teck	8	HNO ₃	ΗĞ	H ₂ SO ₄	Na ₂ S ₂ O ₃	None	Other (Specify)	W = Drinking Water SL = Sludg	W = Uroundwater >= 501/501	PH: 418.1 8015M 8015	PH: TX 1005 TX 1006	Sations (Ca, Mg, Na, K) Micros (C1 SOA Alboticity)	AR / ESP / CEC	letals: As Ag Ba Cd Cr Pb Hg Se	olatiles	iemivolatiles	ITEX 8021B/5030 or BTEX 8260	Q	.O.R.M.			USH TAT (Pre-Schedule) 24, 4	tandard TAT 4 DAY
01	SVE Dis	scharge - 1			5/18/10	1430	<u></u>	1			T			X		<u> </u>	j. Jr	X						<i>s</i>	X	2	<u> </u>	+	╉	Ĕ	× ×
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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client:	Plains / Basin	
Date/ Time:	05-19-10 C 0825	
Lab ID # :	373487	
Initials:	JMF	

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2.46.5

Sample Receipt Checklist

				(Client Initials	1
#1	Temperature of container/ cooler?	(Yes)	No	21.6 °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?	Tes	No			
#12	Samples in proper container/ bottle?	(Yes)	No	See Below		
#13	Samples properly preserved?	Tes	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	Xenco-H	busto
#20	VOC samples have zero headspace?	(Yes)	No	Not Applicable		

Variance Documentation

Contact:		Contacted by: Da	te/ Time:
Regarding:			
Corrective Action Taken	•		
Check all that Apply:		See attached e-mail/ fax Client understands and would like to proceed with analysi Cooling process had begun shortly after sampling event	is

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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	А	Jul-26-10 09:00		383010-001



Client Name: PLAINS ALL AMERICAN EH&S





Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 383010

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Mon Jul-26-10 11:50 am

Report Date: 27-JUL-10

Project Manager: Brent Barron, II

	Lab Id:	383010-0	01			
Analysis Paguastad	Field Id:	SVE Discha	rge-2			
Analysis Kequesieu	Depth:					
	Matrix:	AIR				
	Sampled:	Jul-26-100	9:00			
BTEX in Air by EPA 18M	Extracted:	Jul-27-10 1	4:03			
SUB: T104704215-TX	Analyzed:	Jul-27-10 1	4:03			
	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	Extracted:	Jul-27-10 1	4:03			
SUB: T104704215-TX	Analyzed:	Jul-27-10 1	4:03			
	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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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 Pearce

Work Orders : 383010),		Project II	D: 2008-113										
Lab Batch #: 816366	Sample: 569119-1-BLK / B	LK Batel	h: 1 Matrix: RROGATE RE	Air	STUDY									
BTEX i	n 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 / B	KS Batcl	h: 1 Matrix:	Air										
Units: ppmv	Date Analyzed: 07/27/10 11:50	SURROGATE RECOVERY STUDY												
BTEX i	n Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
	Analytes			[D]										
4-Bromofluorobenzene		32.8	30.0	109	75-125									
Lab Batch #: 816366	Sample: 382991-002 D / M	D Batel	h: 1 Matrix:	Air										
Units: ppmv	Date Analyzed: 07/27/10 12:48	SU	RROGATE RI	ECOVERY	STUDY									
BTEX i	n 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 / SMF	P Batch: 1 Matrix: Air												
Units: ppmv	Date Analyzed: 07/27/10 14:03	SU	RROGATE RI	ECOVERY	STUDY									
BTEX i	n 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 / B	KS Batcl	h: 1 Matrix:	Air										
Units: ppmv	Date Analyzed: 07/27/10 10:34	SU	RROGATE RI	ECOVERY	STUDY									
GRO in	n 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									
				1	1									

* 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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 383010	,		Project II	D: 2008-113									
Lab Batch #: 816369	Sample: 569123-1-BLK / B	LK Batcl	h: ¹ Matrix:	Air									
Units: ppmv	Date Analyzed: 07/27/10 11:12	SU	RROGATE RI	ECOVERY S	STUDY								
GRO in	1 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 / M	MD Batch: ¹ Matrix: Air											
Units: ppmv	Date Analyzed: 07/27/10 12:48	SURROGATE RECOVERY STUDY											
GRO in	n 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	Batel	h: 1 Matrix	Air									
Units: ppmv	Date Analyzed: 07/27/10 14:03	SU	RROGATE RI	ECOVERY S	STUDY								
GRO in	n 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 383010		Project ID:									
Lab Batch #: 816366	Sa	ample: 569119-	1-BKS	Matrix:	Air						
Date Analyzed: 07/27/2010	Date Prej	pared: 07/27/20	JUJ								
Reporting Units: ppmv	Ba	atch #: 1	BLANK /E	BLANK SPI	OVERY STUDY						
BTEX in Air by EPA 18M		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags				
Analytes				[C]	[D]						
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	Sa	ample: 569123-	1-BKS	Matrix:	Air						
Date Analyzed: 07/27/2010	Date Pre	pared: 07/27/20	010	Analyst:	t: JUJ						
Reporting Units: ppmv	Ba	atch #: 1	BLANK /F	BLANK SPI	KE REC	COVERY S	STUDY				
GRO in Air by EPA 18M		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R [D]	Control Limits %R	Flags				
TPH-GRO		ND	500	437	87	71-130					
			500		07	/1150					

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 #: 383010

Lab Batch #: 816366				Project I	D: 2008-113	3
Date Analyzed: 07/27/2010	Date Prepar	ed: 07/27/2010) Ana	lyst:JUJ		
QC- Sample ID: 382991-002 D	Batch	n#: 1	Mat	rix: Air		
Reporting Units: ppmv		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX in Air by EPA 1 Analyte	8M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 382991-002 D	Date Prepar Batch	ed: 07/27/2010) Ana Mat	lyst: JUJ r ix: Air		
Reporting Units: ppmv		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
GRO in Air by EPA 13 Analyte	8M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

Environmental	Lab of Texas
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CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

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	Project Manager:	Camille Bryant																Pr	ojeci	Nai	ne:_	EK	Que	en F	Pear	ce						
	Company Name	Basin Environme	ntal Cons	ulting	, LLC												-		Pr	ojec	t#:_	2008	113					_				
	Company Address:	P. O. Box 381																I	Proje	oct L	oc: [Lea	oun	ity, M	M							
	City/State/Zip:	Lovington, NM 88	260														-			PC)#:_	PAA	<u>Ј. Н</u>	enry	-							
	Telephone No:	(575)605-7210					Fax No:		(50	5) 39)6-1-	429					. F	lepor	t Fo	rmat	. [X s	tand	ard			TRF	٦P			PDES	3
	Sampler Signature:						e-mail:		<u>cib</u>	irya	ant(<u>@b</u>	asi	<u>n-cc</u>	onsi	ultir	ng.c	<u>om</u>	_					hool	70 F	or			,		—	1
(lab use	only)		T																E			TCI	P:						Т	Τ	Ĕ	
ORDEI	R#: 383	3010								Рге	serv	atior	n & #	of Co	ontair	iers	М	atrix	8		T		8	-	╉─	^ 8					40	L
AB # (lab use only)	FIE			Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	80	HNO ₃	HCI	H ₂ SO4	NaOH Na.S.O.	None	Other (Specify)	DW - Drinking Water SL - Sludg	GW - Groundwater S-Soli/Sol NP-Non-Potable Specify Othe	TPH: 418.1 8015M 801	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (CI, SO4, Alkalinity)	watals: As Ao Ba Cd Cr Pb Ho !	Volatiles	Semivolatikes	BTEX 8021B/5030 or BTEX 82	RCI	Chloride 300			RUSH TAT (Pre-Schedule) 24	Standard TAT 4 DAY
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

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

Phoenix, San Antonio, Tampa

Houston, Miami, Odessa, Philadelphia

Prelogin / Nonconformance Report - Sample Log-In

Client: Bas	sin Env.	/ Plains
Date/Time:	7.24.10	11:50
Lab ID # :	3030	010
Initials:	AL	

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		
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?	Tes	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	(NTA)	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?		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 N	o.	Cooler 5 No.	
Ibs Amb, °C Ibs °C Ibs	°C lbs	0	C Ibs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:
Regarding:		
Corrective Action Take	en:	
Check all that apply:	□ Cooling process has begun shortly after sa condition acceptable by NELAC 5.5.8	mpling event and out of temperature .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	А	Aug-30-10 09:00		387695-001



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 387695

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Mon Aug-30-10 01:00 pm

Report Date: 03-SEP-10

Project Manager: Brent Barron, II

	Lab Id:	387695-0	001			
Analysis Deguested	Field Id:	SVE Discha	arge-3			
Analysis Kequestea	Depth:					
	Matrix:	AIR				
	Sampled:	Aug-30-10	09:00			
BTEX in Air by EPA 18M	Extracted:	Sep-02-10	22:01			
SUB: T104704215-TX	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	Extracted:	Sep-02-10	22:01			
SUB: T104704215-TX	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.

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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(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 : 387695	5,		Project II	D: 2008-113										
Lab Batch #: 821604	Sample: 572439-1-BLK / B	LK Batch	LK Batch: 1 Matrix: Air											
Units: ppmv	Date Analyzed: 09/02/10 14:50	SUI	RROGATE RI	ECOVERY	STUDY									
BTEX i	n Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
4-Bromofluorobenzene	Analytes	25.0	30.0	83	75-125									
L. h. D. 4. h. #. 821604	S 572420 1 PKS / P		1 Matrice	0	15 125									
Lab Balch #: 021004	Date Analyzed: 09/02/10 16:00	S Batch	RROGATE RI	ECOVERY	STUDY									
BTEX i	n Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
	Analytes			[D]										
4-Bromofluorobenzene		26.3	30.0	88	75-125									
Lab Batch #: 821604														
Units: ppmv	Date Analyzed: 09/02/10 17:25	SUI	RROGATE RI	ECOVERY	STUDY									
BTEX i	n Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
	Analytes				55.105									
4-Bromofluorobenzene		26.7	30.0	89	75-125									
Lab Batch #: 821604	Sample: 387695-001 / SMP	' Batch	n: 1 Matrix:	:Air										
Units: ppmv	Date Analyzed: 09/02/10 22:01	50	KRUGATE KI	LUVERY	STUDY									
BTEX i	n 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 / B	KS Batch	n: 1 Matrix:	Air										
Units: ppmv	Date Analyzed: 09/02/10 14:03	SURROGATE RECOVERY STUDY												
GRO in	n Air by EPA 18M Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
4 Duran office with a more star	-													

* 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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 387695	,		Project II	D: 2008-113								
Lab Batch #: 821603	Sample: 572448-1-BLK / B	LK Batcl	h: ¹ Matrix	Air								
Units: ppmv	Date Analyzed: 09/02/10 14:50	SURROGATE RECOVERY STUDY										
GRO in	n 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 / MI	D Batcl	h: 1 Matrix	: Air								
Units: ppmv	Date Analyzed: 09/02/10 17:25	SURROGATE RECOVERY STUDY										
GRO in	n 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	P Batch: 1 Matrix: Air										
Units: ppmv	Date Analyzed: 09/02/10 22:01	SU	RROGATE RI	ECOVERY	STUDY							
GRO in	n 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 387695				2	008-113		
Lab Batch #: 821604	Sa	ample: 572439-	1-BKS	Air			
Date Analyzed: 09/02/2010	Date Prej	pared: 09/02/20)10	Analyst:	JUJ		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /E	COVERY S	STUDY		
BTEX in Air by EPA 18M		Blank Result	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags
Analytes		[¹ x]	[0]	[C]	[D]		
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	Sa	ample: 572448-					
Date Analyzed: 09/02/2010	Date Pre	pared: 09/02/20	010	Analyst:	JUJ		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /B	BLANK SPI	KE REC	COVERY S	STUDY
GRO in Air by EPA 18M Analytes		Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
TPH-GRO		ND	500	416	83	71-130	

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 387695

Lab Batch #: 821604				Project I	D: 2008-113	3
Date Analyzed: 09/02/2010	Date Prepar	ed: 09/02/2010) Ana	lyst:JUJ		
QC- Sample ID: 388116-001 D	Batch	1 #: 1	Mat	t rix: Air		
Reporting Units: ppmv		SAMPLE /	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX in Air by EPA 18M Analyte	М	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Benzene		946	1050	10	35	
Toluene		2350	2550	8	35	İ
Ethylbenzene		229	220	4	35	İ
m,p-Xylenes		980	1030	5	35	
o-Xylene		299	295	1	35	
Lab Batch #: 821603 Date Analyzed: 09/02/2010 QC- Sample ID: 388116-001 D	Date Prepar Batch	ed:09/02/2010) Ana Mat	l yst: JUJ t rix: Air		
Reporting Units: ppmv		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
GRO in Air by EPA 18M Analyte	1	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

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	Company Name	Basin Environmental C	onsulti	ng, LLC	<u> </u>													P	roje	ct #:	200	08-11	3								
	Company Address:	P. O. Box 381														_		Pro	ect	Loc:	Lea	a Coi	unty,	NM							
	City/State/Zip:	Lovington, NM 88260														-			P	O#:	PA	A-J.	Henr	~							
	Telephone No:	(575)605-7210				Fax No:		(5	05) :	396-	142	9				-	Reno	rt Fr		•••		Star	dard	<u> </u>]			— —		
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client:	PC	AA	
Date/Time:	8	30(10/1320	
Lab ID # :		387495	
Initials:	68		

Sample Receipt Checklist

1. Samples on ice?	Blue	Water		
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?	Tes	No		
5. Sample instructions complete on chain of custody?	(es)	No		
6. Any missing / extra samples?	Yes	No		
7. Chain of custody signed when relinquished / received?	res	No		
8. Chain of custody agrees with sample label(s)?	res	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	¥65	No		
11. Samples in proper container / bottle?	Ves	No	•**	
12. Samples properly preserved?	Les	No	N/A	
13. Sample container intact?	(es	No		
14. Sufficient sample amount for indicated test(s)?	Ves	No		
15. All samples received within sufficient hold time?	(Tes	No		
16. Subcontract of sample(s)?	Yes	No	N/A	Hon
17. VOC sample have zero head space?	Tes	No	N/A	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No.	· · · · · · · · · · · · · · · · · · ·	Cooler 5 No.	
Ibs Angh °C Ibs °C Ibs °C	lbs	°C	lbs	°C

Nonconformance Documentation

Contacted by: Contact:

Date/Time:_____

Regarding:

Corrective Action Taken:

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



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)



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	А	Sep-23-10 09:00		391029-001



Client Name: PLAINS ALL AMERICAN EH&S



Project Name: EK Queen Pearce



Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 391029

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Thu Sep-23-10 12:00 pm

Report Date: 28-SEP-10

Project Manager: Brent Barron, II

	Lab Id:	391029-0	001			
Analysis Paguastad	Field Id:	SVE Discha	arge-4			
Analysis Requested	Depth:					
	Matrix:	AIR				
	Sampled:	Sep-23-10	09:00			
BTEX in Air by EPA 18M	Extracted:	Sep-24-10	22:54			
SUB: T104704215-TX	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	Extracted:	Sep-24-10	22:54			
SUB: T104704215-TX	Analyzed:	Sep-24-10	22:54			
	Units/RL:	ppmv	RL			
TPH-GRO		910	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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(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 II	D: 2008-113							
Lab Batch #: 824854	Sample: 574410-1-BKS / B	SKS Batel	h: 1 Matrix	:Air							
Units: ppmv	Date Analyzed: 09/24/10 13:36	50	KRUGATE RI								
BTEX i	n Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
4-Bromofluorobenzene	Anarytes	31.1	30.0	104	75-125						
Lab Batch #: 824854	Sample: 574410-1-BLK / B	BLK Batel	h: 1 Matrix	Air							
Units: ppmv	Date Analyzed: 09/24/10 14:23	SU.	RROGATE RI	ECOVERY	STUDY						
BTEX i	n Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
4-Bromofluorobenzene		32.3	30.0	108	75-125						
Lab Batch #: 824854	Sample: 391075-002 D / M	D Batcl	h: 1 Matrix	Air							
Units: ppmv	Date Analyzed: 09/24/10 15:09	SU	RROGATE RI	ECOVERY	STUDY						
BTEX i	n Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
4-Bromofluorobenzene		31.1	30.0	104	75-125						
Lab Batch #: 824854	Sample: 391029-001 / SMF	Batch: ¹ Matrix: Air									
Units: ppmv	Date Analyzed: 09/24/10 22:54	SU.	RROGATE RI	ECOVERY	STUDY						
BTEX i	n 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 / B	SKS Batel	h: 1 Matrix	Air							
Units: ppmv	Date Analyzed: 09/24/10 13:13	SU	RROGATE RI	ECOVERY	STUDY						
GRO in	n Air by EPA 18M	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
4-Bromofluorobenzene	Analytes	22 6	20.0	100	75 125						
BIOINOI NOI OUCHZEIRE		32.0	50.0	109	/3-125						

* 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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 391029),		Project II	D: 2008-113								
Lab Batch #: 824855	Sample: 574413-1-BLK / B	LK Batcl	h: ¹ Matrix:	Air								
Units: ppmv	Date Analyzed: 09/24/10 14:23	SU	RROGATE RI	GATE RECOVERY STUDY								
GRO in	n 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 / M	4D Batch: ¹ Matrix: Air										
Units: ppmv	Date Analyzed: 09/24/10 15:09	SU	SURROGATE RECOVERY STUDY									
GRO in	n 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	Batcl	h: 1 Matrix	Air								
Units: ppmv	Date Analyzed: 09/24/10 22:54	SU	RROGATE RI	ECOVERY	STUDY							
GRO ii	n 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 391029			Pro	2008-113							
Lab Batch #: 824854	Sa	ample: 574410-	1-BKS	Matrix:	Air						
Date Analyzed: 09/24/2010	Date Prej	pared: 09/24/20)10	Analyst:	JUJ						
Reporting Units: ppmv	Ba	atch #: 1	COVERY S	OVERY STUDY							
BTEX in Air by EPA 18M		Blank Result	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags				
Analytes		[]	[12]	[C]	[D]						
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	Sa	mple: 574413-	ole: 574413-1-BKS Matrix: Air								
Date Analyzed: 09/24/2010	Date Pre	pared: 09/24/20	010	Analyst:	JUJ						
Reporting Units: ppmv	Ba	atch #: 1	BLANK /	BLANK SPI	KE REC	COVERY STUDY					
GRO in Air by EPA 18M Analytes		Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags				
TPH-GRO		ND	500	542	108	71-130					

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 391029

Lab Batch #: 824854				Project I	D: 2008-113	3
Date Analyzed: 09/24/2010	Date Prepare	:d: 09/24/2010) Ana	dyst:JUJ		
QC- Sample ID: 391075-002 D	Batch	#: 1	Ma	trix: Air		
Reporting Units: ppmv	Γ	SAMPLE /	SAMPLE	DUPLIC	ATE RECO	OVERY
BTEX in Air by EPA 18 Analyte	M	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 391075-002 D	Date Prepare Batch	: d: 09/24/2010 #: 1) Ana Ma	ı lyst: JUJ trix: Air		
Reporting Units: ppmv	[SAMPLE /	SAMPLE	DUPLIC	ATE RECO	OVERY
GRO in Air by EPA 18M Analyte	/[P	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

En	vironment	tal Lab of T	exa	as					12	600	We	CH st I-	1AI	N O	FC	us	тос	DY R	REC	OR	DA	ND	AN	Pho	YS/	S R 43	1EQ	UES 3-18	ST 100				
	Project Mananer	Camillo Bryant							0	005	54, 1	exa	5 /	970;	,				nine	- N.		- 53		ra	C D	434	C-30	5-17	13				
	Company Name	Basin Environmental C	onsultin	0.110	c	-		-		_	-		_			-			P	roie	ct #	200	08-1	13	in real	ear	C.a.	_	-		_	-	-
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	City/State/Zip:	Lovington, NM 88260																		P	0#	PA	A	He	nry.	-	_	-	_		-	-	
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LAB # (lab use only)	FIE	LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	ice	HNO,	1(C)	H_SO4	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW - Drinking Water St - Study	NP Non-Potable Specify Oth	TPH 418.1 8015M 801	TPH: TX 1005 TX 1006	Californs (Ca, Mg, Na, K)	Anions (C), SO4, Alkalmity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg	Volatites	Semivoliatiles	BTEX 80218/5030 or BTEX 82	RCI	Childrade 300			RUSH TAT (Pre-Schedule) 24,	Standard TAT & DAY
01	SVE D	ischarge-4	-		23-Sep-10	0900		1	1						x		Au	(×	Ĺ							x						×
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Special Relingue	Instructions: shed by STUCLIMA shed by	Date	174	ine D	Received by: Received by:	tas been oo	ndw	ele	d C	<u> c</u>	with	Ver	bak	6-01	ote	Dat	e e		Tim Tim	e	Lal Sa VO Lal Cu Sa	mple Cs F bels stody mple by S	tory Con ree on c y se y se Ha Sam	of H conta als c als c pler/0	nme lead: siner on co on co Oelive Clien	ents Intai spai (s) ontai polei ered at Re	: ce? iner(r(s) i	s)		3-8-200		ZAZZZZZ	0
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XENCO Laboratories Attanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 5/1/2010 Page 1 ol 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Brown	Env.	Planis
Date/Time: 7	.23.10	12:00
Lab ID # :	.3710	29
Initials:	Aź	

Sample Receipt Checklist

1. Samples on ice?	Bl	ue Water	No		
2. Shipping container in good condition?	Y	s No	None	-	
3. Custody seals intact on shipping container (cooler) and bottles?	Ye	No No	(NA)		
4. Chain of Custody present?	Ye	No No	1		
5. Sample instructions complete on chain of custody?	Ye	No No			
6. Any missing / extra samples?	Ye	s (No)			
7. Chain of custody signed when relinquished / received?	Ye	No No			
8. Chain of custody agrees with sample label(s)?	Ye	No No		-	
9. Container labels legible and intact?	Ye	No No			
10. Sample matrix / properties agree with chain of custody?	Ye	No No			
11. Samples in proper container / bottle?	Ye	No No			
12. Samples properly preserved?	Ye	No No	N/A		
13. Sample container intact?	(Ye	No No	Ť.		
14. Sufficient sample amount for indicated test(s)?	Ye	No No			
15. All samples received within sufficient hold time?	X	No No			
16. Subcontract of sample(s)?	Ye	No No	N/A		
17. VOC sample have zero head space?	Ye	Yes No NA			
15. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Coole	r 4 No.	Cooler 5 No.		
ibs Amb.°c ibs °c ibs	"C	Ibs	C Ibs	°c	

Nonconformance Documentation

Date/Time:

Contact:_____ Contacted by:__

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

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) 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)



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	А	Nov-18-10 10:00		397811-001



Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 397811

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Thu Nov-18-10 04:00 pm

Report Date: 23-NOV-10

Project Manager: Brent Barron, II

	Lab Id:	397811-001			
Analysis Paguastad	Field Id:	SVE Discharge-5			
Analysis Kequesieu	Depth:				
	Matrix:	AIR			
	Sampled:	Nov-18-10 10:00			
BTEX by EPA 8021	Extracted:	Nov-22-10 16:34			
SUB: T104704215-TX	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	Extracted:	Nov-22-10 16:34			
8015	Analyzed:	Nov-22-10 16:34			
SUB: T104704215-TX	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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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

Vork Orders : 397811	,		Project II	D: 2008-113						
Lab Batch #: 833178	Sample: 589498-1-BLK / B	LK Batcl	h: ¹ Matrix	: Air						
Units: ppmv	Date Analyzed: 11/22/10 12:39	SU	RROGATE RI	ECOVERY	STUDY					
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
4-Bromofluorobenzene	1 mary tes	27.370	30.000	91	75-125					
Lab Batch #: 833178	Sample: 589498-1-BKS / B	KS Batcl	h: 1 Matrix	: Air	1					
Units: ppmv	Date Analyzed: 11/22/10 13:26	SU	RROGATE RI	ECOVERY	STUDY					
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
4-Bromofluorobenzene	Anarytes	28.680	30.000	96	75-125					
Lah Batch #• 833178	Sample: 397724-002 D / M	D Batel	h· 1 Matrix	• Air						
Units: ppmv	Date Analyzed: 11/22/10 14:36	SU:	RROGATE RI	ECOVERY S	STUDY					
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
4-Bromofluorobenzene	Analytes	28.470	30.000	95	75-125					
Lah Batch #: 833178	Sample: 397811-001 / SMP	Batcl	h: 1 Matrix	: Air	I					
Units: ppmv	Date Analyzed: 11/22/10 16:34	SU	RROGATE RI	ECOVERY	STUDY					
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
4-Bromofluorobenzene	Anarytes	31.610	30.000	105	75-125					
L ah Batch #• 833196	Sample: 589514-1-BKS / B	KS Batel	h: 1 Matrix	• Air						
Units: ppmv	Date Analyzed: 11/22/10 11:52	SURROGATE RECOVERY STUDY								
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes			[D]						
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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 397811	,		Project II	D: 2008-113						
Lab Batch #: 833196	Sample: 589514-1-BLK / B	LK Bate	h: ¹ Matrix	: Air						
Units: ppmv	Date Analyzed: 11/22/10 12:39	SU	RROGATE RI	ECOVERY	STUDY					
TPH Gasoline R	ange 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 / M	D Batc	h: 1 Matrix	: Air						
Units: ppmv	Date Analyzed: 11/22/10 14:36	: 11/22/10 14:36 SURROGATE RECOVERY STUDY								
TPH Gasoline R	ange 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	Batc	h: 1 Matrix	: Air						
Units: ppmv	Date Analyzed: 11/22/10 16:34	SU	RROGATE RI	ECOVERY	STUDY					
TPH Gasoline R	ange 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 397811			Pr	oject ID:		2	2008-113		
Lab Batch #: 833178	Sa	ample: 589498-							
Date Analyzed: 11/22/2010	Date Pre	pared: 11/22/20)10	Analyst:	JUJ				
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	OVERY STUDY			
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags		
Analytes		L3	1-3	[C]	[D]				
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	Sa	ample: 589514-	1-BKS	Matrix:	Air				
Date Analyzed: 11/22/2010	Date Pre	pared: 11/22/20)10	Analyst:	JUJ				
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	JTUDY		
TPH Gasoline Range Organics by SW	8015	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags		
Analytes				[C]	[D]				
TPH-GRO		ND	500	420	84	71-130			

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 397811

Lab Batch #: 833178				Project I	D: 2008-113	3
Date Analyzed: 11/22/2010	Date Prepar	ed: 11/22/2010) Ana	lyst:JUJ		
QC- Sample ID: 397724-002 D	Batcl	n#: 1	Ma	trix: Air		
Reporting Units: ppmv		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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	Date Prepar Batcl	red: 11/22/2010) Ana Ma	lyst: JUJ trix: Air		
Reporting Units: ppmv		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
TPH Gasoline Range Organics b Analyte	y SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

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:	Ben Arguijo																Pr	ojec	Nar	ne: _	EK	Que	en f	<u>'ear</u>	ce		<u> </u>				
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	Company Address:	P.O. Box 3011																I	Proje	ect L	oc:_	Lea	Cou	nty, I	<u>IM</u>							
	City/State/Zip:	Lovington, NM 882	60											<u> </u>						PC)#: ₋	ΡΑΑ	-J. H	ienry	-				<u></u>			
	Telephone No:	(575)396-2378					Fax No:		<u>(</u> 50	5) 3	96-1	429					ł	Repor	t Fo	rmat	: [X	Stand	dard			TRF	۲P	[DES	3
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: 🖓	asin tru.	Plans	
Date/Time:	11 0181.11		·····
Lab ID # :	397811		
Initials:	te		

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		
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 property preserved?	Yes	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	(Yes)	No	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.	
Ibs Avib °C Ibs °C Ibs °C	lbs	٥(C Ibs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:
Regarding:		
Corrective Action Tak	en:	
Check all that apply:	□ Cooling process has begun shortly at condition acceptable by NELAC □ Initial and Backup Temperature confi □ Client understands and would like to	ter sampling event and out of temperature 5.5.8.3.1.a.1. rm out of temperature conditions proceed with analysis

Analytical Report 400068

for PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

EK Queen Pearce

2008-113

14-DEC-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)



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	А	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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 400068

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Thu Dec-09-10 04:00 pm

Report Date: 14-DEC-10

Project Manager: Brent Barron, II

	Lab Id:	400068-001			
Analysis Deguested	Field Id:	SVE Discharge-6			
Analysis Kequestea	Depth:				
	Matrix:	AIR			
	Sampled:	Dec-09-10 12:00			
BTEX by EPA 8021	Extracted:	Dec-10-10 13:59			
SUB: T104704215-TX	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	Extracted:	Dec-10-10 13:59			
8015	Analyzed:	Dec-10-10 13:59			
SUB: T104704215-TX	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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Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Vork Orders: 400068	, ,		Project II	D: 2008-113				
Lab Batch #: 835596	Sample: 591072-1-BLK / B	LK Bate	Batch: 1 Matrix: Air					
Units: ppmv	Date Analyzed: 12/10/10 12:25	SU.	RROGATE RI	ECOVERY	STUDY			
BTE	BTEX by EPA 8021 Analytes			Recovery %R [D]	Control Limits %R	Flags		
4-Bromofluorobenzene		27.440	30.000	91	75-125			
Lab Batch #: 835596	Sample: 591072-1-BKS / B	KS Batcl	h: 1 Matrix	: Air				
Units: ppmv	Date Analyzed: 12/10/10 13:12	SU	RROGATE RI	ECOVERY	STUDY			
BTE	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes							
4-Bromofluorobenzene		27.680	30.000	92	75-125			
Lab Batch #: 835596	Sample: 400068-001 / SMP	P Batch: 1 Matrix: Air						
Units: ppmv	Date Analyzed: 12/10/10 13:59	SU	RROGATE RI	ECOVERYS	STUDY			
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes							
4-Bromofluorobenzene		27.390	30.000	91	75-125			
Lab Batch #: 835596	Sample: 400068-001 D / M	D Batel	h: ¹ Matrix	:Air				
Units: ppmv	Date Analyzed: 12/10/10 14:22	SU	RROGATE RI	ECOVERYS	STUDY			
BTE	CX 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 / B	KS Batcl	h: ¹ Matrix	: Air				
Units: ppmv	Date Analyzed: 12/10/10 11:39	SU	RROGATE RI	ECOVERYS	STUDY			
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			נען				
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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders: 400068	, ,		Project II	D: 2008-113		
Lab Batch #: 835600	Sample: 591075-1-BLK / B	LK Bate	h: ¹ Matrix	Air		
Units: ppmv	Date Analyzed: 12/10/10 12:25	SU	RROGATE RI	ECOVERY	STUDY	
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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	SU	RROGATE RI	ECOVERY	STUDY	
TPH Gasoline R	TPH Gasoline Range Organics by SW 8015		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 / MI	D Batc	h: 1 Matrix	Air		
Units: ppmv	Date Analyzed: 12/10/10 14:22	SU	RROGATE RI	ECOVERY	STUDY	
TPH Gasoline R	ange 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 / BAll 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	Sa	ample: 591072-	1-BKS Matrix: Air					
Date Analyzed: 12/10/2010 D	ate Prep	pared: 12/10/20)10	Analyst:	JUJ			
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	STUDY	
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags	
Analytes				[C]	[D]			
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	Sa	ample: 591075-	1-BKS	Matrix:	Air			
Date Analyzed: 12/10/2010 D	ate Pre	pared: 12/10/20	010	Analyst:	JUJ			
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	TUDY	
TPH Gasoline Range Organics by SW 80 Analytes	015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags	
TPH-GRO		ND	500	443	89	71-130		
TPH-GRO		ND	500	443	89	/1-130	1	

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 #: 400068

Lab Batch #: 835596				Project I	D: 2008-113	3
Date Analyzed: 12/10/2010 14:22	Date Prepar	red: 12/10/2010) Ana	lyst:JUJ		
QC- Sample ID: 400068-001 D	Batcl	n #: 1	Ma	trix: Air		
Reporting Units: ppmv		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 400068-001 D	Date Prepar Batcl	red: 12/10/2010) Ana Ma	lyst: JUJ trix: Air		
Reporting Units: ppmv		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
TPH Gasoline Range Organics by Analyte	SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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



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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), 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.

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. 404999 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 404999



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge - 7	А	Jan-27-11 13:30		404999-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S



Project Name: EK Queen Pearce

Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 404999

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Thu Jan-27-11 04:30 pm

Report Date: 02-FEB-11

Project Manager: Brent Barron, II

	Lab Id:	404999-001			
Analysis Deguested	Field Id:	SVE Discharge - 7			
Analysis Kequestea	Depth:				
	Matrix:	AIR			
	Sampled:	Jan-27-11 13:30			
BTEX by EPA 8021	Extracted:	Jan-31-11 15:29			
SUB: T104704215-TX	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	Extracted:	Jan-31-11 15:29			
8015	Analyzed:	Jan-31-11 15:29			
SUB: T104704215-TX	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.
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- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- **F** RPD exceeded lab control limits.
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- MDL Method Detection Limit
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Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Vork Orders: 404999),		Project I	D: 2008-113			
Lab Batch #: 841933	Sample: 594630-1-BLK / B	LK Batch	h: ¹ Matrix	:Air			
Units: ppmv	Date Analyzed: 01/31/11 13:55	SURROGATE RECOVERY STUDY					
ВТЕ	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
4 Darmefluenchenerun	Analytes	22,200	20.000	107	75.105		
4-Bromonuorobenzene		32.200	30.000	107	75-125		
Lab Batch #: 841933	Sample: 594630-1-BKS / B	KS Batch	h: ¹ Matrix	Air			
Units: ppmv	Date Analyzed: 01/31/11 14:19	SU	RROGATE R	ECOVERY	STUDY		
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
4 December of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of th	Analytes	22.070	20.000	110	75.105		
4-Bromonuorobenzene		33.070	30.000	110	75-125		
Lab Batch #: 841933	Sample: 404999-001 / SMP	P Batch: 1 Matrix: Air					
Units: ppmv	Date Analyzed: 01/31/11 15:29	SUI	RROGATE R	ECOVERY	STUDY		
BTE	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]			
4-Bromofluorobenzene		34.700	30.000	116	75-125		
Lab Batch #: 841933	Sample: 404999-001 D / MI	D Batch	h: ¹ Matrix	:Air			
Units: ppmv	Date Analyzed: 01/31/11 15:52	SU	RROGATE R	ECOVERY	STUDY		
BTE	X 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 / B	KS Batch	h: 1 Matrix	:Air			
Units: ppmv	Date Analyzed: 01/31/11 13:09	SU	RROGATE R	ECOVERY	STUDY		
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 404999	,		Project I	D: 2008-113		
Lab Batch #: 841927	Sample: 594629-1-BLK / B	LK Bate	h: ¹ Matrix	:Air		
Units: ppmv	Date Analyzed: 01/31/11 13:55	SU	SURROGATE RECOVERY STUDY			
TPH Gasoline R	ange 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	SU	RROGATE R	ECOVERY	STUDY	
TPH Gasoline R	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 / M	D Bate	h: 1 Matrix	:Air		
Units: ppmv	Date Analyzed: 01/31/11 15:52	SU	RROGATE R	ECOVERY	STUDY	
TPH Gasoline R	ange 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 404999			2008-113						
Lab Batch #: 841933	Sa	ample: 594630-	1-BKS	Matrix:	Air				
Date Analyzed: 01/31/2011	Date Prej	pared: 01/31/20)11	Analyst:					
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	COVERY S	STUDY			
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags		
Analytes		[-]	[-]	[C]	[D]	,			
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	Sa	ample: 594629-	1-BKS	Matrix:	Air				
Date Analyzed: 01/31/2011	Date Pre	pared: 01/31/20)11	Analyst:	JUJ				
Reporting Units: ppmv	Ba	atch #: 1	BLANK /BLANK SPIKE RECOVERY STUI						
TPH Gasoline Range Organics by SW 8	8015	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags		
Analytes				[C]	[D]				
TPH-GRO		<100	500	429	86	71-130			

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 404999

Lab Batch #: 841933				Project I	D: 2008-113	3			
Date Analyzed: 01/31/2011 15:52	Date Prepar	red: 01/31/2011	Ana	lyst:JUJ					
QC- Sample ID: 404999-001 D	Batcl	n #: 1	Ma	t rix: Air					
Reporting Units: ppmv		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY			
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag			
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	DUPLIC	ATE REC	OVERY			
TPH Gasoline Range Organics by Analyte	y SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag			
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

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 Environmen	tal Service T	echnol	ogies, LLC	<u>una</u>												Pr	ojec	t #:_	2008	3-11	3									
	Company Address:	P. O. Box 301														-	I	Proje	ect L	oc:_	Lea	Cou	inty,	NM								
	City/State/Zip:	Lovington, NM 882	60													-			PC)#:		\-J.	Hen	r <u>y</u>	_							
	Telephone No:	(575)396-2378				Fax No:		(57	5) 39	96-14	429					. F	Repor	t Fo	rmat	:	X	Stan	daro	ł	[] т	JRRI	Р	l		PDES	3
	Sampler Signature:	pr ling	45	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		e-mail:		bja	rgui	jo@	basi	nen	v.cor	n					_				An	alyze	Fo	r:					<u> </u>	1
(lab use	only)	10	ן															F			TC TOT	LP: AL:			$\overline{+}$	\mathbf{x}					72 hrs	
ORDEI	x#: 4049	99	L					T	Pro	eserv	atio	n & #	of C	ontaii	ners	N ۵	latrix	015B					g Se			3260					24, 48,	\vdash
\B # (lab use only)			eginning Depth	nding Depth	Date Sampled	Time Sampled	ield Filtered	otal #. of Containers	lce	HNO ₃	HCI	H ₂ SO4	NaOH	Na ₂ 2203 None	Other (Specify)	DW = Drinking Water SL = Slud	GW = Groundwater S=Soll/So NP=Non-Potable Specify Oth	TPH: 418.1 (8015M) 80	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg	Volatiles	Semivolatiles	BTEX 8021B/5030 of BTEX 8	RCI	Chloride 300			RUSH TAT (Pre-Schedule)	Standard TAT 4 DAY
	FIEI SVE D	lischarge-7	<u></u>	<u> </u>	1/27/2011	133	<u>u</u>	1	┢──		_	-+		X			Air	X							\Box	x		\square	_	\downarrow	┶	×
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Special Relinqui	Instructions:		pate	Time	Received by:				<u> </u>				l			ate		Tin	ne	Lal Sar VO Lal Cu	bora mple Cs f cels stod	tory Col ree on c y se	of H contain contain als c	mme hers l leads hiner(on co	nta inta spac (s) inta	 ct? ce? iner		1	 (- D V V V	A ZZZZ	$ \mathbb{P}_{\Delta D}$
Relinqui	shed by:	1/27 D	7/2011	<i>USU</i> Time	Received by:	<u></u>			<u>.</u>						D	ate		Tin Ti-	ne	Sa	stod mple by ! by !	y se Ha Samj Cour	ais c nd D pier/ ier?	on co Delive Clien	t Re UPS	(s) :p. ? }	DHI	L	(Fed	D D EX	N N _one	Star
Relinqui	shed by:	C	Date	Time	Received by EL	Na E	20	n	n					1	·Z	nate 7. [(16 16	.J	Te	ි mpe	ratu	reU	pon F	रहेट 	eipt	:		A	<u>~1</u>	<u>0.</u> °(с



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:	DBin En	N. / Plai	INS
Date/Time:	1.27.11	16:30	· · · · ·
Lab ID # :	404	999	
Initials:	^	E	

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		<u></u>
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 property preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	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 N	0	Cooler 5 No.	
ibs Amb°c ibs °c ibs °c	lbs	℃°	lbs	°C

Nonconformance Documentation								
Contact:	Contacted by:	Date/Time:						
Regarding:								
Corrective Action Tak	ien:							
		· .						
Check all that apply:	□ Cooling process has begun shortly a condition acceptable by NELA	fter sampling event and out of temperature $55.8.3.1.2.1$.	· • •					
	□Initial and Backup Temperature conf	im 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 (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

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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	А	Feb-28-11 08:30		408105-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID:2008-113Work 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


Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 408105

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Mon Feb-28-11 02:00 pm

Report Date: 04-MAR-11

Project Manager: Brent Barron, II

	Lab Id:	408105-0	01			
Analysis Deguested	Field Id:	SVE Discha	rge-8			
Analysis Kequestea	Depth:					
	Matrix:	AIR				
	Sampled:	Feb-28-11 ()8:30			
BTEX by EPA 8021	Extracted:	Mar-01-11	21:29			
SUB: T104704215-TX	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	Extracted:	Mar-01-11	21:29			
8015 SUD: T104704215 TV	Analyzed:	Mar-01-11	21:29			
SUB: 1104/04215-1X	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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(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

Vork Orders: 408105	5,		Project I	D: 2008-113								
Lab Batch #: 845877	Sample: 596903-1-BLK / B	BLK Batch: 1 Matrix: Air										
Units: ppmv	Date Analyzed: 03/01/11 16:48	SU.	RROGATE R	ECOVERY	STUDY							
BTE	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
4-Bromofluorobenzene	Analytes	29.0	30.0	07	75-125							
L - L D - 4 - L # 945977	S 506002 1 PKS / P	VS Detail	50.0	. Air	15 125							
Lab Batch #: 843877	Sample: 390903-1-BKS / B	SURROGATE RECOVERY STUDY										
Units: ppmv	Date Analyzed: 03/01/11 17:35											
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
4-Bromofluorobenzene	Analytes	32.5	30.0	108	75-125							
Lab Batch #: 845877	Sample: 408048-002 D / M	D Bata	h. 1 Matrix	• Air								
Units: ppmv	Date Analyzed: 03/01/11 18:45	SURROGATE RECOVERY STUDY										
BTE	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
	Analytes			[D]								
4-Bromofluorobenzene		32.0	30.0	107	75-125							
Lab Batch #: 845877	Sample: 408105-001 / SMP	Batcl	h: 1 Matrix	:Air								
Units: ppmv	Date Analyzed: 03/01/11 21:29	SU	RROGATE R	ECOVERY	STUDY							
BTE	CX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
4-Bromofluorobenzene		33.9	30.0	113	75-125							
Lab Batch #: 845859	Sample: 596895-1-BKS / B	KS Batcl	h: 1 Matrix	:Air								
Units: ppmv	Date Analyzed: 03/01/11 15:15	SU	RROGATE R	ECOVERY	STUDY							
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 408105	,		Project II	D: 2008-113						
Lab Batch #: 845859	Sample: 596895-1-BLK / B	LK Batc	h: ¹ Matrix	: Air						
Units: ppmv	Date Analyzed: 03/01/11 16:48	SU	RROGATE R	ECOVERY	STUDY					
TPH Gasoline R	ange 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 / M	D Batc	h: ¹ Matrix	: Air						
Units: ppmv	Date Analyzed: 03/01/11 18:45	SURROGATE RECOVERY STUDY								
TPH Gasoline R	ange Organics by SW 8015 Analytes	AmountTrueControlFoundAmountRecoveryLimits[A][B]%R%R[D]								
4-Bromofluorobenzene		32.0	30.0	107	75-125					
Lab Batch #: 845859	Sample: 408105-001 / SMP	Batc	h: 1 Matrix	: Air						
Units: ppmv	Date Analyzed: 03/01/11 21:29	SU	RROGATE R	ECOVERY	STUDY					
TPH Gasoline R	ange 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 408105		2008-113							
Lab Batch #: 845877	Sa	ample: 596903-	1-BKS	Matrix:	Air				
Date Analyzed: 03/01/2011	Date Pre	pared: 03/01/20)11	Analyst:	JUJ				
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	OVERY STUDY			
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags		
Analytes				[C]	[D]				
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	Sa	ample: 596895-	1-BKS	Matrix:	Air				
Date Analyzed: 03/01/2011	Date Prej	pared: 03/01/20)11	Analyst:	JUJ				
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	STUDY		
TPH Gasoline Range Organics by SW	8015	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags		
Analytes									
TPH-GRO	<100	500	404	81	71-130				

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 408105

Lab Batch #: 845877				Project I	D: 2008-113	3		
Date Analyzed: 03/01/2011 18:45	Date Prepar	ed: 03/01/2011	l Ana	lyst:JUJ				
QC- Sample ID: 408048-002 D	Batch	#: 1	Ma	trix: Air				
Reporting Units: ppmv		SAMPLE	MPLE/SAMPLE DUPLICATE RECOV					
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag		
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 QC- Sample ID: 408048-002 D	Date Prepar Batch	ed:03/01/2011	l Ana Ma	lyst: JUJ trix: Air				
Reporting Units: ppmv		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY		
TPH Gasoline Range Organics b Analyte	oy SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag		
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

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

ea	County,	NM		

PO #: PAA-J. Henry	
--------------------	--

X Standard

Report Format:

S	ampler Signature: 2900				C-Mail.		Ja	gui		/431						L		_			Ana	lyze	For:					Т
lab use onl	у)															F			TO	CLP:		T	$\mathbf{I}_{\mathbf{x}}$	T		\square	Τ	2 Hz
	408105						1	F	reser	vatio	n & #	of C	ontaine	ers	Mati	ix g		T				+		1				48, 7
AB # (lab use only)		Seginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Fotal #. of Containers	lce	HNO ₃	HCI	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-Potable Specify Other	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg S	Volatiles Semivolatilae	BTEX 80218/5030 pr BTEX 826	Rci	Chloride 300			RUSH TAT (Pre-Schedule) 24,
01	SVE Discharge-8		┼╨╌	2/28/2011	8:30		1			1			X	:	Ai	r J	ĸ						X	:			Τ	Γ
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Fax No:

(575) 396-1429

City/State/Zip:

Telephone No:

Lovington, NM 88260

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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-In

Client: Bas	in Environmental	
Date/Time: 2	-28-11 2:00	· · · · ·
Lab ID # :	408105	
Initials: XM		

Sample Receipt Checklist

		TE,		
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	(NA)	
4. Chain of Custody present?	(Tes)	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?	(es)	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	NIA	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No). 	Cooler 5 No.	
Ibs Amb °C Ibs °C Ibs	°C lbs	°c	ibs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:
Regarding:		
Corrective Action Tak	en:	
· · · · · · · · · · · · · · · · · · ·		
Check all that apply:	□ Cooling process has begun shortly aft condition acceptable by NELAC □ Initial and Backup Temperature confirm □ Client understands and would like to p	er sampling event and out of temperature 5.5.8.3.1.a.1. n out of temperature conditions roceed 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 (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)



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	А	Apr-12-11 08:30		412907-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S



Project Name: EK Queen Pearce

Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 412907

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Tue Apr-12-11 12:07 pm

Report Date: 18-APR-11

Project Manager: Brent Barron, II

	Lab Id:	412907-0	01			
Analysis Paguastad	Field Id:	SVE Discha	rge-9			
Analysis Kequestea	Depth:					
	Matrix:	AIR				
	Sampled:	Apr-12-11 (08:30			
BTEX by EPA 8021	Extracted:	Apr-14-11	12:26			
SUB: T104704215-TX	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	Extracted:	Apr-14-11	12:26			
8015	Analyzed:	Apr-14-11	12:26			
SUB: 1104704215-1X	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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(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

,		Project I	D: 2008-113										
Sample: 600591-1-BLK / B	LK Batch	n: ¹ Matrix	:Air										
Date Analyzed: 04/14/11 12:05	SU	RROGATE R	ECOVERY	STUDY									
X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
Analytes	28.0	30.0	03	75 125									
a 112007 001 / SMD	28.0	1	<u> </u>	75-125									
Sample: 412907-0017 SMP	Batch	Batch: 1 Matrix: Air											
Date Analyzed: 04/14/11 12:26	50	KKUGATE K	JGATE RECOVERY STUDY										
X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
Analytes													
	25.5	30.0	85	75-125									
Sample: 412907-001 D / MI	D Batch	n: 1 Matrix	:Air										
Date Analyzed: 04/14/11 12:46	SUI	RROGATE R	ECOVERY	STUDY									
X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
Analytes	30.0	30.0	100	75-125									
Semula: 600591-1-BKS / B	KS Potel	n 1 Motriv	• Air	10 120									
Date Analyzed: 04/14/11 13:29	SU	RROGATE R	ECOVERY	STUDY									
X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
Anaryus	29.8	30.0	99	75-125									
	27.0 VC 5 1	1	, Ain	15-125									
Sample: 000595-1-BKS/B													
Date Analyzed: 04/14/11 11:01	30	MOUATE N											
ange Organics by SW 8015	Amount Found	True Amount	Recovery	Control Limits	Flags								
Analytes	[A]	[B]	[D]	70 K									
	, Sample: 600591-1-BLK / B Date Analyzed: 04/14/11 12:05 X by EPA 8021 Analytes Sample: 412907-001 / SMP Date Analyzed: 04/14/11 12:26 X by EPA 8021 Analytes Sample: 412907-001 D / MI Date Analyzed: 04/14/11 12:46 X by EPA 8021 Analytes Sample: 600591-1-BKS / B Date Analyzed: 04/14/11 13:29 X by EPA 8021 Analytes Sample: 600591-1-BKS / B Date Analyzed: 04/14/11 13:29 X by EPA 8021 Analytes Sample: 600595-1-BKS / B Date Analyzed: 04/14/11 11:01 ange Organics by SW 8015	Sample:600591-1-BLK / BLKBatelDate Analyzed:04/14/11 12:05SUX by EPA 8021Amount Found [A]Amount Found [A]Analytes28.0Sample:412907-001 / SMPBatelDate Analyzed:04/14/11 12:26SUX by EPA 8021Amount Found [A]Amount Found [A]Analytes25.5Sample:Sample:412907-001 D / MDBatelDate Analyzed:04/14/11 12:46SUX by EPA 8021Amount Found [A]BatelDate Analyzed:04/14/11 12:46SUX by EPA 8021Amount Found [A]SUX by EPA 8021Amount Found [A]SUX by EPA 8021Amount Found [A]SUX by EPA 802130.0SuSample:600591-1-BKS / BKSBatel DateDate Analyzed:04/14/11 13:29SUX by EPA 8021Amount Found [A]SUAnalytes29.8Sample:600595-1-BKS / BKSDate Analyzed:04/14/11 11:01SUDate Analyzed:04/14/11 11:01SUange Organics by SW 8015Amount Found Found Found FoundFound Found Found	Analyzed:Project IISample:600591-1-BLK / BLKBatch:1MatrixDate Analyzed:04/14/11 12:05SURROGATE RIAmount Found [A]True Amount [B]Analytes28.030.0Sample:412907-001 / SMP 412907-001 / SMPBatch:1MatrixDate Analyzed:04/14/11 12:26SURROGATE RIMatrixX by EPA 8021Amount Found [A]True Amount [B]True Amount [B]Analytes25.530.0Sample:412907-001 D / MD (A)Batch:1Matrix Matrix Mount [B]Date Analyzed:04/14/11 12:46SURROGATE RI Amount [A]Matrix [B]Analytes25.530.0Sample:412907-001 D / MD (A)Batch:1Matrix Matrix Mount [B]Analytes30.030.030.0Sample:600591-1-BKS / BKS (A)Batch:1Matrix Matrix MatrixDate Analyzed:04/14/11 13:29SURROGATE RI Amount [A]Matrix (B]Analytes29.830.030.0Sample:600595-1-BKS / BKS (A)Batch:1Matrix Amount [B]Analytes29.830.030.030.0Sample:600595-1-BKS / BKS (A)Batch:1Matrix Amount [B]Analytes29.830.030.0Sample:600595-1-BKS / BKS (A)Batch:1Matrix Amount [B]Analytes29.	Sample: 600591-1-BLK / BLKBatch:1Matrix: AirDate Analyzed: 04/14/11 12:05SURROGATE RECOVERY (Matrix)AmountTrue AmountRecovery %R (D)X by EPA 8021Amount [A]Amount [B]Recovery %R (D)Analytes28.030.093Sample: 412907-001 / SMP Date Analyzed: 04/14/11 12:26Batch:1Matrix: AirDate Analyzed: 04/14/11 12:26SURROGATE RECOVERY (Matrix)Amount (B]Recovery %R (D)X by EPA 8021Amount Found [A]True Amount [B]Recovery %R (D)Analytes25.530.085Sample: 412907-001 D / MD Date Analyzed: 04/14/11 12:46Batch:1Matrix: AirDate Analyzed: 04/14/11 12:46SURROGATE RECOVERY (Matrix)Matrix: AirDate Analyzed: 04/14/11 13:29SURROGATE RECOVERY (Matrix)Matrix: AirDate Analyzed: 04/14/11 11:01SURROGATE RECOVERY (Matrix)Matrix: AirDate Analyzed: 04/14/11 11:01SURROGATE RECOVERY (Matrix)Matrix: AirDate Analyzed	Project ID: 2008-113 Sample: 600591-1-BLK / BLK Batch: 1 Matrix: Air Date Analyzed: 04/14/11 12:05 SURROGATE RECOVERY STUDY X by EPA 8021 Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Analytes 28.0 30.0 93 75-125 Sample: 412907-001 / SMP Batch: 1 Matrix: Air Date Analyzed: 04/14/11 12:26 SURROGATE RECOVERY STUDY X X by EPA 8021 Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Analytes 25.5 30.0 85 75-125 Sample: 412907-001 D / MD Batch: 1 Matrix: Air Date Analyzed: 04/14/11 12:46 SURROGATE RECOVERY STUDY X X by EPA 8021 Amount [A] True Amount [B] Recovery %g [D] Control Limits %g Analytes 30.0 30.0 100 75-125 Sample: 600591-1-BKS / BKS Batch: 1 Matrix: Air Date Analyzed: 04/14/11 13:29 SURROGATE RECOVERY STUDY Sig f X by EPA 8021								

* 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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders: 412907	,		Project II	D: 2008-113							
Lab Batch #: 852230	Sample: 600595-1-BLK / B	LK Bate	h: ¹ Matrix	Air							
Units: ppmv	Date Analyzed: 04/14/11 12:05	SU	RROGATE RI	ECOVERY	STUDY						
TPH Gasoline R	ange 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							
Lab Batch #: 852230	Sample: 412907-001 / SMP	Batc	h: ¹ Matrix	Air							
Units: ppmv	Date Analyzed: 04/14/11 12:26	SURROGATE RECOVERY STUDY									
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
4-Bromofluorobenzene		25.5	30.0	85	75-125						
Lab Batch #: 852230	Sample: 412907-001 D / M	D Bate	h: 1 Matrix	Air							
Units: ppmv	Date Analyzed: 04/14/11 12:46	SU	RROGATE RI	ECOVERY	STUDY						
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 412907		Project ID:										
Lab Batch #: 852232	Sample: 600	0591-	1-BKS	Matrix:	Air							
Date Analyzed: 04/14/2011 Da	te Prepared: 04/	/14/20)11	Analyst:	JUJ							
Reporting Units: ppmv	Batch #: 1 BLANK /BLANK SPIKE REC											
BTEX by EPA 8021	Blank Result [A]	t	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags					
Analytes				[C]	[D]							
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: 600	0595-	1-BKS	Matrix:	Air							
Date Analyzed: 04/14/2011 Da	te Prepared: 04/	/14/20)11	Analyst:	JUJ							
Reporting Units: ppmv	Batch #:	1	BLANK /B	BLANK SPI	KE REC	OVERY S	TUDY					
TPH Gasoline Range Organics by SW 80 Analytes	15 Blank Result [A]	t t	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags					
TPH-GRO	<100		500	562	112	71-130						

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 412907

Lab Batch #: 852232				Project I	D: 2008-113	3
Date Analyzed: 04/14/2011 12:46	Date Prepar	red: 04/14/2011	Ana	lyst:JUJ		
QC- Sample ID: 412907-001 D	Batcl	n #: 1	Mat	t rix: Air		
Reporting Units: ppmv		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 412907-001 D	Date Prepar Batcl	red: 04/14/2011	Ana Mat	lyst: JUJ t rix: Air		
Reporting Units: ppmv		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
TPH Gasoline Range Organics by Analyte	SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

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: <u>Be</u>	n J. Arguijo														-	Pr	ojec	t Na	me:	EK	Que	en I	Pear	ce						
	Company Name Ba	sin Environmental Ser	vice Te	chnolo	ogies, LLC											-		Pr	ojec	:t #:	2008	-113									
	Company Address: <u>P.</u>	O. Box 301														-	I	Proje	ect L	.oc:	Lea	Cour	nty, M	M							
	City/State/Zip: Lo	vington, NM 88260														-			P	D #:	PAA	.J. Н	enry	<u></u>							
	Telephone No: (57	5)396-2378				Fax No:		(57	5) 3	96-1	429					F	Repor	t Fo	rmat	:	X s	and	lard			TRF	۲P] NP[DES	
	Sampler Signature:	Dati				- e-mail:		bja	rgui	jo@	basir	ienv	.con	1																	
(lab use	only)					•												F			TCL	,P:	Analy	yze F	or:				┯┥	ŝ	
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AB # (lab use only)	FIELD C	ODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	rield Filtered	fotal #. of Containers	lce	°ONH		H2504	NaOH Na,S,O,	None	Other (Specify)	DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 (8015) 8015E	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAK / ESP / CEC Metals: As An Ba Ch Cr Ph Hn Sa	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	Chloride 300			RUSH TAT (Pre-Schedule) 24, 4	Standard TAT 4 DAY
0	SVE Disc	harge-9			4/12/2011	6830		1						X			Air	X		-					X				\Box	\Box	x
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Special	Instructions :				Dession											ate		Tim	<u>A</u>	Lab San VO	orate nple (Cs Fr	Conta Conta ee of	omr ainer Hea	nent sinta adspa	s: act? ace?			Ø Ž	r >		»
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Relinquis	hed by:	Date	Tir	me	Received by EL	or: Un Éle	- tr	m						4	Da - 12	ate . • []	17	Tim J. J	ף ר(Ten	by Co f (Co npera	ture		UP n Re	S S ceipt		F A	edĔx	Lon D.	°C	រេ



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 Pasin Env.	PIGIOS	
Date/Time: 4.12.11	17:07	· .
Lab ID #: 41290	07	
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 property preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	N/A	· · · · · · · · · · · · · · · · · · ·
17. VOC sample have zero head space?	Yes	No	(N/A)	- <u> </u>
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No		Cooler 5 No.	
ibs Amb °C ibs °C ibs °C	ibs	°C	lbs	°C

Nonconformance Documentation

Contact:	Contacted by: Date/Time:	
Regarding:		
Corrective Action Tak	en:	
Check all that apply:	Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.3.1.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)

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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

THI HORACORE

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.

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. 416385 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 416385



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-10	А	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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 416385

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Thu May-12-11 02:10 pm Report Date: 17-MAY-11

Project Manager: Brent Barron, II

	Lab Id:	416385-0	01			
Analysis Paguastad	Field Id:	SVE Dischar	ge-10			
Analysis Kequestea	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	Extracted:	May-16-11	16:42			
8015	Analyzed:	May-16-11	16:42			
	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
- * Outside XENCO's scope of NELAC Accreditation.

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•	
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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

Vork Orders : 416385	5,		Project II	D: 2008-113										
Lab Batch #: 856281	Sample: 602915-1-BKS / B	KS Batcl	h: ¹ Matrix	: Air										
Units: ppmv	Date Analyzed: 05/16/11 14:20	SU.	RROGATE RI	ECOVERY	STUDY									
BTE	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
4 During flooring house on	Analytes	21.7	20.0	106	75.105									
4-Bromolluorobenzene		31.7	30.0	106	/5-125									
Lab Batch #: 856281	Sample: 602915-1-BLK / B	3LK Batch: 1 Matrix: Air												
Units: ppmv	Date Analyzed: 05/16/11 15:14	SU.	RROGATE RI	ECOVERY	STUDY	[
BTE	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
4 Promofluorohonzona	Analytes	20.7	20.0	[2]	75 105									
4-Bromonuorobenzene		29.1	30.0	99	/5-125									
Lab Batch #: 856281	Sample: 416081-002 D / M	D Batel	h: 1 Matrix	:Air										
Units: ppmv	Date Analyzed: 05/16/11 15:58	SU.	RROGATE RI	ECOVERY	STUDY									
BTE	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
4-Bromofluorobenzene	Anarytes	30.3	30.0	101	75-125									
Lab Batch #: 856281	Sample: 416385-001 / SMF	Batcl	h: ¹ Matrix	:Air										
Units: ppmv	Date Analyzed: 05/16/11 16:42	SU	RROGATE RI	ECOVERY	STUDY									
BTE	CX 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 / B	KS Batcl	h: ¹ Matrix	: Air										
Units: ppmv	Date Analyzed: 05/16/11 13:31	SU.	RROGATE RI	ECOVERY	STUDY									
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
4-Bromofluorobenzene		30.1	30.0	100	75-125									
		50.1	50.0	100	15-125									

* 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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 416385	,		Project II	D: 2008-113										
Lab Batch #: 856326	Sample: 602948-1-BLK / B	LK Bate	h: ¹ Matrix	: Air										
Units: ppmv	Date Analyzed: 05/16/11 15:14	SURROGATE RECOVERY STUDY							/16/11 15:14 SURROGATE RECOVERY STUDY					
TPH Gasoline R	ange 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 / M	D Bate	h: ¹ Matrix	: Air										
Units: ppmv	Date Analyzed: 05/16/11 15:58	SURROGATE RECOVERY STUDY												
TPH Gasoline R	ange 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	Bate	h: 1 Matrix	: Air										
Units: ppmv	Date Analyzed: 05/16/11 16:42	SU	RROGATE RI	ECOVERY	STUDY									
TPH Gasoline R	ange 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 416385			Project ID:										
Lab Batch #: 856281	Sa	ample: 602915-	1-BKS	Matrix:	Air								
Date Analyzed: 05/16/2011	Date Prej	pared: 05/16/20	ared: 05/16/2011 Analyst: JUJ										
Reporting Units: ppmv	Ba	atch #: 1	BLANK /H	BLANK SPI	KE REC	COVERY STUDY							
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags						
Analytes				[C]	[D]								
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	Si	ample: 602948-	1-BKS	Matrix:	Air								
Date Analyzed: 05/16/2011	Date Prep	pared: 05/16/20)11	Analyst:	JUJ								
Reporting Units: ppmv	Ba	atch #: 1	BLANK /	BLANK SPI	KE REC	COVERY S	STUDY						
TPH Gasoline Range Organics by SW	8015	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags						
Anarytes					[D]								
TPH-GRO	<100	500	489	98	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 #: 416385

Lab Batch #: 856281			Project I	D: 2008-113	3						
Date Analyzed: 05/16/2011 15:58 Date Prepa	red: 05/16/201	l Ana	lyst:JUJ								
QC- Sample ID: 416081-002 D Bate	:h #: 1	Mat	rix: Air								
Reporting Units: ppmv	SAMPLE / SAMPLE DUPLICATE RECOVERY										
BTEX by EPA 8021 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
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 QC- Sample ID: 416081-002 D Batc	red: 05/16/2011	l Anal Mat	lyst: JUJ rix: Air								
Reporting Units: ppmv	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY						
TPH Gasoline Range Organics by SW 8015 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
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

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	4			-114 - 114 - FR										-	P	roje	ct Na	me:	EK	Qu	eer	<u>ı Pe</u>	arce	<u>, </u>						
	Company Name	Basin Environment	tal Service T	echnol	ogies, LLC											-		F	Proje	:t #:	200	8-11	3									
	Company Address	P. O. Box 301	.F.u.													-		Pro	ject	-oc:	Lea	Co	unty	', N M								_
	City/State/Zip:	Lovington, NM 882	:60													-			Ρ	0 #:	PA	A-J .	Her	iry_	_							—
	Telephone No:	(575)396-2378				Fax No:		(57	5) 39	96-1	429				<u></u>	-	Repo	ort F	orma	t:	X	Star	ndar	d	[ד [RRP			NPD	ES	
	Sampler Signature	: Dakotah wak	-L			e-mail:		bja	rguij	jo@	basi	nen	v.co	m				-	_				Ar	alvze	For					-т	٦	
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OPDE	P# 4110	385							F	rese	rvatio	n & #	≠of C	ontain	ers	Ň	latrix	۲. g		T	TO	TAL:	ę	-+		<u>니</u> 2					48, 7	
AB # (lab use only)			seginning Depth	inding Depth	Date Sampled	Time Sampled	field Filtered	fotal #. of Containers	lce	HNO ₃	HCI	H₂SO₄	NaOH	Na ₂ S ₂ O ₃ None	Other (Specify)	DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg S	Volatiles	Semivolatiles	BIEX 80215/3030 yr DIEA 421	Chloride 300				RUSH TAT (Pre-Schedule) 24,	Standard TAT 4 DAY
	SVE C	Discharge-10		<u> ""</u>	5/12/2011		<u> </u>	1		_	-			5	1	T	Air];	x							x					$ \downarrow$	X
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XENCO Laboratories

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

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: LUDIVI LIN / 1 MIVIS	
Date/Time: 51211 1410	
Lab ID #: 410385	
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/Å)	
4. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
6. Any missing / extra samples?	Yes	<u>(No)</u>		
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 N	D.	Cooler 5 No.	
Ibs Amb °C Ibs °C Ibs	°C lbs	°(C Ibs	°C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: ______ Regarding: ______ Corrective Action Taken: ______ 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.

 \Box Initial and Backup Temperature confirm out of temperature conditions \Box 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 (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

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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)



01-JUL-11

ALLY ACCREDIES

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	А	Jun-28-11 09:45		421327-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work 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


Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 421327

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Tue Jun-28-11 02:34 pm

Report Date: 01-JUL-11

Project Manager: Brent Barron, II

	Lab Id:	421327-0	01			
Analysis Deguested	Field Id:	SVE Dischar	ge-11			
Analysis Kequestea	Depth:					
	Matrix:	AIR				
	Sampled:	Jun-28-11 (9:45			
BTEX by EPA 8021	Extracted:	Jun-29-11	18:12			
SUB: AZ0765	Analyzed:	Jun-29-11	18:12			
	Units/RL:	ppmv	RL			
Benzene		ND	1.00			
Toluene	1	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	Extracted:	Jun-29-11	18:12			
8015	Analyzed:	Jun-29-11	18:12			
SUB: AZ0765	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

Page 5 of 12



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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Project Name: EK Queen Pearce

Vork Orders: 421327	7,		Project I	D: 2008-113		
Lab Batch #: 862197	Sample: 606898-1-BKS / B	KS Batcl	h: ¹ Matrix	:Air		
Units: ppmv	Date Analyzed: 06/29/11 13:25	SU.	RROGATE R	ECOVERY	STUDY	
BTF	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	Analytes	27.8	30.0	93	75-125	
Lah Batah # 862197	Sample: 606808-1-BLK / B	IK Bota	h. 1 Motriv	• Air	10 120	
Units: ppmv	Date Analyzed: 06/29/11 14:09	SU.	RROGATE R	ECOVERY	STUDY	
BTE	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	20.5	20.0		77.107	
4-Bromofluorobenzene		30.5	30.0	102	75-125	
Lab Batch #: 862197	Sample: 421190-004 D / M	D Batcl	h: 1 Matrix	:Air	~~~~~	
Units: ppmv	Date Analyzed: 06/29/11 17:28	SU	RROGATE R	ECOVERY	STUDY	
BTE	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
4-Bromofluorobenzene	Analytes	27.0	30.0	[D] 90	75-125	
Lah Batch #• 862197	Sample: 421327-001 / SMP	P Batel	h• 1 Matrix	· Air		
Units: ppmv	Date Analyzed: 06/29/11 18:12	SU	RROGATE R	ECOVERY	STUDY	
BTE	CX 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 / B	KS Batcl	h: ¹ Matrix	:Air		
Units: ppmv	Date Analyzed: 06/29/11 12:38	SU.	RROGATE R	ECOVERY	STUDY	
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			נען		
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



Project Name: EK Queen Pearce

Work Orders : 421327	,		Project II	D: 2008-113		
Lab Batch #: 862184	Sample: 606892-1-BLK / B	LK Bate	h: ¹ Matrix	: Air		
Units: ppmv	Date Analyzed: 06/29/11 14:09	SU	RROGATE R	ECOVERY	STUDY	
TPH Gasoline R	ange 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 / M	D Bate	h: ¹ Matrix	: Air		
Units: ppmv	Date Analyzed: 06/29/11 15:15	SU	RROGATE R	ECOVERY	STUDY	
TPH Gasoline R	ange 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	Batc	h: 1 Matrix	: Air		
Units: ppmv	Date Analyzed: 06/29/11 18:12	SU	RROGATE RI	ECOVERY	STUDY	
TPH Gasoline R	ange 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





Project Name: EK Queen Pearce

Work Order #: 421327			Pr	oject ID:		2	008-113
Lab Batch #: 862197	Sa	ample: 606898-	1-BKS	Matrix:	Air		
Date Analyzed: 06/29/2011	Date Pre	pared: 06/29/20)11	Analyst:	BEC		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	OVERY S	STUDY
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags
Analytes				[C]	[D]		
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	S	ample: 606892-	1-BKS	Matrix:	Air		
Date Analyzed: 06/29/2011	Date Pre	pared: 06/29/20)11	Analyst:	BEC		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	STUDY
TPH Gasoline Range Organics by SW	8015	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags
Апатуися							
TPH-GRO		<100	500	392	78	71-130	

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 421327

Lab Batch #: 862197				Project I	D: 2008-113	3
Date Analyzed: 06/29/2011 17:28	Date Prepar	ed: 06/29/2011	Ana	lyst:BEC		
QC- Sample ID: 421190-004 D	Batcl	h#: 1	Ma	trix: Air		
Reporting Units: ppmv		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 421189-002 D	Date Prepar Batel	red: 06/29/2011	Ana Ma	l yst: BEC trix: Air		
Reporting Units: ppmv		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
TPH Gasoline Range Organics b Analyte	oy SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

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	Project Manager:	Ben J. Arguijo															Pro	oject	t Na	me:	EΚ	Qu	ieei	n Pe	earc	ce						
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	City/State/Zip:	Lovington, NM 88260																	P	Э#:	PA	A-J .	Her	ıry	_							
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AB # (lab use oniy)	EIF		seginning Depth	inding Depth	Date Sampled	Time Sampled	ield Filtered	otal #. of Containers	Ice		HCI H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge CM - Conuctioned - Coni/Solid	NP=Non-Potable Specify Other	TPH: 418.1 8015M 80	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8	RCI	Chloride 300			RUSH TAT (Pre-Schedule) 2-	Standard TAT 4 DAY
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

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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:	lacus		
Date/Time:	4/28/11	2:34	
Lab ID # :	42132	27	
Initials: 9	14 -		

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	and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	
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 property preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	NA	
17. VOC sample have zero head space?	Yes	No		
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No). 	Cooler 5 No.	
Ibs and c Ibs c Ibs c	bs	°(C Ibs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:
Regarding: <u>(</u>	und to Xenco-Howton	
Corrective Acti	on Taken:	
Check all that :	appiy: □Cooling process has begun shortly aft condition acceptable by NELAC □Initial and Backup Temperature confin □Client understands and would like to p	er sampling event and out of temperature 5.5.8.3.1.a.1. n out of temperature conditions rroceed 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



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 Tucson (EPA Lab code: AZ00989): Arizona (AZ0758)



15-AUG-11

THI BORATOR

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	А	08-04-11 09:50		425094-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 425094

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Thu Aug-04-11 01:39 pm Report Date: 15-AUG-11

Project Manager: Brent Barron II

	Lab Id:	425094-00	01			
Analysis Dogwostad	Field Id:	SVE Discharg	ge-12			
Analysis Kequestea	Depth:					
	Matrix:	AIR				
	Sampled:	Aug-04-11 0	9:50			
BTEX by EPA 8021	Extracted:	Aug-05-11 2	22:02			
	Analyzed:	Aug-05-11 2	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 1	4:21			
	Analyzed:	Aug-08-11 1	4:21			
	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	Extracted:	Aug-11-11 1	7:28			
8015	Analyzed:	Aug-11-11 2	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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Project Name: EK Queen Pearce

Work Orders: 425094	ł,		Project II	D: 2008-113							
Lab Batch #: 866697	Sample: 425094-001 / SMP	IP Batch: 1 Matrix: Air									
Units: ppmv	Date Analyzed: 08/05/11 22:02	SU	SURROGATE RECOVERY STUDY								
BTE	CX by EPA 8021 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 #: 866844	Sample: 425094-001 / SMP	Batc	h: ¹ Matrix:	Air	1 1						
Units: ppmv	Date Analyzed: 08/08/11 14:21	SU	RROGATE RI	ECOVERY	STUDY						
BTF	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
4-Bromofluorobenzene		29.0	30.0	97	75-125						
Lab Batch #: 867078	Sample: 425094-001 / SMP	Bate	h: 1 Matrix:	Air							
Units: ppmv	Date Analyzed: 08/11/11 20:29	SU	RROGATE RI	ECOVERY	STUDY						
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
4-Bromofluorobenzene		34.5	30.0	115	75-125						
Lab Batch #: 866697	Sample: 609485-1-BLK / B	LK Batc	h: 1 Matrix:	Air							
Units: ppmv	Date Analyzed: 08/05/11 17:17	SU	RROGATE RI	ECOVERY	STUDY						
BTE	CX by EPA 8021 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 #: 866844	Sample: 609619-1-BLK / B	LK Batc	h: 1 Matrix:	Air							
Units: ppmv	Date Analyzed: 08/08/11 12:58	SU	RROGATE RI	ECOVERY	STUDY						
BTE	CX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
4-Bromofluorobenzene		28.2	30.0	94	75-125						
			1	I	1						

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: EK Queen Pearce

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 [A] True [B] Recovery %R Control Limits: %R Plags 4-Bromofluorobenzene 34.1 30.0 114 75-125 - Lab Batch #: 866697 Sample: 609485-1-BKS / BKS Batch: 1 Matrix: Air - BTEX by EPA 8021 Amount Found True Analytes True Amount Found Recovery [B] Control 7%R Plags 7%R 4-Bromofluorobenzene 31.1 30.0 104 75-125 - Lab Batch #: 866844 Sample: 609619-1-BKS / BKS Batch: 1 Matrix: Air Flags 7%R Plags 7%R Units: ppmv Date Analyzed: 08/08/11 12:15 SURROGATE RECOVERY STUDY - Lab Batch #: 866844 Sample: 609754-1-BKS / BKS Batch: 1 Matrix: Air Units: ppmv Date Analyzed: 08/0754-1-BKS / BKS Batch: 1 Matrix: Air Lab Batch #: 867078 Sample: 609754-1-BKS / BKS Batch: 1	Vork Orders: 425094	·,		Project I	D: 2008-113		
Units: ppmvDate Analyzed: $08/11/11 18:18$ SURROGATE RECOVERY STUDYTPH Gasoline Range Organics by SW 8015 AnalytesAmount IAITrue Amount IBIRecovery $\% R$ IDIControl Limits $\% R$ IDI4-Bromofluorobenzene34.130.011475-125Lab Batch #: 866697 Units: ppmvSample: 609485-1-BKS / BKS Date Analyzed: 08/05/11 16:14Batch: 1Matrix: AirBTEX by EPA 8021 4-BromofluorobenzeneAmount [A]True Amount [B]Recovery $\% R$ [D]Control Limits $\% R$ [D]4-Bromofluorobenzene31.130.010475-125Lab Batch #: 866844 Units: ppmvSample: 609619-1-BKS / BKS Batch: 1Matrix: AirControl Limits $\% R$ [D]Flags $\% R$ (D)BTEX by EPA 8021 AnalytesAmount Found [A]True Amount [B]Recovery $\% R$ (D)Control Limits $\% R$ Harbor 4: 866844 AnalytesSample: 609754-1-BKS / BKS (AnalytesBatch: 1Matrix: AirUnits: ppmvDate Analyzed: 08/11/11 17:12SURROGATE RECOVERY STUDYTPH Gasoline Range Organics by SW 8015 (AnalytesAmount Found [A]True Amount 	Lab Batch #: 867078	Sample: 609754-1-BLK / B	LK Bate	h: ¹ Matrix	: Air		
TPH Gasoline Range Organics by SW 8015 AnalytesAmount Found [A]True Amount Found [B]Recovery (B)Control Limits (B)Flags4-Bromofluorobenzene34.130.011475-125Lab Batch #: 866697Sample: 609485-1-BKS / BKSBatch: 1Matrix: AirUnits: ppmvDate Analyzed: 08/05/11 16:14SURROGATE RECOVERY STUDYControl LimitsFlags %RBTEX by EPA 8021Amount Found [A]True AnalytesRecovery %RControl minsFlags %R4-Bromofluorobenzene31.130.010475-125Lab Batch #: 866844Sample: 609619-1-BKS / BKSBatch: 1Matrix: AirControl LimitsFlags %RUnits: ppmvDate Analyzed: 08/05/11 12:15SURROGATE RECOVERY STUDYBTEX by EPA 8021Amount Found [A]True AnalytesControl LimitsFlags4-Bromofluorobenzene28.730.09675-125Lab Batch #: 867078Sample: 609754-1-BKS / BKSBatch: 1Matrix: AirUnits: ppmvDate Analyzed: 08/11/11 17:12SURROGATE RECOVERY STUDYTPH Gasoline Range Organics by SW 8015 AnalytesAmount Found [A]True Amount [B]Recovery %R (B]Control Limits4-Bromofluorobenzene35.030.0111775-125Lab Batch #: 866844Sample: 425094-001 D / MD Batch: 1Matrix: AirUnits: ppmvDate Analyzed: 08/08/11 14:44SUROGATE RECOVERY STUDY	Units: ppmv	Date Analyzed: 08/11/11 18:18	SU	RROGATE R	ECOVERY	STUDY	
Analytes 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 Imits BTEX by EPA 8021 Amount [A] True Found [A] Matrix: Air Flags 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 Imits BTEX by EPA 8021 Amount [A] True Amount [B] Recovery %GR [D] Control Limits %R Flags 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 Imits %R Flags %R 4-Bromofluorobenzene 35.0 30.0 117 75-125 Lab Batch #: 866844 Sample: 425094-001	TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 [A] True BUR Recovery %R Control Limits Flags 4-Bromofluorobenzene 31.1 30.0 104 75-125 Flags Lab Batch #; 866844 Sample: 609619-1-BKS / BKS Batch: 1 Matrix: Air Units: ppmv Date Analyzed: 08/08/11 12:15 SURROGATE RECOVERY STUDY Control Limits Flags BTEX by EPA 8021 Amount [A] True Amount [A] True Amount [B] Recovery %R Control Limits Flags 4-Bromofluorobenzene 28.7 30.0 96 75-125 Distance Flags 4-Bromofluorobenzene 28.7 30.0 96 75-125 Distance Flags Units: ppmv Date Analyzed: 08/11/11 17:12 SURROGATE RECOVERY STUDY Distance Flags TPH Gasoline Range Organics by SW 8015 Amount Found [A] True Amount Found [B] Recovery %R Control Limits Flags 4-Bromofluorobenzene 35.0 30.0	4-Bromofluorobenzene	Analytes	34.1	30.0	114	75-125	
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AnalytesIDIIDI4-Bromofluorobenzene31.130.010475-125Lab Batch #: 866844Sample: 609619-1-BKS / BKSBatch:1Matrix: AirUnits: ppmvDate Analyzed: 08/08/11 12:15SURROGATERECOVERY STUDYBTEX by EPA 8021Amount [A]True [B]Recovery %R [D]Control Limits %R [D]4-Bromofluorobenzene28.730.09675-125Lab Batch #: 867078Sample: 609754-1-BKS / BKSBatch:1Matrix: AirUnits: ppmvDate Analyzed: 08/11/11 17:12SURROGATERecovery Matrix: AirControl Limits %R [D]TPH GasolineRange Organics by SW 8015Amount [A]True Amount [B]Recovery %R [D]Control Limits %R %R [D]4-Bromofluorobenzene35.030.011775-125Lab Batch #: 866844Sample: 425094-001 D / MD AnalytesBatch:1Matrix: AirUnits: ppmvDate Analyzed: 08/08/11 14:44SURROGATE RECOVERY STUDYLab Batch #: 866844Sample: 425094-001 D / MD [A]Batch:1Matrix: AirUnits: ppmvDate Analyzed: 08/08/11 14:44SURROGATE RECOVERY STUDYBTEX by EPA 8021Amount [A]True Amount [B]Recovery %R [D]Control Limits %R [D]Analytes009075-125	ВТЕ	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
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Units: ppmvDate Analyzed: 08/08/11 12:15SURROGATE RECOVERY STUDYBTEX by EPA 8021Amount Found [A]True Amount [B]Recovery %RControl Limits %RFlags4-Bromofluorobenzene28.730.09675-125Lab Batch #: 867078Sample: 609754-1-BKS / BKS Mate Analyzed: 08/11/11 17:12Batch: 1 Matrix: AirMatrix: AirTPH Gasoline Range Organics by SW 8015Amount Found [A]True Manount [B]Recovery %RControl Limits %RFlags4-Bromofluorobenzene35.030.011775-125Lab Batch #: 866844Sample: 425094-001 D / MD Units: ppmvBatch: 1 Matrix: AirFlags %RFlags %R4-Bromofluorobenzene35.030.011775-125Lab Batch #: 866844Sample: 425094-001 D / MD Units: ppmvBatch: 1 Matrix: AirControl Limits %RFlagsBTEX by EPA 8021Amount Found [A]True AnalytesControl Manount BibleFlags %R4-Bromofluorobenzene29.430.09875.125	Lab Batch #: 866844	Sample: 609619-1-BKS / B	KS Bate	h: 1 Matrix	:Air		
BTEX by EPA 8021Amount Found [A]True Amount Found [A]True Amount [B]Control Limits %RFlags4-Bromofluorobenzene28.730.09675-1254-Bromofluorobenzene28.730.09675-125Lab Batch #: 867078Sample: 609754-1-BKS/BKSBatch:1Matrix: AirUnits: ppmvDate Analyzed: 08/11/11 17:12SURROGATE RECOVERY STUDYFlagsTPH Gasoline Range Organics by SW 8015Amount Found [A]True Amount [B]Recovery %R (D]Flags4-Bromofluorobenzene35.030.011775-125Lab Batch #: 866844Sample: 425094-001 D / MD Units: ppmvBatch:1Matrix: AirUnits: ppmvDate Analyzed: 08/08/11 14:44SURROGATE RECOVERY STUDYBTEX by EPA 8021Amount Found [A]True Amount (B]Recovery %R (D]Control Limits %RFlagsAnalytes1Matrix: AirSURROGATE RECOVERY STUDYBTEX by EPA 8021Amount Found [A]True Amount (B]Recovery %R %R (D]Flags4-Bromofluorobenzene29.430.09875-125	Units: ppmv	Date Analyzed: 08/08/11 12:15	SU	RROGATE R	ECOVERY	STUDY	
AnalytesImage: Control Limits4-Bromofluorobenzene28.730.09675-125Lab Batch #: 867078Sample: 609754-1-BKS / BKSBatch:1Matrix: AirUnits: ppmvDate Analyzed: 08/11/11 17:12SURROGATE RECOVERY STUDYTPH Gasoline Range Organics by SW 8015Amount Found [A]True Amount [B]Recovery %R [D]Control Limits %R4-Bromofluorobenzene35.030.011775-125Lab Batch #: 866844Sample: 425094-001 D / MDBatch:1Matrix: AirUnits: ppmvDate Analyzed: 08/08/11 14:44SURROGATE RECOVERY STUDYControl Limits mits found [A]BTEX by EPA 8021Amount Found [A]True Amount [B]Recovery %RControl Limits mits %RAnalytes29.430.09875.125	BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
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Lab Batch #: 867078Sample: 609754-1-BKS / BKSBatch:1Matrix: AirUnits: ppmvDate Analyzed: 08/11/11 17:12SURROGATERECOVERY STUDYTPH Gasoline Range Organics by SW 8015Amount Found [A]True (B]Recovery %R [D]Control Limits %RFlags4-Bromofluorobenzene35.030.011775-125Lab Batch #: 866844Sample: 425094-001 D / MD Units: ppmvBatch:1Matrix: AirUnits: ppmvDate Analyzed: 08/08/11 14:44SURROGATERECOVERY STUDYBTEX by EPA 8021Amount Found [A]True Amount [A]Recovery %R [D]Control Limits %R4-Bromofluorobenzene29.430.09875-125	4-Bromolluorobenzene		28.7	30.0	96	75-125	
Units: ppmvDate Analyzed: 08/11/11 17:12SURROGATE RECOVERY STUDYTPH Gasoline Range Organics by SW 8015 AnalytesAmount Found [A]True Amount [B]Recovery %R [D]Control Limits %RFlags4-Bromofluorobenzene35.030.011775-125Lab Batch #: 866844 Units: ppmvSample: 425094-001 D / MD Date Analyzed: 08/08/11 14:44Batch: 1 Found [A]Matrix: AirBTEX by EPA 8021Amount Found [A]True BIBRecovery %R %R [D]Control Limits %R4-Bromofluorobenzene29.430.09875-125	Lab Batch #: 867078	Sample: 609754-1-BKS / B	KS Bate	h: ¹ Matrix	:Air		
TPH Gasoline Range Organics by SW 8015Amount Found [A]True Amount [B]Control Limits %RFlags4-Bromofluorobenzene35.030.011775-125Lab Batch #: 866844Sample: 425094-001 D / MDBatch:1Matrix: AirUnits: ppmvDate Analyzed: 08/08/11 14:44SURROGATE RECOVERY STUDYFlagsBTEX by EPA 8021Amount Found [A]True (B]Recovery %R (D)Control LimitsFlags4-Bromofluorobenzene29.430.09875-125	Units: ppmv	Date Analyzed: 08/11/11 17:12	50	RROGATE R	ECOVERY	STUDY	
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 4-Bromofluorobenzene 29.4 30.0 98 75-125	TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 4-Bromofluorobenzene 29.4 30.0 98 75-125	4-Bromofluorobenzene		35.0	30.0	117	75-125	
Units: ppmv Date Analyzed: 08/08/11 14:44 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount Found [A] True Amount [B] Control binits %R [D] Flags Analytes 29.4 30.0 98 75-125	Lab Batch #: 866844	Sample: 425094-001 D / M	D Batc	h: ¹ Matrix	Air		
BTEX by EPA 8021Amount Found [A]True Amount [B]Control Limits %RControl Limits %RAnalytes29.430.09875-125	Units: ppmv	Date Analyzed: 08/08/11 14:44	SU	RROGATE R	ECOVERY	STUDY	
4-Bromofluorobenzene 29.4 30.0 98 75-125	BTE	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	4-Bromofluorobenzere		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



Project Name: EK Queen Pearce

Work Orders: 425094,		Project ID: 2008-113								
Lab Batch #: 867078	Sample: 424771-003 D / M	D Bate	h: ¹ Matrix:	Air						
Units: ppmv	Date Analyzed: 08/11/11 20:08	SURROGATE RECOVERY STUDY								
TPH Gasoline Ra	nge 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





Project Name: EK Queen Pearce

Work Order #: 425094		P	roject ID:		2	008-113
Lab Batch #: 866697 Date Analyzed: 08/05/2011 Date Pa	Sample: 609485- repared: 08/05/20	-1-BKS 011	Matrix: Analyst:	Air BEC		
Reporting Units: ppmv	Batch #: 1	BLANK /	BLANK SPI	KE REC	COVERY S	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 Date Analyzed: 08/08/2011 Date Pr	Sample: 609619- repared: 08/08/20	-1-BKS 011	Matrix: Analyst:	Air BEC		
Reporting Units: ppmv	Batch #: 1	BLANK /	BLANK SPI	KE REC	COVERYS	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		
Reporting Units: ppmy	Batch #: 1	BLANK /	BLANK SPI	KOL	COVERY	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 I	D: 2008-113	3
Date Analyzed: 08/08/2011 14:44 Dat	te Prepare	ed: 08/08/2011	Ana	lyst:BEC		
QC- Sample ID: 425094-001 D	Batch	#: 1	Mat	rix: Air		
Reporting Units: ppmv	ſ	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Analyte]	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 Dat QC- Sample ID: 424771-003 D	te Prepare Batch	ed:08/11/2011 #: 1	Ana Mat	l yst: ROL rix: Air		
Reporting Units: ppmv		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
TPH Gasoline Range Organics by SW Analyte	8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

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															i	Proje	ct Na	me:	EK	Que	en l	Pea	rce						-
	Company Name	Basin Environm	ental Servi	ice Te	chnolo	ogies, LLC												F	Proje	ct #:	200	8-11	3								
	Company Address:	P. O. Box 301																Pro	ject	Loc:	Lea	Cou	nty, I	NM							-
	City/State/Zip:	Lovington, NM 8	88260																P	0 #:	PAA	4-J.	lenry	<u>′</u> _							_
	Telephone No:	(575)396-2378					Fax No:		(575	5) 39	6-14	29					Rep	ort F	orma	it:	X	Stan	dard			TR	٦P	Ľ] NPI	DES	
	Sampler Signature:	Dakorahve	W.				e-mail:		bjar	guij	o@t	asin	env	.com				_					Anal	170	or					F1	
(lab use	only)																	E			TO	LP:	Anai				\square		Τ	2 hrs	
ORDE	r#: 4250	94					<u></u>			P	reser	vation	& # (of Cont	ainers	;	Matri	x a		Τ		AL:	Se	+						4, 48, 7	٦
AB # (lab use only)	FIEI	LD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	lce	HNO ₃	HCI H-SO	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soit/Solid	NP≃Non-Potable Specify Other TDH: 418.1 \$60150 801	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (CI, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 82	RCI	Chloride 300			RUSH TAT (Pre-Schedule) 24 Standard TAT 4 DAY	
01	SVE Di	scharge-12				8/4/2011	0950		1						x		Air	· _ ,	4						X		\vdash		\downarrow	X	-
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Relinquis	shed by:		Date	Ti	me	Received by:										Dai	te	Ti	me	La Cu Cu	peis stod stod	on co y sea y sea	ontain Ils on Ils on	coni coni cooi	aine er(s	er(s))		Y Y Y			
Relinquis	shed by:		Date	Ti	me	Received by:	. 1									Da	te	Ti	me	Sa	mple by S by (Han	d Del ler/Oli er?	liver ient F Ul	ed Rep. PS	, ? DH	L	Feder	\mathbb{P}	N N ne Star	
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010

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

Prelogin / Nonconformance Report - Sample Log-In

Client	Jains	
Date/Time:	8/4/11 1:39	
Lab ID # :	425094	
Initials: A	H	

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?	Mes	No		
11. Samples in proper container / bottle?	Yes	No		<u> </u>
12. Samples property preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	(Yes)	No	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.	
Ibs Hyu °C Ibs °C Ibs °	C Ibs	ి(ibs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:
Regarding:		
Corrective Action Tak	$en: \pm 16) \rhoub to Xe$	nec Howston
Check all that apply:	□ Cooling process has begun shortly condition acceptable by NEL4 □ Initial and Backup Temperature con □ Client understands and would like t	after sampling event and out of temperature NC 5.5.8.3.1.a.1. firm out of temperature conditions o 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 Tucson (EPA Lab code: AZ00989): Arizona (AZ0758)



15-SEP-11

THI PACERED

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

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 427278



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge - 13	А	09-08-11 09:25		427278-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 427278

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Thu Sep-08-11 01:30 pm

Report Date: 15-SEP-11

Project Manager: Brent Barron II

	Lab Id:	427278-0	01			
Analysis Paguastad	Field Id:	SVE Discharg	e - 13			
Analysis Kequestea	Depth:					
	Matrix:	AIR				
	Sampled:	Sep-08-11 0	9:25			
BTEX by EPA 8021	Extracted:	Sep-12-11 0	0:13			
SUB: E871002	Analyzed:	Sep-12-11 0	0:13			
	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	Extracted:	Sep-09-11 1	9:17			
8015	Analyzed:	Sep-09-11 1	9:17			
SUB: E871002	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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(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	



Project Name: EK Queen Pearce

Vork Orders: 427278	,		Project II	D: 2008-113				
Lab Batch #: 869677	Sample: 427278-001 / SMP	Batch: 1 Matrix: Air						
Units: ppmv	Date Analyzed: 09/09/11 19:17	SU	RROGATE RI	ECOVERY	STUDY			
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
4 Promofluorohanzana	Analytes	26.0	20.0	07	75 105			
	~	20.0	30.0	07	75-125			
Lab Batch #: 869673	Sample: 427278-0017 SMP	Batch	h: ¹ Matrix	:Air	OTUDY			
Units: ppmv	Date Analyzed: 09/12/11 00:13	50.	KROGATE RI	LCOVERY	STUDY			
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes		20.0					
4-Bromofluorobenzene		33.5	30.0	112	75-125			
Lab Batch #: 869677	Sample: 611204-1-BLK / Bl	LK Batch	h: 1 Matrix	:Air				
Units: ppmv	Date Analyzed: 09/09/11 12:33	SU	RROGATE RI	ECOVERY	STUDY			
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
4-Bromofluorobenzene		26.0	30.0	87	75-125			
Lab Batch #: 869673	Sample: 611203-1-BLK / Bl	LK Batcl	h: 1 Matrix	:Air				
Units: ppmv	Date Analyzed: 09/11/11 17:29	SU	RROGATE RI	ECOVERY	STUDY			
ВТЕ	X by EPA 8021 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 #: 869677	Sample: 611204-1-BKS / BI	KS Batcl	h: 1 Matrix	Air				
Units: ppmv	Date Analyzed: 09/09/11 11:45	SURROGATE RECOVERY STUDY						
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
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



Project Name: EK Queen Pearce

Work Orders : 427278	,		Project ID: 2008-113									
Lab Batch #: 869673	Sample: 611203-1-BKS / B	KS Batch: ¹ Matrix: Air										
Units: ppmv	Date Analyzed: 09/11/11 16:41	SURROGATE RECOVERY STUDY										
BTE	X by EPA 8021 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 #: 869677	Sample: 427052-001 D / M	D Batc	h: ¹ Matrix	Air								
Units: ppmv	Date Analyzed: 09/09/11 13:20	SURROGATE RECOVERY STUDY										
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
4-Bromofluorobenzene		26.4	30.0	88	75-125							
Lab Batch #: 869673	Sample: 427247-002 D / M	D Batc	h: 1 Matrix	Air								
Units: ppmv	Date Analyzed: 09/11/11 22:43	SU	RROGATE RI	ECOVERY	STUDY							
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
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





Project Name: EK Queen Pearce

Vork Order #: 427278Project ID:							2008-113			
Lab Batch #: 869673	Sa	ample: 611203-	1-BKS	Matrix:	Air					
Date Analyzed: 09/11/2011	Date Pre	pared: 09/11/20)11	Analyst:	BEC					
Reporting Units: ppmv	Ba	atch #: 1	BLANK /B	BLANK SPI	KE REC	OVERY STUDY				
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags			
Analytes				[C]	[D]					
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	S	ample: 611204-	1-BKS	Matrix:	Air					
Date Analyzed: 09/09/2011	Date Pre	pared: 09/09/20)11	Analyst:	BEC					
Reporting Units: ppmv	Ba	atch #: 1	BLANK /B	BLANK SPI	KE REC	OVERY S	STUDY			
TPH Gasoline Range Organics by SW 8 Analytes	8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags			
TPH-GRO		<100	500	439	88	71-130				

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 427278

Lab Batch #: 869673				Project I	D: 2008-113	3
Date Analyzed: 09/11/2011 22:43 Date	Prepar	ed: 09/11/2011	Ana	lyst:BEC		
QC- Sample ID: 427247-002 D	Batch	n#: 1	Mat	rix: Air		
Reporting Units: ppmv		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 427052-001 D	Prepar Batcł	ed:09/09/2011	Ana Mat	lyst:BEC rix: Air		
Reporting Units: ppmv		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
TPH Gasoline Range Organics by SW 8 Analyte	015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

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:	oject Manager: Ben J. Arguijo							Pı	rojec	ct Na	me:	EK	Qu	een	Pea	rce															
	Company Name	Basin Enviro	nmental Ser	vice Te	chnol	ogies, LLC											_		Р	roje	ct #:	200	8-11	3								
	Company Address:	P. O. Box 301	P. O. Box 301								Proj	ject	Loc:	Lea	Col	inty,	NM															
	City/State/Zip:	Lovington, N	M 88260				_													Ρ	O #:	PA/	4-J.	Heni	ry_							
	Telephone No:	(575)396-237	8				Fax No:		(57	5) 39	96-1 <u>-</u>	429					-	Repo	rt Fo	orma	it:	X	Star	darc	ł	E] tr	RP		ו 🗌	NPDE	ES
	Sampler Signature:	Daicotah	walk	/		<u></u>	e-mail:		bja	rguij	0@	oasi	nen	v.co	m					÷							_					-
(lab use	only)																		E			T	CLP:	Ana		For:	1	\Box			-	
ORDE	R#: 427278	Ś								Pre	serv	atio	1&∦	of C	onta	iners	N	<i>l</i> atrix	5B	Τ	Т	TOT	TAL:	Se	+-	X	┥				48 77	: î
LAB # (lab use only)	FIE	LD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	lce	HNO ₃	HCI	H ₂ SO ₄	NaOH	Na ₂ S ₂ U ₃ None	Other (Specify)	DW = Drinking Water St = Sludg	CW = Croundwater S=Soil/Soil NP - Non-Porable Specify Oth	TPH: 418.1 8015M 801	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg 5	Volatiles Semivolatiles	BTEX8021B/5030 or BTEX 826	RCI	Chloride 300			DIICH TAT (Pre-Schedule) 24	Standard TAT 4 DAY
001	SVE Di	ischarge-13				9/8/2011	0925		1			_			>	4		Air	×	:	1					x	\downarrow			┝─┤	\downarrow	×
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XENCO Laboratories

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Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title:	Sample Rece	ipt 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

ı

21	i reiogr	
Client: Plain	NJ	
Date/Time: 9/8/1	1 13:30	
Lab 1D #: 4272	78	
Initials:	<u> </u>	

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		
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 N	0.	Cooler 5 No.	
	C Ibs	°(C Ibs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:	
Regarding:			
Corrective Action Tak	en:		
			<u>,</u>
Check all that apply:	□ Cooling process has begun shortly after condition acceptable by NELAC 5.	sampling event and out of temperature 5.8.3.1.a.1.	
	□Initial and Backup Temperature confirm □Client understands and would like to pro	out of temperature conditions ceed 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



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 (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	А	10-10-11 10:30		429240-001


CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 429240

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Mon Oct-10-11 02:40 pm

Report Date: 14-OCT-11

Project Manager: Brent Barron II

	Lab Id:	429240-0	01			
Analysis Deguested	Field Id:	SVE Dischar	ge-14			
Analysis Kequesiea	Depth:					
	Matrix:	AIR				
	Sampled:	Oct-10-11 1	0:30			
BTEX by EPA 8021	Extracted:	Oct-11-11 1	5:03			
SUB: E871002	Analyzed:	Oct-11-11 1	5:03			
	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	Extracted:	Oct-11-11 1	5:03			
8015	Analyzed:	Oct-11-11 1	5:03			
SUB: E871002	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

Page 5 of 12



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

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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.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

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PQL Practical Quantitation Limit	MQL Method Quantitation Limit	LOQ Limit of Quantitation

DL Method Detection Limit

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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
(770) 449-8800	(770) 449-5477
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Vork Orders: 429240),		Project II	D: 2008-113									
Lab Batch #: 872278	Sample: 429240-001 / SMP	Batch	Batch: 1 Matrix: Air										
Units: ppmv	Date Analyzed: 10/11/11 15:03	SU	RROGATE RI	ECOVERY	STUDY								
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
4-Bromofluorobenzene	1 million of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	31.3	30.0	104	75-125								
Lab Batch #: 872280	Sample: 429240-001 / SMP	Batch	h: ¹ Matrix	Air									
Units: ppmv	Date Analyzed: 10/11/11 15:03	SU	RROGATE RI	ECOVERY	STUDY								
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
	Analytes			[D]									
4-Bromofluorobenzene		31.3	30.0	104	75-125								
Lab Batch #: 872278	Sample: 612656-1-BLK / B	LK Batcl	h: 1 Matrix	Air									
Units: ppmv	Date Analyzed: 10/11/11 14:41	SU	RROGATE RI	ECOVERY	STUDY								
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
	Analytes			[D]									
4-Bromofluorobenzene		28.8	30.0	96	75-125								
Lab Batch #: 872280	Sample: 612660-1-BLK / B	LK Batch	h: ¹ Matrix	Air									
Units: ppmv	Date Analyzed: 10/11/11 14:41	SU	RROGATE RI	ECOVERY	STUDY								
TPH Gasoline R	ange Organics by SW 8015 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 #: 872280	Sample: 612660-1-BKS / B	KS Batcl	h: 1 Matrix	Air									
Units: ppmv	Date Analyzed: 10/11/11 12:06	SU	RROGATE RI	ECOVERY	STUDY								
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
	Analytes			լոյ									
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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders: 429240	,		Project II	D: 2008-113						
Lab Batch #: 872278	Sample: 612656-1-BKS / B	KS Bate	h: ¹ Matrix:	Air						
Units: ppmv	Date Analyzed: 10/11/11 13:55	SURROGATE RECOVERY STUDY								
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
4-Bromofluorobenzene		29.6	30.0	99	75-125					
Lab Batch #: 872278	Sample: 429145-002 D / M	D Batc	h: ¹ Matrix:	Air						
Units: ppmv	Date Analyzed: 10/11/11 15:46	SURROGATE RECOVERY STUDY								
BTE	X 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 #: 872280	Sample: 429240-001 D / M	D Batc	h: 1 Matrix:	Air						
Units: ppmv	Date Analyzed: 10/11/11 17:59	SU	RROGATE RI	ECOVERY	STUDY					
TPH Gasoline R	ange Organics by SW 8015 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 429240			Pr	oject ID:		2008-113				
Lab Batch #: 872278	Sa	ample: 612656-								
Date Analyzed: 10/11/2011	Date Pre	pared: 10/11/20)11	Analyst:	BEC					
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	OVERY STUDY				
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags			
Analytes				[C]	[D]					
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 Date Analyzed: 10/11/2011	ample: 612660- pared: 10/11/20	1-BKS)11	Matrix: Analyst:	Air BEC						
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	STUDY			
TPH Gasoline Range Organics by SW 8 Analytes	8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags			
TPH-GRO		<100	500	563	113	71-130				

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.



TPH-GRO



U

Project Name: EK Queen Pearce

Work Order #: 429240

Lab Batch #: 872278			Project I	D: 2008-113	3				
Date Analyzed: 10/11/2011 15:46 Date Pro	epared: 10/11/2011	Ana	lyst:BEC						
QC- Sample ID: 429145-002 D B	Batch #: 1	atch #: 1 Matrix: Air							
Reporting Units: ppmv	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVE							
BTEX by EPA 8021 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
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 Pro	epared: 10/11/2011 Batch #• 1	Ana Mat	lyst:BEC						
Reporting Units: ppmv	SAMPLE /	/ SAMPLE	DUPLIC	ATE REC	OVERY				
TPH Gasoline Range Organics by SW 801 Analyte	5 Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				

<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

Xer	nco Labor	atories								126(Ode	00 V ssa	Ves , Te	CHA t I-20 exas	(<i>IN (</i>) Eas 7976	DF C st 55	cus	TOD	Y RI	ECC	ORD	AN	ID A	NAI Ph Fi	LΥS one ax∶	IS F : 43 43	REQ 2-56 2-56	UES 3-18 3-17	6 <i>T</i> 00 13				
	Project Manager:	Ben J. Arguijo									_						-	Pro	oject	Nar	ne:	EK (lue	en l	Pea	rce						
	Company Name	Basin Environme	ntal Servi	ice Te	chnol	ogies, LLC				. <u> </u>							-		Pr	ojec	t#:	2008	113									
	Company Address:	P.O. Box 301							. <u> </u>								-	P	roje	ct L	oc: _	Lea (our	ity, I	M							
	City/State/Zip:	Lovington, NM 88	3260			<u></u>										<u></u>	-			PC) #:_	PAA-	J. H	enry	<u></u>							
	Telephone No:	(575)396-2378					Fax No:	1	(575	5) 39	6-14	29		<u> </u>			. R	eport	For	mat	: [x s	tand	ard			TRF	P		NPC)ES	
	Sampler Signature	Dakotah	ward	<u> </u>			e-mail:	1	bjar	guij	o@ł	asi	nenv	.com	1	-		_	<u> </u>					Anal	vze	or:				- -7		
(lab use	only)		7																Þ			TCL	P: L:	Ţ		x				\Box	72 hrs	
ORDE	R#: 42924	0	_ <u>_</u>		r	r	,		_ļ	Pre	serv	atio T	n & #	of Co	ntair	ners T	Ma g a	trix	015B		Τ			3		8260					24, 48,	
AB # (lab use only)	FIE			3eginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO ₃	HCI	H ₂ SO ₄	NaUH Na,S,O,	None	Other (Specify)	DW = Drinking Water SL = Sluc CW	WP = VIOUIIUWACEI 3 = 30113	.TPH: 418.1 8015M 8	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	Metals: As Ao Ba Cd Cr Ph H	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX	RCI	Chloride 300			RUSH TAT (Pre-Schedule)	Standard TAT 4 DAY
001	SVE D	ischarge-14		<u> </u>		10/10/2011	ro;>0		1						x		A	.ir	x				Ţ	_	\downarrow	×				\vdash		×
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Special	Instructions:]]									<u> </u>	Ļ	L		L		Lab	orato	ory C	om	men	ts:	<u> </u>		$\overline{\sim}$	┸╼┸ ∖	L	
Relinqui Relinqui Relinqui	shed by: Stituth w AVL	11	Date //((// / Date	т / У т	ime 196 ime	Received by: Received by:										Da	ate ate		Tim	e	San VOC Lab Cus Cus San	ple (Cs Fri els or tody tody ple l by ca by ca	conta ee of seal: seal: land mple	ainer f Hea ntain s on s on L Del ar/Oli	rs Inf adsp er(s) cool cool ivere ent F Uf	tact? ace? aine aine er(s) ed Rep. PS	r(s)) ? DH	N∕f - 1)~Q~QAUE	> > > Lon) ar
Relinqui	ished by:		Date	Т	ime	Received by EL	LOT: UNAM	d		•					10	ار ا/د	ate 10/1	, 1	Tim 4:	• 4 <u>C</u>	Ten	ipera	ture	Gpo	n Re	ceip	it:	M	nk	>	°C	

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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

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

Phoenix, San Antonio, Tampa

Prelogin / Nonconformance Report - Sample Log-In

Client: P	ains		
Date/Time:	10/10/11	14:40	
Lab ID #:	129240		
Initials: A	<u>H</u>		

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	NA	
17. VOC sample have zero head space?	Yes	No		
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	o	Cooler 5 No.	
ibs CIMO°C ibs °C ibs °C	lbs	°c	bs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:	
Regarding:			<u> </u>
Corrective Action Tak	en:		
			• •
Check all that apply:	□ Cooling process has begun shortly after samplin condition acceptable by NELAC 5.5.8.3.1.a. □ Initial and Backup Temperature confirm out of tem	g event and out of temperature 1. mperature conditions	

 \Box 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 Tucson (EPA Lab code: AZ00989): Arizona (AZ0758)



07-DEC-11

STR ACCREDING

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	А	11-30-11 10:10		432430-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 432430

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Wed Nov-30-11 02:37 pm

Report Date: 07-DEC-11

Project Manager: Brent Barron II

	Lab Id:	432430-0	01			
Analysis Deguested	Field Id:	SVE Dischar	ge-15			
Analysis Kequesiea	Depth:					
	Matrix:	AIR				
	Sampled:	Nov-30-11	10:10			
BTEX by EPA 8021	Extracted:	Dec-03-11	16:37			
SUB: TX104704215	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	Extracted:	Dec-03-11	16:37			
8015	Analyzed:	Dec-03-11	16:37			
SUB: TX104/04215	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 NEL	AC Accreditation. ^ NELAC	or State program does not offer Accreditation at this time

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5757 NW 158th St, Miami Lakes, FL 33014
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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

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 [A] True [B] Recovery % R [D] Contribution 4-Bromofluorobenzene 32.3 30.0 108 75-12 Lab Batch #: 876238 Sample: 432430-001 / SMP Batch: 1 Matrix: Air Units: ppmv Date Analyzed: 12/03/11 16:37 SURROGATE RECOVERY STUDY Materix: Air Date Analyzed: 12/03/11 16:37 SURROGATE Recovery % R [D] Contribution BTEX by EPA 8021 Amount Found [A] True [B] Recovery % R [D] Contribution 4-Bromofluorobenzene 32.3 30.0 108 75-12 Lab Batch #: 876230 Sample: 614943-1-BLK / BLK Batch: 1 Matrix: Air Units: ppmv Date Analyzed: 12/03/11 15:49 SURROGATE Recovery % R [D] Contribut % R [D] TPH Gasoline Range Organics by SW 8015 Amount Found [A] True Amount [B] Recovery % R [D] Contribut % R [D] 4-Bromofluorobenzene 31.1 30.0 </th <th>Flags</th>	Flags										
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Units: ppmv Date Analyzed: 12/03/11 15:49 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount Found Amount True Amount Found (A) Contr Limit (A)											
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Analytes	Flags										
4-Bromofluorobenzene 31.1 30.0 104 75-12											
Lab Batch #: 876238 Sample: 614948-1-BKS / BKS Batch: 1 Matrix: Air											
Units: ppmv Date Analyzed: 12/03/11 13:48 SURROGATE RECOVERY STUDY	SURROGATE RECOVERY STUDY										
BTEX by EPA 8021 Amount Found [A] True Amount [B] Contr Recovery %R Analytes [B] %R %F											
4-Bromofluorobenzene 29.3 30.0 98 75.12	Flags										

* 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 / BAll 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 / B	KS Bate	h: ¹ Matrix	Air								
Units: ppmv	Date Analyzed: 12/03/11 15:01	SU	SURROGATE RECOVERY STUDY									
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
4-Bromofluorobenzene		29.3	30.0	98	75-125							
Lab Batch #: 876230	Sample: 432430-001 D / MI	4D Batch: 1 Matrix: Air										
Units: ppmv	Date Analyzed: 12/03/11 17:01	SURROGATE RECOVERY STUDY										
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
4-Bromofluorobenzene		27.6	30.0	92	75-125							
Lab Batch #: 876238	Sample: 432430-001 D / M	ID Batch: 1 Matrix: Air										
Units: ppmv	Date Analyzed: 12/03/11 17:01	SURROGATE RECOVERY STUDY										
ВТЕ	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 432430		Pr	2008-113								
Lab Batch #: 876238	Sample: 614948	-1-BKS									
Date Analyzed: 12/03/2011 Date 1	Prepared: 12/03/2	011	Analyst:	BEC							
Reporting Units: ppmv	Batch #: 1	BLANK /I	BLANK SPI	KE REC	ECOVERY STUDY						
BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags					
Analytes			[C]	[D]							
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: 12/03/2	repared: 12/03/2011 Analyst: BEC									
Reporting Units: ppmv	Batch #: 1	BLANK /H	BLANK SPI	KE REC	OVERY S	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	415	83	71-130						

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit



TPH-GRO



Project Name: EK Queen Pearce

Work Order #: 432430

Lab Batch #: 876238			Project I	D: 2008-113	3							
Date Analyzed: 12/03/2011 17:01 Date	ed: 12/03/2011	Ana	yst:BEC									
QC- Sample ID: 432430-001 D	n#: 1	Mat	rix: Air									
Reporting Units: ppmv		SAMPLE / SAMPLE DUPLICATE RECOVERY										
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
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 QC- Sample ID: 432430-001 D	e Prepar Batcl	red: 12/03/2011	Anal Mat	l yst: BEC rix: Air								
Reporting Units: ppmv		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY						
TPH Gasoline Range Organics by SW a Analyte	8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						

<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

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				wwi												Pr	oject	t Nar	ne:	EK	Que	en F	Pear	rce						_
	Company Name	Basin Environm	ental Serv	vice Te	chnolo	ogies, LLC										- 21			Pr	ojec	t #:_	2008	-113									
	Company Address: P. O. Box 301											I	Proj€	ect L	oc:_	Lea	Cou	nty, N	M		,					<u> </u>						
	City/State/Zip:	e/Zip: Lovington, NM 88260										PC) #:	PAA	-J. H	lenry	_	_														
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client:	Basin Env. / Plains
Date/Time:	11.3011 14:37
Lab ID # :	432430
Initials:	TB

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	NA	
4. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
6. Any missing / extra samples?	Yes	< <u>No</u> >		
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		m
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.	
	C Ibs	°C	lbs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:
Regarding:		
Corrective Action Taken:		······································
		· · · · · · · · · · · · · · · · · · ·
Check all that apply: □0	Cooling process has begun shortly after sa	npling 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

 \Box 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



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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)

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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 (AZ0758)



20-DEC-11

SUP ACCREONE

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	А	12-14-11 00:00		433351-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 433351

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Wed Dec-14-11 04:15 pm

Report Date: 20-DEC-11

Project Manager: Brent Barron II

	Lab Id:	433351-0	01			
Analysis Deguested	Field Id:	SVE Dischar	ge-16			
Analysis Kequesiea	Depth:					
	Matrix:	AIR				
	Sampled:	Dec-14-11 (00:00			
BTEX by EPA 8021	Extracted:	Dec-16-11	14:20			
SUB: TX104704215	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	Extracted:	Dec-16-11	14:20			
8015 SUD TV104704215	Analyzed:	Dec-16-11	14:20			
SUB: 1X104/04215	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.
- RPD exceeded lab control limits. F
- J The target analyte was positively identified below the quantiation 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 NEL	AC Accreditation. ^ NELAC	or State program does not offer Accreditation at this time

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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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Phone



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Vork Orders : 433351	,		Project II	D: 2008-113										
Lab Batch #: 877300	Sample: 433351-001 / SMP	Batch	n: ¹ Matrix	: Air										
Units: ppmv	Date Analyzed: 12/16/11 14:20	SUI	RROGATE RI	ECOVERY	STUDY									
TPH Gasoline R	ange Organics by SW 8015 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 #: 877303	Sample: 433351-001 / SMP	IP Batch: 1 Matrix: Air												
Units: ppmv	Date Analyzed: 12/16/11 14:20	SURROGATE RECOVERY STUDY												
ВТЕ	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
4 During flux up hanging	Analytes	25.0	20.0		75.105									
4-Bromolluorobenzene		27.9	30.0	93	75-125									
Lab Batch #: 877300	Sample: 615567-1-BLK / B	LK Batch	h: 1 Matrix	:Air										
Units: ppmv	Date Analyzed: 12/16/11 13:53	SU	RROGATE RI	ECOVERY	STUDY									
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
	Analytes			[D]										
4-Bromofluorobenzene		29.3	30.0	98	75-125									
Lab Batch #: 877303	Sample: 615574-1-BLK / B	BLK Batch: ¹ Matrix: Air												
Units: ppmv	Date Analyzed: 12/16/11 13:53	SU	RROGATE RI	ECOVERY	STUDY									
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
4-Bromofluorobenzene		29.3	30.0	98	75-125									
Lab Batch #: 877300	Sample: 615567-1-BKS / B	KS Batch	n: 1 Matrix	Air										
Units: ppmv	Date Analyzed: 12/16/11 11:38	SU	RROGATE RI	ECOVERY	STUDY									
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
	Analytes			[D]										
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 / BAll 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 / B	KS Batel	h: ¹ Matrix	Air								
Units: ppmv	Date Analyzed: 12/16/11 12:55	SU	RROGATE RI	ECOVERY	STUDY							
BTE	X 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 / M	ID Batch: 1 Matrix: Air										
Units: ppmv	Date Analyzed: 12/16/11 14:44	SURROGATE RECOVERY STUDY										
TPH Gasoline R	ange 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 / M	D Batcl	h: 1 Matrix	Air								
Units: ppmv	Date Analyzed: 12/16/11 14:44	SU	RROGATE RI	ECOVERY	STUDY							
ВТЕ	X 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 433351			Pro	2008-11						
Lab Batch #: 877303	Sa	mple: 615574-								
Date Analyzed: 12/16/2011 D	ate Prep	oared: 12/16/20)11	Analyst:	BEC					
Reporting Units: ppmv	Ba	tch #: 1	BLANK /BLANK SPIKE RECOVERY ST							
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags			
Analytes				[C]	[D]					
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	Sa	mple: 615567-	1-BKS	Matrix:	Air					
Date Analyzed: 12/16/2011 D	ate Prep	oared: 12/16/20)11	Analyst:	BEC					
Reporting Units: ppmv	Ba	tch #: 1	BLANK /	BLANK SPI	KE REC	OVERY S	TUDY			
TPH Gasoline Range Organics by SW 80 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags				
TPH-GRO	<100	500	388	78	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 #: 433351

Lab Batch #: 877303			Project I	D: 2008-113	3						
Date Analyzed: 12/16/2011 14:44 Date	Prepared: 12/16/201	1 Ana	Analyst: BEC								
QC- Sample ID: 433351-001 D	Batch #: 1	Ma	Matrix: Air								
Reporting Units: ppmv	SAMPLE	/ SAMPLE	DUPLIC	DUPLICATE RECOVE							
BTEX by EPA 8021 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
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 QC- Sample ID: 433351-001 D	Prepared: 12/16/201 Batch #: 1	1 Ana Ma	llyst:BEC trix: Air								
Reporting Units: ppmv	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY						
TPH Gasoline Range Organics by SW 8 Analyte	015 Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
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

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											Pr	oject	Nar	ne:	EK	Que	en P	ear	ce											
	Company Name	Basin Environ	mental Serv	vice Te	chnol	ogies, LLC									in .				Pr	ojec	t #:_	2008	-1 <u>13</u>									
	Company Address:	P. O. Box 301											-		-			I	Proje	ect L	oc: _	Lea	Coun	ty, N	M							
	City/State/Zip:	Lovington, NM	88260																	PC) #:_	PAA	- <u>Ј. Н</u>	enry								
	Telephone No:	(575)396-2378					Fax No:		(57	5) 39	6-14	29				<u> </u>	R	epoi	t Fo	rmat	: [X s	Stand	ard			TRF	۲P	['DES	;
	Sampler Signature:	Men	ul R	m	m		e-mail:		bjar	guij	o@t	asin	env.	com																	 1	1
(lab use	only)																		E			TC	.P:	Analy	ze F			T		Τ	s L	
ORDER	# 4332	51			e				ſ	Pre	serv	ation	8#0	of Cor	ntain	ers	M	atrix	-			TOT	۹L: م			X 0					48, 72	
AB # (lab use only)	FIEL		I	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO ₃	HCI	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW = Drinking Water SL = Sludg	GW = Groundwater S= Soil/Soil NP = Non-Potable Specify Othe	TPH: 418.1 8015M 8015	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (CI, SO4, Alkalinity)	SAR / ESP / CEC Metals: As An Ba Cd Cr Ph Hn S	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 826	RCI	Chloride 300			RUSH TAT (Pre-Schedule) 24,	Standard TAT 4 DAY
61	SVE Di	scharge-16				12/14/2011			1						X			Air	x							X			\square			×
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Special I	nstructions:			L	L					<u>I</u>						<u>]</u>	<u> </u>		<u> </u>	L.,	Lab Sar VO	orat nple Cs F	ory C Conta ree o	omn ainer: Hea	n ent s int dspa	s: act? ace?	└ <u></u>		 (₹	<u> </u>
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Relinquisl	ned by:		Date	Ti	me	Received by ELC	eived by ELOT: Date /2/14.						ite 1. [[1	Tim Q	e 15	Ten	Temperature Upon Receipt: Amb. °C														



XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Re	ceipt 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

	2 A Platas	
Client:	asin / IMIN'S	_
Date/Time:	12.14.11 16:15	
Lab ID # :	433351	
Initials:	AZ	

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?		No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No		
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?	Tes	No		
10. Sample matrix / properties agree with chain of custody?	Tes	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?		No		
16. Subcontract of sample(s)?		No	N/Ą	
17. VOC sample have zero head space?		No	(N/A)	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.		o.	Cooler 5 No.	
	°C Ibs	•	C Ibs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:			
Regarding:					
Corrective Action Taken:					
		······································			
Check all that apply:	□Cooling process has begun shortly after s	ampling 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

 \Box 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



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 Tucson (EPA Lab code: AZ00989): Arizona (AZ0758)



10-JAN-12

SUP ACCREDUES

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.

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. 434544 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 434544



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-17	А	01-05-12 11:40		434544-001


XENCO Laboratories

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: EK Queen Pearce



Project ID:2008-113Work 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.



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 434544

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Thu Jan-05-12 03:10 pm

Report Date: 10-JAN-12

Project Manager: Brent Barron II

	Lab Id:	434544-0	01			
Analysis Requested	Field Id:	SVE Dischar	ge-17			
	Depth:					
	Matrix:	AIR				
	Sampled:	Jan-05-12 1	1:40			
BTEX by EPA 8021	Extracted:	Jan-06-12 1	3:18			
SUB: TX104704215	Analyzed:	Jan-06-12 1	5:55			
	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	Extracted:	Jan-06-12 1	5:55			
8015 SUD: TV104704215	Analyzed:	Jan-06-12 1	5:55			
SUB: 1A104704215	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 NEL	AC Accreditation. ^ NELAC	or State program does not offer Accreditation at this time

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12600 West I-20 East, Odessa, TX 79765
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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

		Project I	D: 2008-113		
Sample: 434544-001 / SMP	Batch	n: ¹ Matrix	:Air		
Date Analyzed: 01/06/12 15:55	SURROGATE RECOVERY STUDY				
TPH Gasoline Range Organics by SW 8015			Recovery %R [D]	Control Limits %R	Flags
	34.4	30.0	115	75-125	
Sample: 434544-001 / SMP	Batch	n: ¹ Matrix	Air		
Date Analyzed: 01/06/12 15:55	SU	RROGATE R	ECOVERY	STUDY	
by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[0]		
	34.4	30.0	115	75-125	
Sample: 616309-1-BLK / B	LK Batch	n: 1 Matrix	:Air		
Date Analyzed: 01/06/12 13:56	SU	RROGATE R	ECOVERY	STUDY	
TPH Gasoline Range Organics by SW 8015		True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
	34.8	30.0	116	75-125	
Sample: 616311-1-BLK / B	LK Batch	n: 1 Matrix	:Air		
Date Analyzed: 01/06/12 13:56	SUI	RROGATE R	ECOVERY	STUDY	
by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	34.8	30.0	116	75-125	
Sample: 616311-1-BKS / B	KS Batch	n: 1 Matrix	:Air		
Date Analyzed: 01/06/12 12:14	SU	RROGATE R	ECOVERY	STUDY	
	A	True		Control	
by EPA 8021 Analytes	Found [A]	Amount [B]	Recovery %R [D]	Limits %R	Flags
	Sample: 434544-001 / SMP Date Analyzed: 01/06/12 15:55 nge Organics by SW 8015 Analytes Sample: 434544-001 / SMP Date Analyzed: 01/06/12 15:55 by EPA 8021 Analytes Sample: 616309-1-BLK / B Date Analyzed: 01/06/12 13:56 nge Organics by SW 8015 Analytes Sample: 616311-1-BLK / B Date Analyzed: 01/06/12 13:56 by EPA 8021 Analytes Sample: 616311-1-BLK / B Date Analyzed: 01/06/12 13:56	Sample: 434544-001 / SMPBatchDate Analyzed: 01/06/12 15:55SUnge Organics by SW 8015Amount Found [A]Analytes34.4Sample: 434544-001 / SMPBatchDate Analyzed: 01/06/12 15:55SUby EPA 8021Amount Found [A]Analytes34.4Sample: 616309-1-BLK / BLKBatchDate Analyzed: 01/06/12 13:56SUnge Organics by SW 8015Amount Found [A]Analytes34.8Sample: 616311-1-BLK / BLKBatchDate Analyzed: 01/06/12 13:56SUSumple: 616311-1-BLK / BLKBatchDate Analyzed: 01/06/12 13:56SUSample: 616311-1-BKS / BKSBatchDate Analyzed: 01/06/12 12:14SU	Sample: 434544-001 / SMP Batch: 1 Matrix Date Analyzed: 01/06/12 15:55 SURROGATE R nge Organics by SW 8015 Amount [A] True Amount [A] True Amount [B] Analytes 34.4 30.0 Sample: 434544-001 / SMP Batch: 1 Matrix Date Analyzed: 01/06/12 15:55 SURROGATE R Mount Image Amount Image Amount Sample: 434544-001 / SMP Batch: 1 Matrix Date Analyzed: 01/06/12 15:55 SURROGATE R Image Amount <	Project ID: 2008-113Sample: 434544-001 / SMPBatch:1Matrix: AirDate Analyzed: 01/06/12 15:55SURROGATE RECOVERY:age Organics by SW 8015Amount Found [A]True Amount [B]Recovery %R [D]Analytes34.430.0115Sample: 434544-001 / SMPBatch:1Matrix: AirDate Analyzed: 01/06/12 15:55SURROGATE RECOVERY 3Iby EPA 8021Amount Found [A]True (B]Recovery %R [D]Analytes1Matrix: AirDate Analyzed: 01/06/12 13:56SURROGATE RECOVERY 3Sample: 616309-1-BLK / BLK (A)Batch:1Matrix: AirDate Analyzed: 01/06/12 13:56SURROGATE RECOVERY 3Sample: 616311-1-BLK / BLK (A)Batch:1Matrix: AirDate Analyzed: 01/06/12 13:56SURROGATE RECOVERY 3Sample: 616311-1-BLK / BLK (A)Batch:1Matrix: AirDate Analyzed: 01/06/12 13:56SURROGATE RECOVERY 3Sample: 616311-1-BLK / BLK (A)Batch:1Matrix: AirDate Analyzed: 01/06/12 13:56SURROGATE RECOVERY 3Sample: 616311-1-BLK / BLK (A)Batch:1Matrix: AirDate Analyzed: 01/06/12 13:56SURROGATE RECOVERY 3Sample: 616311-1-BKS / BKS (A)Batch:1Matrix: AirDate Analyzed: 01/06/12 12:14SURROGATE RECOVERY 3	Project ID: 2008-113 Sample: 434544-001 / SMP Batch: 1 Matrix: Air Date Analyzed: 01/06/12 15:55 SURROGATE RECOVERY STUDY nge Organics by SW 8015 Amount Found [A] True [B] Recovery %R [D] Control Limits %R Analytes 34.4 30.0 115 75-125 Sample: 434544-001 / SMP Batch: 1 Matrix: Air Date Analyzed: 01/06/12 15:55 SURROGATE RECOVERY STUDY Control Limits Sample: 434544-001 / SMP Batch: 1 Matrix: Air Date Analyzed: 01/06/12 15:55 SURROGATE RECOVERY STUDY Control Limits Analytes Matrix: Air Recovery Control Limits Analytes 34.4 30.0 115 75-125 Sample: 616309-1-BLK / BLK Batch: 1 Matrix: Air Date Analyzed: 01/06/12 13:56 SURROGATE RECOVERY STUDY nge Organics by SW 8015 Amount Found [A] True Bill Recovery %R [D] Control Limits %R Analytes 34.8 30.0 116 75-125 Sample: 61631

* 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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 434544	,		Project II	D: 2008-113		
Lab Batch #: 878639	Sample: 616309-1-BKS / B	09-1-BKS / BKS Batch: 1 Matrix: Air				
Units: ppmv	Date Analyzed: 01/06/12 13:02	SURROGATE RECOVERY STUDY				
TPH Gasoline R	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 R	ange Organics by SW 8015 Analytes	AmountTrueControlFoundAmountRecoveryLimits[A][B]%R%R[D][D]%R		Flags		
4-Bromofluorobenzene		38.2	30.0	127	75-125	**
Lab Batch #: 878640	Sample: 434544-001 D / M	D Batc	h: 1 Matrix	Air		
Units: ppmv	Date Analyzed: 01/06/12 16:19	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X 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 / BAll 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	Sa	ample: 616311-	1-BKS	KS Matrix: Air				
Date Analyzed: 01/06/2012 D	ate Prej	pared: 01/06/20)12	Analyst:	BEC			
Reporting Units: ppmv	Ba	atch #: 1	BLANK /E	BLANK SPI	KE REC	COVERY S	STUDY	
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags	
Analytes				[C]	[D]			
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	Sa	mple: 616309-	1-BKS	Matrix:	Air			
Date Analyzed: 01/06/2012 D	ate Prej	pared: 01/06/20)12	Analyst: BEC				
Reporting Units: ppmv	Batch #: 1 BLANK /BLA				BLANK SPIKE RECOVERY STUDY			
TPH Gasoline Range Organics by SW 8	015	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags	
Analytes				[C]	[D]			
TPH-GRO		<100	500	373	75	71-130		

Blank Spike Recovery [D] = 100*[C]/[B]All results are based on MDL and validated for QC purposes.



TPH-GRO



Project Name: EK Queen Pearce

Work Order #: 434544

Lab Batch #: 878640				Project I	D: 2008-113	3
Date Analyzed: 01/06/2012 16:19 Date	Prepar	ed: 01/06/2012	2 Anal	yst:BEC		
QC- Sample ID: 434544-001 D	Batch	n#: 1	Mat	rix: Air		
Reporting Units: ppmv		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Anaryte		.1.00	.1.00	0	25	T
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 OC- Sample ID: 434544-001 D Batch #: 1 Matrix: Air						
Reporting Units: ppmv		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
TPH Gasoline Range Organics by SW 80 Analyte	015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

<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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

AH

Phone: 432-563-1800 12600 West I-20 East Fax: 432-563-1713 Odessa, Texas 79765 Project Name: EK Queen Pearce Project Manager: Ben J. Arguijo Project #: 2008-113 Company Name Basin Environmental Service Technologies, LLC Project Loc: Lea County, NM Company Address: P. O. Box 301 PO #: PAA-J. Henry City/State/Zip: Lovington, NM 88260 X Standard NPDES Report Format: Fax No: (575) 396-1429 Telephone No: (575)396-2378 Sampler Signature: e-mail: bjarguijo@basinenv.com Analyze For: TCLP: (lab use only) TOTAL: 2 х ORDER #: Preservation & # of Containers Matrix ģ 58 Se BTEX 80218/5030 or BTEX 8260 801 Metals: As Ag Ba Cd Cr Pb Hg S = Soil/So 1006 Specify Oth SL = Slud 434 544 (Pre-Schedule) Anions (CI, SO4, Alkalinity) Standard TAT 4 DAY ž 8015M Ŷ AB # (lab use only) Na, Beginning Depth GW = Groundwater of Containers DW = Drinking Water Time Sampled Date Sampled Non-Potable Ending Depth SAR / ESP / CEC Cations (Ca, Mg. TX 1005 Specify) 418.1 Semivolatiles TAT Chloride 300 ield Filtered Na₂S₂O₃ Volatiles HCI H₂SO₄ RUSH Fotal #. NaOH Other (HN0³ None Ηd Hd <u>e</u> RCI đ FIELD CODE 40 Х Х Х Х Air - 001 SVE Discharge-17 1/5/2011 1 Laboratory Comments: Special Instructions: $(\mathbf{\hat{y}})$ Sample Containers Intact? N VOCs Free of Headspace? N/A zzzzzz Date 1/1 Date Time Labels on container(s) Relinguished by: Time Received by: 310pm Custody seals on container(s) Pakaton W/V Custody seals on cooler(s) Date Time Sample Hand Delivered FedEx Lone Star Relinguished by: Date Time Received by: by Sampler/Client Rep. ? by Courier? UPS DHL Time Date Time Received by ELOT: Date Relinquished by: Temperature Upon Receipt: 5 3:10 112 mané



XENCO Laboratories

Phoenix, San Antonio, Tampa

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010

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

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains	
Date/Time: 1/5 (12 310	
Lab ID # :	
Initials: + H	

Sample Receipt Checklist						45/12	
1. Samples on ice?				Blue	Water	(\tilde{No})	
2. Shipping container in good condition	on?			Yes	No	None	
3. Custody seals intact on shipping co	ontainer (cooler)	and bottles	?	Yes	No	(N/A)	
4. Chain of Custody present?				(Yes)	No	<u> </u>	
5. Sample instructions complete on cl	nain of custody?	?		Yes	No		
6. Any missing / extra samples?				Yes	(No)		
7. Chain of custody signed when relin	quished / receiv	ved?		(Yes)	No		
8. Chain of custody agrees with samp	le label(s)?			Yes	No		
9. Container labels legible and intact?				(Yes)	No		
10. Sample matrix / properties agree v	vith chain of cus	stody?		Yes	No ·		
11. Samples in proper container / bott	ie?			Yes	No		
12. Samples properly preserved?				Yes	No	N/A	
13. Sample container intact?				Yes	No		
14. Sufficient sample amount for indic	ated test(s)?			Yes	No		
15. All samples received within suffic	ent hold time?			Yes	No		
16. Subcontract of sample(s)?					No	N/A	
17. VOC sample have zero head space?				Yes	No	(N/A)	
18. Cooler 1 No. Cooler 2 No.	Cool	ler 3 No.		Cooler 4 No	o.	Cooler 5 No.	
Ibs Amb °C Ibs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Co	nt	a	CI	::	
					_

Date/Time:_____

Regarding:

Xence Houston Corrective Action Taken: ûω

Contacted by:____

- 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



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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 Tucson (EPA Lab code: AZ00989): Arizona (AZ0758)



14-FEB-12

SUP ACCREDING

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	А	02-07-12 08:55		436510-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work Order Number:436510

Report Date: 14-FEB-12 Date Received: 02/07/2012

Sample receipt non conformances and comments: None

Sample receipt non conformances and comments per sample:

None



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 436510

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Tue Feb-07-12 04:05 pm

Report Date: 14-FEB-12

Project Manager: Brent Barron II

	Lab Id:	436510-0)01			
Analysis Paguastad	Field Id:	SVE Dischar	rge-18			
Analysis Kequesieu	Depth:					
	Matrix:	AIR				
	Sampled:	Feb-07-12	08:55			
BTEX by EPA 8021	Extracted:	Feb-10-12	15:18			
SUB: TX104704215	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	Extracted:	Feb-10-12	15:18			
8015 SUD: TV104704215	Analyzed:	Feb-10-12	17:22			
SUB: 1A104704215	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.

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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 NEL	AC Accreditation. ^ NELAC	or State program does not offer Accreditation at this time

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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

Vork Orders : 436510),		Project II	D: 2008-113							
Lab Batch #: 881214	Sample: 436510-001 / SMP	P Batch: 1 Matrix: Air									
Units: ppmv	Date Analyzed: 02/10/12 17:22	SU	RROGATE RI	ECOVERY	STUDY						
BTE	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
4-Bromofluorobenzene	Analytes	46.8	50.0	94	60-140						
Lah Datah # 881217	Source 436510 001 / SMP		. 1 Motrie	Air	00 110						
Lab Batch #: 001217	Date Analyzed: 02/10/12 17:22	SU	RROGATE RI	ECOVERY S	STUDY						
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control ery Limits Flags %R						
	Analytes			[D]							
4-Bromofluorobenzene		46.7	50.0	93	60-140						
Lab Batch #: 881214	Sample: 617777-1-BLK / B	LK Batcl	n: 1 Matrix	Air							
Units: ppmv	Date Analyzed: 02/10/12 15:24	SU	RROGATE RI	ECOVERY	STUDY						
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
4 Dromofluorohonzono	Analytes	16.6	50.0		60.140						
		40.0	50.0	93	00-140						
Lab Batch #: 881217	Sample: 617779-1-BLK / B	3LK Batch: 1 Matrix: Air									
TPH Gasoline R	Cange 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 / B	KS Batcl	n: 1 Matrix	Air	ı <u> </u>						
Units: ppmv	Date Analyzed: 02/10/12 13:41	SU	RROGATE RI	ECOVERY	STUDY						
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes										
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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 436510	,		Project II	D: 2008-113								
Lab Batch #: 881214	Sample: 617777-1-BKS / B	KS Bate	h: ¹ Matrix:	Air								
Units: ppmv	Date Analyzed: 02/10/12 14:39	SURROGATE RECOVERY STUDY										
BTE	X by EPA 8021 Analytes	Amount Found [A]	Control Limits %R	Flags								
4-Bromofluorobenzene		49.1	50.0	98	60-140							
Lab Batch #: 881214	Sample: 436510-001 D / M	D Batch: ¹ Matrix: Air										
Units: ppmv	Date Analyzed: 02/10/12 17:44	SURROGATE RECOVERY STUDY										
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
4-Bromofluorobenzene		48.6	60-140									
Lab Batch #: 881217	Sample: 436510-001 D / M	D Batc	h: 1 Matrix:	Air								
Units: ppmv	Date Analyzed: 02/10/12 17:44	SU	RROGATE RI	ECOVERY	STUDY							
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 436510		2008-113					
Lab Batch #: 881214	Sample: 617777-	1-BKS	Matrix:	Air			
Date Analyzed: 02/10/2012 Date	Prepared: 02/10/2	012	Analyst:	BEC			
Reporting Units: ppmv	Batch #: 1	BLANK /I	BLANK SPI	OVERY STUDY			
BTEX by EPA 8021	Blank Result	Spike Added [B]	Blank Spike Besult	Blank Spike %R	Control Limits Flag		
Analytes	[2*]		[C]	[D]			
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: 02/10/2	012	Analyst:	BEC			
Reporting Units: ppmv	Batch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	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	<24.5	122	92.5	76	60-140		

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit



TPH-GRO



Project Name: EK Queen Pearce

Work Order #: 436510

Lab Batch #: 881214				Project I	D: 2008-113	3				
Date Analyzed: 02/10/2012 17:44 Date	Prepar	ed: 02/10/2012	2 Ana	lyst:BEC						
QC- Sample ID: 436510-001 D	Batch	n#: 1	Matrix: Air							
Reporting Units: ppmv	SAMPLE / SAMPLE DUPLICATE RECO									
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
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 OC- Sample ID: 436510-001 D	Prepar Batcl	red: 02/10/2012	2 Ana Mat	lyst:BEC rix: Air						
Reporting Units: ppmv		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY				
TPH Gasoline Range Organics by SW 8 Analyte	3015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				

Spike Relative Difference RPD 200 * | (B-A)/(B+A) | All Results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit 2

35

37.5

36.6

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:	roject Manager: Ben J. Arguijo									-	Pr	oject	t Nar	ne:	EK	Que	en l	Pear	rce												
	Company Name	Basin Environmer	ntal Serv	ice Te	chnolo	ogies, LLC											_		Pr	ojec	t #:_	2008	-113									
	Company Address:	P. O. Box 301															-	I	Proje	ect L	oc:_	Lea	Cou	nty, M	M							
	City/State/Zip:	Lovington, NM 882	260														-			PC) #:_	PAA	-J. H	enry	_							
	Telephone No:	(575)396-2378					Fax No:		(57	5) 3	96-1 _/	429					-	Repor	t Fo	rmat	: [×,	Stand	lard			TRF	٩P	Γ		DES	i
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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-In

Client:	Basin Env	Plains
Date/Time:	2.7.12	12:40
Lab ID # :	4365	10
Initials:	BB/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?	Tes	No		
8. Chain of custody agrees with sample label(s)?	(Tes)	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Tes	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 N	0.	Cooler 5 No.	
	°C lbs	°(C Ibs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:
Regarding:		
Corrective Action Tak	en:	
Check all that apply:	□ Cooling process has begun shortly after sa condition acceptable by NELAC 5.5.8	ampling event and out of temperature

□ 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



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 Tucson (EPA Lab code: AZ00989): Arizona (AZ0758)



07-MAR-12

SUP ACCREDING

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	А	03-01-12 09:00		437980-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 437980

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Thu Mar-01-12 01:15 pm Report Date: 07-MAR-12

Project Manager: Brent Barron II

	Lab Id:	437980-00)1			
Analysis Deguested	Field Id:	SVE Discharge	e - 19			
Analysis Kequesied	Depth:					
	Matrix:	AIR				
	Sampled:	Mar-01-12 0	9:00			
BTEX by EPA 8021	Extracted:	Mar-02-12 1	1:00			
SUB: TX104704215	Analyzed:	Mar-02-12 1	3:03			
	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	Extracted:	Mar-02-12 1	1:00			
8015	Analyzed:	Mar-02-12 1	3:03			
SUB: 1X104/04215	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.
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- 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
- **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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LOQ Limit of Quantitation

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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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Lab Batch #: 882803 Sample: 437980-001 / SMP Batch: 1 Matrix: Air Units: ppmv Date Analyzet: 03/02/12 13/03 SURROGATE RECOVERY STUDY TPH Gasoline Range Organics by SW 8015 Amount [A] True [B] Maunit [B] Recovery % R Control Linits % R Flags 4-Bromofluorobenzene 47.3 50.0 95 60-140 Lab Batch #: 82817 Sample: 437980-001 / SMP Batch: 1 Matrix: Air Units: ppmv Date Analyzed: 03/02/12 13:03 SURROGATE Recovery [Dimits] Flags Matrix: Air Analytes [A] [B] Recovery % R Control % R Flags 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 Control [D] Linits % R Plags 4-Bromofluorobenzene 49.6 50.0 99 <th>Vork Orders: 437980</th> <th>),</th> <th></th> <th>Project II</th> <th>D: 2008-113</th> <th></th> <th></th>	Vork Orders: 437980),		Project II	D: 2008-113									
Units: ppmv Date Analyzed: $03/02/12$ 13:03 SURROGATE RECOVERY STUDY TPH Gasoline Range Organics by SW 8015 Amount [A] True [B] Recovery [b] Control [b] Flags 4-Bromofluorobenzene 47.3 50.0 95 60-140 1 Lab Batch #: 882817 Sample: 437980-001 / SMP Batch: 1 Matrix: Air 50.0 95 60-140 Lab Batch #: 882817 Sample: 03/02/12 13:03 SURROGATE RECOVERY STUDY 60-140 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Lab Batch #: 882803	Sample: 437980-001 / SMP	Batch	n: ¹ Matrix	: Air									
TPH Gasoline Range Organics by SW 8015 AnalytesAmount Found [B]True Amount [B]Recovery %R [D]Control Links %RFlags4-Bromofluorobenzene47.350.09560-140	Units: ppmv	Date Analyzed: 03/02/12 13:03	SUI	RROGATE RI	ECOVERYS	STUDY								
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 [A] True Amount [B] Recovery %R Control Limits %R Flags 4-Bromofluorobenzene 47.3 50.0 95 60-140 Easth #: Pate Analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed: Source and the pate analyzed:	TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
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 [A] True [B] Recovery % R Control Limits % R Flags 4-Bromofluorobenzene 47.3 50.0 95 60-140 Ender Control Limits Flags 4-Bromofluorobenzene 47.3 50.0 95 60-140 Ender Flags 4-Bromofluorobenzene 47.3 50.0 95 60-140 Ender Flags 4-Bromofluorobenzene 47.3 50.0 95 60-140 Ender Flags 4-Bromofluorobenzene 49.6 50.0 99 60-140 Ender Flags 4-Bromofluorobenzene 49.6 50.0 99 60-140 Ender Flags 4-Bromofluorobenzene 49.6 50.0 99 60-140 Ender Matrix: Air Units: ppmv Date Analyzed: 03/02/12 12:42 SURROGATE RECOVERY STUDY Control Limits Flags 4-Bromofluorobenzene 49.6 50.0	4-Bromofluorobenzene		47.3	50.0	95	60-140								
Units: ppmv Date Analyzed: 03/02/12 13:03 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] Amount [A] True Amount [B] Recovery %R Control Limits %R Flags 4-Bromofluorobenzene 47.3 50.0 95 60-140 Enditional mount [B] Plags 1 Matrix: Air Matrix: Air SURROGATE RECOVERY STUDY Flags 1 Date Analyzed: 03/02/12 12:42 SURROGATE Recovery WR Control Limits Flags 1 Matrix: Air Matrix: Air Summont [B] True Amount [B] Recovery %R Control Limits Flags 4-Bromofluorobenzene 49.6 50.0 99 60-140 Enditional Limits Flags 4-Bromofluorobenzene 49.6 50.0 99 60-140 Enditional Limits Flags Materix: ppmv Date Analyzed: 03/02/12 12:42 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount Found [A] True Amount [B] Matrix: Air Control Limits Flags 4-Bromofluorobenzene 49.6 50.0 99	Lab Batch #: 882817	Sample: 437980-001 / SMP	IP Batch: 1 Matrix:Air											
BTEX by EPA 8021 Analytes Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 4-Bromofluorobenzene 47.3 50.0 95 60-140 95 60-140 Lab Batch #: 882803 Sample: 618717-1-BLK / BLK Batch: 1 Matrix: Air 95 60-140 Units: ppmv Date Analyzed: 03/02/12 12:42 SURROGATE RECOVERY STUDY Control Limits Flags TPH Gasoline Range Organics by SW 8015 Amount [A] True Amount [B] Recovery %R Control Limits Flags 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 Control Limits %R 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 Lab Batch #: 882817 Sample: 618724-1-BKS / BKS Batch: 1 Matrix: Air Units: ppmv Date Analyzed: 03/02/12 11:35 SURROGATE RECOVERY STUDY	Units: ppmv	Date Analyzed: 03/02/12 13:03	SU	RROGATE RI	ECOVERYS	STUDY								
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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 Control Limits %R Flags 4-Bromofluorobenzene 49.6 50.0 99 60-140 Image: 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 Flags BTEX by EPA 8021 Amount [A] True Amount [B] Recovery %R Control Limits %R Flags 4-Bromofluorobenzene 49.6 50.0 99 60-140 Flags Lab Batch #: 882817 Sample: 618724-1-BKS / BKS Batch: 1 Matrix: Air Lab Batch #: 882817 Sample: 618724-1-BKS / BKS Batch: 1 Matrix: Air Units: ppmv Date Analyzed: 03/02/12 11:35 SURROGATE RECOVERY STUDY Ecovery % Control Limits %R Flags 4-Bromofluorobenzene 49.6 50.0 99 60-140 Ecovery % Flags 4-Bromofluorobenzene 49.6 50.0	Lab Batch #: 882803	Sample: 618717-1-BLK / B	LK Batch	n: 1 Matrix	:Air									
TPH Gasoline Range Organics by SW 8015Amount Found [A]True Amount [B]Recovery %R [D]Control Limits %R %R [D]4-Bromofluorobenzene49.650.09960-140Lab Batch #: 882817Sample: 618724-1-BLK / BLK Date Analyzed: 03/02/12 12:42Batch:1Matrix: AirUnits: ppmvDate Analyzed: 03/02/12 12:42SURROGATE RECOVERY STUDYBTEX by EPA 8021Amount Found [A]True (B]Recovery %R [D]Control Limits %R %R [D]4-Bromofluorobenzene49.650.09960-140Lab Batch #: 882817Sample: 618724-1-BKS / BKS AnalytesBatch:1Matrix: Air Mount [B]Flags %R %R [D]4-Bromofluorobenzene49.650.09960-140Lab Batch #: 882817Sample: 618724-1-BKS / BKS Date Analyzed: 03/02/12 11:35Batch:1Matrix: AirUnits: ppmvDate Analyzed: 03/02/12 11:35SURROGATE RECOVERY STUDYFlagsBTEX by EPA 8021Amount Found [A]True Amount [B]Recovery %R [D]Control Limits %R [D]BTEX by EPA 8021Amount Found [A]True Amount [B]Recovery %R [D]Control Limits %R [D]Analytes49.750.09960-140	Units: ppmv	Date Analyzed: 03/02/12 12:42	SU	RROGATE RI	ECOVERY	STUDY								
Analytes[D]4-Bromofluorobenzene49.650.09960-140Lab Batch #: 882817Sample: 618724-1-BLK / BLKBatch:1Matrix: AirUnits: ppmvDate Analyzed: 03/02/12 12:42SURROGATE RECOVERY STUDYBTEX by EPA 8021Amount Found [A]True [B]Recovery %R [D]Control Limits %R4-Bromofluorobenzene49.650.09960-140Lab Batch #: 882817Sample: 618724-1-BKS / BKS Matrix: AirBatch:1Matrix: AirUnits: ppmvDate Analyzed: 03/02/12 11:35SURROGATE RECOVERY STUDYFlagsBTEX by EPA 8021Amount Found [A]True Matrix: AirControl Limits %RFlagsBTEX by EPA 8021Amount Found [A]True Matrix: AirControl Limits %RFlagsBTEX by EPA 8021Amount Found [A]True Amount Found [B]Recovery %RControl Limits %RBTEX by EPA 8021Amount Found [A]True Amount Found [B]Recovery %RControl Limits %RAnalytes49.750.09060.140	TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
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 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] Control Matrix: Air Flags BTEX by EPA 8021 Amount Found [A] True Amount [A] Control Limits %R Flags Analytes 49.7 50.0 90 60.140 Flags		Analytes			[D]									
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 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 Found [A] Matrix: Air Supple: 618724-1-BKS / BKS BTEX by EPA 8021 Analyzed: 03/02/12 11:35 SURROGATE RECOVERY STUDY Flags Matrix: ppmv Date Analyzed: 03/02/12 11:35 SUROGATE Recovery MR Control Limits %R Flags Analytes Analytes Amount [A] True Amount [B] Recovery MR Control Limits %R Flags Analytes Analytes Amount [A] So (0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	4-Bromofluorobenzene		49.6	50.0	99	60-140								
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 4-Bromofluorobenzene 49.6 50.0 99 60-140	Lab Batch #: 882817	Sample: 618724-1-BLK / B	BLK Batch: 1 Matrix: Air											
BTEX by EPA 8021Amount Found [A]True Amount [B]Recovery %R [D]Control Limits %R %RFlags4-Bromofluorobenzene49.650.09960-140-Lab Batch #: 882817Sample: 618724-1-BKS / BKS Date Analyzed: 03/02/12 11:35Batch: 1Matrix: Air-BTEX by EPA 8021Amount Found [A]True Manount Found [B]Control Matrix: AirFlagsBTEX by EPA 8021Amount Found [A]True Amount [B]Control Matrix: AirFlagsAnalytes49.750.00060.140	Units: ppmv	Date Analyzed: 03/02/12 12:42	SU	RROGATE RI	ECOVERYS	STUDY								
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 4-Bromofluorobenzene 49.7 50.0 99 60.140	BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
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 4-Bromofluorobenzene 49.7 50.0 90. 60.140	4-Bromofluorobenzene		49.6	50.0	99	60-140								
Units: ppmv Date Analyzed: 03/02/12 11:35 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount Found [A] True Amount [B] Control V%R %R Flags Analytes 49.7 50.0 00 60.140	Lab Batch #: 882817	Sample: 618724-1-BKS / B	KS Batcł	n: ¹ Matrix	Air									
BTEX by EPA 8021Amount Found [A]True Amount [B]Control Limits %RFlagsAnalytes49.750.09060.140	Units: ppmv	Date Analyzed: 03/02/12 11:35	SURROGATE RECOVERY STUDY											
Analysis 40.7 50.0 90 60.140	BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
	4-Bromofluorobenzene	· · · · · · · · · · · · · · · · · · ·	49.7	50.0	00	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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 437980	,		Project II	D: 2008-113						
Lab Batch #: 882803	Sample: 618717-1-BKS / B	KS Bate	h: ¹ Matrix	: Air						
Units: ppmv	Date Analyzed: 03/02/12 11:57	SU	RROGATE R	ECOVERY	STUDY					
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
4-Bromofluorobenzene		55.7	50.0	111	60-140					
Lab Batch #: 882803	Sample: 437980-001 D / M	D Bate	h: ¹ Matrix	: Air						
Units: ppmv	Date Analyzed: 03/02/12 13:26	SURROGATE RECOVERY STUDY								
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
4-Bromofluorobenzene		50.9	50.0	102	60-140					
Lab Batch #: 882817	Sample: 437980-001 D / M	D Bate	h: 1 Matrix	: Air						
Units: ppmv	Date Analyzed: 03/02/12 13:26	SU	RROGATE RI	ECOVERY	STUDY					
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 437980		Pro	oject ID:		2008-113			
Lab Batch #: 882817	Sample: 618724	-1-BKS	Matrix:	Air				
Date Analyzed: 03/02/2012 Date	e Prepared: 03/02/2	012	Analyst:	BEC				
Reporting Units: ppmv	Batch #: 1	BLANK /F	BLANK SPI	KE REC	COVERY S	STUDY		
BTEX by EPA 8021	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags		
Analytes			[C]	[D]				
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	e Prepared: 03/02/2	012	Analyst:	BEC				
Reporting Units: ppmv	Batch #: 1	BLANK /E	BLANK SPI	KE REC	OVERY S	STUDY		
TPH Gasoline Range Organics by SW 801 Analytes	5 Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags		
TPH-GRO	<24.5	122	113	93	60-140			

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 437980

Lab Batch #: 882817				Project I	D: 2008-113	3		
Date Analyzed: 03/02/2012 13:26	Date Prepar	red: 03/02/2012	2 Ana	lyst:BEC				
QC- Sample ID: 437980-001 D	Batel	h #: 1	Ma	trix: Air				
Reporting Units: ppmv		SAMPLE / SAMPLE DUPLICATE RECO						
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag		
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 QC- Sample ID: 437980-001 D	Date Prepar Batel	red: 03/02/2012 h #: 1	2 Ana Ma	lyst: BEC trix: Air				
Reporting Units: ppmv		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY		
TPH Gasoline Range Organics b Analyte	y SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag		
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			<u> </u>												Pr	ojec	t Nai	ne:	EK	Que	en F	<u>'ear</u>	ce					كتوبيوس	-
	Company Name	Basin Environmental Se	ervice To	echnol	ogies, LLC													Pr	ojec	t #:_	2008	-113									—
	Company Address:	P. O. Box 301		<u></u>									_					Proje	ect L	oc:_	Lea	Cour	nty, N	IM_					<u></u>		
	City/State/Zip:	Lovington, NM 88260											_						PC) #: -	PAA	-J. H	enry	-							
	Telephone No:	(575)396-2378				Fax No:		(57	5) 39	96-14	29					R	еро	rt Fo	rmat	:	X	Stanc	lard			TRR	P		NP	DES	
	Sampler Signature:	Dakorah Wa	rt	, <u>.</u>		e-mail:		bjaı	guij	io@t	asir	nenv	.com																		
(lab use	only)																	E			TC	P:	Analy	/ze ⊢	or:			— —	П	hrs	
ORDE	x#: 43798	30							F	rese	vatio	n & #	of Con	tainen	s	Ma	atrix	В.	<u> </u>		тот	AL:	8	╀─	X 8					48, 72	
O LAB # (lab use only)	FIE SVE Di	LD CODE ischarge-19	Beginning Depth	Ending Depth	Date Sampled Date Sampled 3/1/2012	Time Sampled	Field Filtered	▲ Total #. of Containers	ice	HNO ₃	HCI	H ₂ SO ₄	NaOH Na ₂ S ₂ O ₃	X None	Other (Specify)	DW=Drinking Water SL=Sludge	IN GW = Groundwater S=Soil/Solid ND=Non-Dotable Snecity Other	X TPH: 418.1 8015M 8016	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR/ESP/CEC	Volatiles	Semivolatiles	X BTEX 80218/5030 or BTEX 826	RCI	Chloride 300			RUSH TAT (Pre-Schedule) 24,	X Standard TAT 4 DAY
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

HH 3/1 /2 Prelogin / Nonconformance Report - Sample Log-In

Client 37-P/	auns
Date/Time: 3/1/	12 13:15
Lab ID#:	137980
Initials: 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	NA	
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 N	0.	Cooler 5 No.	
ibs and °C ibs °C ibs	°C lbs	°(C lbs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:
Regarding:		
Corrective Action Tak	en:	
Check all that apply:	Cooling process has begun shortly aft condition acceptable by NELAC	r sampling event and out of temperature 5.5.8.3.1.a.1.

□ 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



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-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

SUP SCORE OF

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	А	04-12-12 08:30		440592-001


CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 440592

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Thu Apr-12-12 02:10 pm Report Date: 19-APR-12

Project Manager: Brent Barron II

	Lab Id:	440592-0)01			
Analysis Paguastad	Field Id:	SVE Dischar	:ge-20			
Analysis Kequesiea	Depth:					
	Matrix:	AIR				
	Sampled:	Apr-12-12 (08:30		 	
BTEX by EPA 8021	Extracted:	Apr-16-12	14:42			
SUB: TX104704215	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	Extracted:	Apr-17-12	14:08			
8015 SUD: TV104704215	Analyzed:	Apr-17-12	17:00			
SUB: 1X104/04215	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
- **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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 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
 (210) 509-3335

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders: 440592	,		Project II	D: 2008-113		
Lab Batch #: 886077	Sample: 440592-001 / SMP	Batch	n: ¹ Matrix	Air		
Units: ppmv	Date Analyzed: 04/16/12 18:38	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	Analytes	45.3	50.0	91	60-140	
Lab Batch #: 886046	Sample: 440592-001 / SMP	Batel	h. 1 Matrix	Air	00110	
Units: ppmv	Date Analyzed: 04/17/12 17:00	SU	RROGATE RI	ECOVERY S	STUDY	
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
4-Bromofluorobenzene		49.8	50.0	100	60-140	
Lab Batch #: 886077	Sample: 620713-1-BLK / B	LK Batcl	h: 1 Matrix	Air		
Units: ppmv	Date Analyzed: 04/16/12 17:27	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
4-Bromofluorobenzene		43.4	50.0	87	60-140	
Lab Batch #: 886046	Sample: 620697-1-BLK / B	LK Batcl	h: 1 Matrix	Air		
Units: ppmv	Date Analyzed: 04/17/12 14:58	SU	RROGATE RI	ECOVERY	STUDY	
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene		50.5	50.0	101	60-140	
Lab Batch #: 886077	Sample: 620713-1-BKS / B	KS Batcl	n: 1 Matrix	Air		
Units: ppmv	Date Analyzed: 04/16/12 16:15	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	711a1y 1C0	43.2	50.0	86	60-140	
		13.2	50.0		00110	

* 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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders: 440592	,		Project II	D: 2008-113		
Lab Batch #: 886046	Sample: 620697-1-BKS / B	KS Bate	h: ¹ Matrix:	Air		
Units: ppmv	Date Analyzed: 04/17/12 14:10	SU	RROGATE RI	ECOVERY	STUDY	
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			נען		
4-Bromofluorobenzene		50.0	50.0	100	60-140	
Lab Batch #: 886077	Sample: 440592-001 D / M	D Bate	h: ¹ Matrix:	Air		
Units: ppmv	Date Analyzed: 04/16/12 19:01	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
4-Bromofluorobenzene		43.4	50.0	87	60-140	
Lab Batch #: 886046	Sample: 440592-001 D / M	D Bate	h: 1 Matrix:	Air		
Units: ppmv	Date Analyzed: 04/17/12 17:24	SU	RROGATE RI	ECOVERY	STUDY	
TPH Gasoline R	ange Organics by SW 8015	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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 440592			Pro	oject ID:		2	008-113
Lab Batch #: 886077	Sa	ample: 620713-	1-BKS	Matrix:	Air		
Date Analyzed: 04/16/2012	Date Prej	pared: 04/16/20	012	Analyst:	BEC		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /B	BLANK SPI	KE REC	OVERY S	STUDY
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags
Analytes				[C]	[D]		
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	Sa	ample: 620697-	1-BKS	Matrix:	Air		
Date Analyzed: 04/17/2012	Date Pre	pared: 04/17/20	012	Analyst:	BEC		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /B	BLANK SPI	KE REC	COVERY S	STUDY
TPH Gasoline Range Organics by SW 8 Analytes	8015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
TPH-GRO		<24.5	122	120	98	60-140	

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 440592

Lab Batch #: 886077				Project I	D: 2008-113	3
Date Analyzed: 04/16/2012 19:01	Date Prepar	ed: 04/16/2012	e Ana	lyst:BEC		
QC- Sample ID: 440592-001 D	Batch	n#: 1	Mat	t rix: Air		
Reporting Units: ppmv		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 440592-001 D	Date Prepar Batcl	ed:04/17/2012	2 Ana Mat	lyst: BEC t rix: Air		
Reporting Units: ppmv		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
TPH Gasoline Range Organics by S Analyte	W 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

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	Company Address	P. O. Box 301											<u> </u>			Ρ	roje	ct Lo	c: <u>L</u>	.ea (Cour	ity, N	<u>1M</u>							
	City/State/Zip:	Lovington, NM 882	260															РО	#: <u>F</u>	AA	<u>.J. Н</u>	enry	, 							
	Telephone No:	(575)396-2378				Fax No:	<u>(</u>	(575)	396-1	429					Re	port	For	mat:		× s	tand	lard			TRF	RP		[] NI	PDE:	3
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ORDE	x#: 4409	592							Pres	ervatio	on & #	≠of Co	ntainers		Mat	rix	5B		Т		NL:	<u> </u>	+	× 39					, 48, 7	
AB # (lab use only)			coincing Death	nding Depth	Date Sampled	Time Sampled	ield Filtered	otal #. of Containers ce		TCI	H ₂ SO ₄	NaOH Na,S,O,	None ·	Other (Specify)	W≃Drinking Water SL=Studge 5W = Groundwater S=Soil/Solid	IP=Non-Potable Specify Other	PH: 418.1 8015M 801	PH: TX 1005 TX 1006	Cations (Ca, Mg. Na, K)	Anions (Cl, SO4, Alkalimity)	AR / ESP / CEC Addes: As As Ba Cd Cr Ph Ha	Volatiles	semivolatiles	3TEX 8021B/5030 or BTEX 82	ci	Chloride 300			RUSH TAT (Pre-Schedule) 24	Standard TAT 4 DAY
21	SVE D	ischarge-20	a		4/12/2012	7:30		<u>-</u>			-		x	Ť	o o Ai	r z	⊢ X				<u>^ 2</u>	<u>: ></u>	10	X	Ĕ.		_		Ť	X
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client:	Sesin / Plains	_
Date/Time:	4.12.12 14.10	
Lab ID # :	440592	
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	NA	
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?	Tes	No		
8. Chain of custody agrees with sample label(s)?	Tes	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?	Tes	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 N	0.	Cooler 5 No.	
ibs Guilo °C ibs °C ibs °C	c ibs	°(C Ibs	°C

Nonconformance Documentation

Contact:	Contacted by:	Date/Time:
Regarding:		
Corrective Action Tak	en:	
Check all that apply:	□ Cooling process has begun shortly after condition acceptable by NELAC 5	r sampling event and out of temperature .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 (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)



07-MAY-12

STR ACCREDING

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

> 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 441688



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge-21	А	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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 441688

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Wed May-02-12 02:06 pm Report Date: 07-MAY-12

Project Manager: Nicholas Straccione

	Lab Id:	441688-0	001			
Analysis Paguastad	Field Id:	SVE Discha	rge-21			
Analysis Kequesiea	Depth:					
	Matrix:	AIR				
	Sampled:	May-02-12	08:45			
BTEX by EPA 8021	Extracted:	May-03-12	11:58			
SUB: TX104704215	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	Extracted:	May-03-12	11:58			
8015	Analyzed:	May-03-12	18:58			
SUB: TX104/04215	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.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Ch Nul

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
- **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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Certified and approved by numerous States and Agencies.

LOQ Limit of Quantitation

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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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 441688	<u>,</u>		Project II	D: 2008-113							
Lab Batch #: 887204	Sample: 441688-001 / SMP	Batch	h: 1 Matrix:	Air							
Units: ppmv	Date Analyzed: 05/03/12 18:58	SURRUGATE RECOVERY STUDY									
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes	10.0									
4-Bromofluorobenzene		48.9	50.0	98	60-140						
Lab Batch #: 887211	Sample: 441688-001 / SMP	Batch	n: ¹ Matrix	:Air							
Units: ppmv	Date Analyzed: 05/03/12 18:58	SUI	RROGATE RI	ECOVERY	STUDY						
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
4-Bromofluorobenzene		48.9	50.0	98	60-140						
Lab Batch #: 887204	Sample: 621413-1-BLK / B	LK Batch	h: 1 Matrix	: Air							
Units: ppmv	Date Analyzed: 05/03/12 13:25	SUI	RROGATE RI	ECOVERY	STUDY						
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
4-Bromofluorobenzene		47.9	50.0	96	60-140						
Lab Batch #: 887211	Sample: 621427-1-BLK / B	LK Batch	n: ¹ Matrix:	: Air							
Units: ppmv	Date Analyzed: 05/03/12 13:25	SUI	RROGATE RI	ECOVERY	STUDY						
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
4-Bromofluorobenzene		47.9	50.0	96	60-140						
Lab Batch #: 887204	Sample: 621413-1-BKS / B	KS Batch	n: 1 Matrix	Air							
Units: ppmv	Date Analyzed: 05/03/12 11:33	SU	RROGATE RI	ECOVERY	STUDY						
ВТЕ	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	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 / BAll 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 / B	KS Bate	h: ¹ Matrix:	Air						
Units: ppmv	Date Analyzed: 05/03/12 12:40	SU	RROGATE RI	ECOVERY S	STUDY					
TPH Gasoline Ra	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes			[D]						
4-Bromofluorobenzene		51.3	50.0	103	60-140					
Lab Batch #: 887204	Sample: 441712-001 D / M	D Batc	h: ¹ Matrix:	Air						
Units: ppmv	Date Analyzed: 05/03/12 15:16	SURROGATE RECOVERY STUDY								
BTE	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes			[D]						
4-Bromofluorobenzene		50.6	50.0	101	60-140					
Lab Batch #: 887211	Sample: 441601-001 D / M	D Batc	h: 1 Matrix:	Air						
Units: ppmv	Date Analyzed: 05/03/12 18:13	SU	RROGATE RI	ECOVERY S	STUDY					
TPH Gasoline Ra	ange 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 441688			Pr	oject ID:		20	008-113
Lab Batch #: 887204	Se	ample: 621413-	1-BKS	Matrix:	Air		
Date Analyzed: 05/03/2012 D	ate Prej	pared: 05/03/20)12	Analyst:	BEC		
Reporting Units: ppmv	Ba	.tch #: 1	BLANK /I	BLANK SPI	KE REC	OVERY S	STUDY
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags
Analytes	ļ			[C]	[D]		
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	S	ample: 621427-	1-BKS	Matrix:	Air		
Date Analyzed: 05/03/2012 D	ate Prej	pared: 05/03/20)12	Analyst:	BEC		
Reporting Units: ppmv	Ba	.tch #: 1	BLANK /J	BLANK SPI	KE REC	OVERY S	STUDY
TPH Gasoline Range Organics by SW 80 Analytes	015	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
TPH-GRO		<24.5	122	113	93	60-140	

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.



TPH-GRO



Project Name: EK Queen Pearce

Work Order #: 441688

Lab Batch #: 887204			Project I	D: 2008-113	3
Date Analyzed: 05/03/2012 15:16 Date Pre	epared: 05/03/2012	2 Ana	lyst:BEC		
QC- Sample ID: 441712-001 D B	atch #: 1	Mat	rix: Air		
Reporting Units: ppmv	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 Pre QC- Sample ID: 441601-001 D B	epared: 05/03/2012 atch #: 1	2 Anal Mat	lyst:BEC rix: Air		
Reporting Units: ppmv	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
TPH Gasoline Range Organics by SW 8015 Analyte	5 Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

3090

Spike Relative Difference RPD 200 * | (B-A)/(B+A) | All Results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit 7

35

3300

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. Argu	ijo										<u> </u>				-	P	rojec	t Na	me:	EK	Qu	een	n Pe	arc	:e					
		Company Name Basin Envir	onmental Ser	vice Te	chnol	ogies, LLC							-				-		P	roje	ct #:	200	8-11	3								
		Company Address: P. O. Box 30	01			······································	· ·····												Proj	ect l	Loc:	Lea	i Col	unty	/, NI	<u>v</u>				<u> </u>		
		City/State/Zip: Lovington,	NM 88260												,					P	O #:	PA	A-J.	Hen	ıry	_						
		Telephone No: (575)396-23	78			······································	Fax No:		<u>(57</u>	'5) 3	96-1	42 9			· · · · · · · · · · · · · · · · · · ·			Repo	rt Fo	rma	t:	X	Star	ıdarı	ď	· · ·	Г	RRP	, · · · · ·	1	NPDE	ES
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Page 11 of 1	AB # (lab use only)	FIELD CODE	· · · · · · · · · · · · · · · · · · ·	Seginning Depth	inding Depth	Date Sampled	Time Sampled	ield Filtered	otal #. of Containers	20	HNO ₃	HG	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	Other (Specify)	DW=Drinking Water SL=Sludge	GW = Groundwater S≃Soit/Solid	TPH: 418.1 8015M 8015	TPH: TX 1005 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 8021B/5030 or BTEX 8260	RCI Chlorida 300			DIICU TAT /m. C.hedula) 24	Standard TAT 4 DAY
2	0	SVE Discharge-21		ш.	<u> </u>	5/2/2012	12:45		1					-†	──────────────────	x	Ť	Air	X				Ť	-			x			\square		X
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XENCO Laboratories Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: P	ains	
Date/Time:	512/12 14:00	
Lab ID # :	441688	
Initials:	<u>H </u>	

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	(NA)	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	•	Cooler 5 No.	
Ibs MD°C Ibs °C Ibs	°C lbs	0	C Ibs	°C
Nonconformance Doc	cumentation			
Contact:Contacted by:		Date/Time:		

Corrective Action Taken:

+ . .

Regarding:

•	
Check all that apply:	Cooling process has begun shortly after sampling event and out of temperature
	condition acceptable by NELAC 5.5.8.3.1.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

SALAN ACCREDING

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

> 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 444342



PLAINS ALL AMERICAN EH&S, Midland, TX

EK Queen Pearce

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SVE Discharge 22	А	06-20-12 10:00		444342-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S Project Name: EK Queen Pearce



Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Jason Henry

Certificate of Analysis Summary 444342

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Wed Jun-20-12 02:00 pm

Report Date: 28-JUN-12

Project Manager: Nicholas Straccione

	Lab Id:	444342-0	001			
Analysis Deguested	Field Id:	SVE Dischar	rge 22			
Analysis Kequesiea	Depth:					
	Matrix:	AIR				
	Sampled:	Jun-20-12	10:00			
BTEX by EPA 8021	Extracted:	Jun-24-12	16:46			
SUB: TX104704215	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	Extracted:	Jun-24-12	16:46			
8015 SUD TV104704215	Analyzed:	Jun-24-12	19:55			
SUB: 1X104/04215	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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Ch Nul

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
- **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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LOQ Limit of Quantitation

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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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

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Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 444342),		Project II	D: 2008-113		
Lab Batch #: 891104	Sample: 444342-001 / SMP	Batel	h: 1 Matrix:	Air		
Units: ppmv	Date Analyzed: 06/24/12 19:55	SU.	RROGATE RI	ECOVERY	STUDY	
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	•	45.8	50.0	92	60-140	
Lab Batch #: 891107	Sample: 444342-001 / SMP	Batcl	h: ¹ Matrix:	Air		
Units: ppmv	Date Analyzed: 06/24/12 19:55	SU	RROGATE RI	ECOVERY	STUDY	
BTE	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
4-Bromofluorobenzene		56.5	50.0	113	60-140	
Lab Batch #: 891104	Sample: 623842-1-BLK / B	LK Batel	h: 1 Matrix:	Air		
Units: ppmv	Date Analyzed: 06/24/12 16:43	SU	RROGATE RI	ECOVERY	STUDY	
TPH Gasoline R	ange Organics by SW 8015	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
4-Bromofluorobenzene		43.0	50.0	86	60-140	
Lab Batch #: 891107	Sample: 623844-1-BLK / B	LK Batel	h: 1 Matrix:	Air		
Units: ppmv	Date Analyzed: 06/24/12 16:43	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021 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 #: 891107	Sample: 623844-1-BKS / B	KS Batcl	h: 1 Matrix:	Air		
Units: ppmv	Date Analyzed: 06/24/12 14:10	SU	RROGATE RI	ECOVERY	STUDY	
BTE	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene		54.4	50.0	109	60-140	
			2 3.0			

* 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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 444342	,		Project II	D: 2008-113								
Lab Batch #: 891104	Sample: 623842-1-BKS / B	KS Batch: 1 Matrix: Air										
Units: ppmv	Date Analyzed: 06/24/12 14:33	SURROGATE RECOVERY STUDY										
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	Recovery %R [D]	Control Limits %R	Flags							
4-Bromofluorobenzene		42.3	50.0	85	60-140							
Lab Batch #: 891104	Sample: 444252-002 D / M	D Batch: 1 Matrix: Air										
Units: ppmv	Date Analyzed: 06/24/12 17:42	SURROGATE RECOVERY STUDY										
TPH Gasoline R	ange Organics by SW 8015 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
4-Bromofluorobenzene		41.8	50.0	84	60-140							
Lab Batch #: 891107	Sample: 444252-002 D / M	D Bate	h: 1 Matrix	t rix: Air								
Units: ppmv	Date Analyzed: 06/24/12 17:42	SU	RROGATE RI	ECOVERY	STUDY							
BTE	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 444342		2008-113								
Lab Batch #: 891107	S	ample: 623844-								
Date Analyzed: 06/24/2012	Date Pre	pared: 06/24/20)12	Analyst:	ROL					
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	STUDY			
BTEX by EPA 8021		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags			
Analytes				[C]	[D]					
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	S	ample: 623842-	1-BKS	Matrix:	Air					
Date Analyzed: 06/24/2012	Date Pre	epared: 06/24/2012 Analyst: ROL								
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	STUDY			
TPH Gasoline Range Organics by SW	V 8015	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags			
Analytes				[C]	[D]					
TPH-GRO		<24.5	122	130	107	60-140				

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 444342

Lab Batch #: 891107				Project I	D: 2008-113	3
Date Analyzed: 06/24/2012 17:42	Date Prepa	ed: 06/24/2012	2 Ana	lyst:ROL		
QC- Sample ID: 444252-002 D	Bate	h#: 1	Ma	trix: Air		
Reporting Units: ppmv		SAMPLE	ATE REC	OVERY		
BTEX by EPA 8021 Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 444252-002 D	Date Prepar Bate	red:06/24/2012 h #: 1	2 Ana Ma	l yst: ROL trix: Air		
Reporting Units: ppmv		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
TPH Gasoline Range Organics b Analyte	y SW 8015	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

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Page 11 of 12

Final 1.000

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															Р	rojec	t Na	me:	EK	Qu	een	Pea	rce						
	Company Name Basin Environmental Service Technologies, LLC									P	rojec	:t #:	200	8-11	3																
	Company Address	iny Address: P. O. Box 301								Project Loc: Lea County, NM																					
	City/State/Zip:	Lovington, NM 88260																	P	D #:	PAA	\-J.	Henr	у							
	Telephone No:	(575)396-2378	Δ			Fax No:		(57	75) 3	396- [,]	1429					_	Repo	rt Fo	rma	t:	X	Stan	dard			TRF	RP	[DE	3
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ORDEF	2#: 4443	41								Pres	ervat	ion &	# of (Contain	ers		Matrix	15B	Γ				s.	+	8	11				48,	
AB# (lab use only)	FIE	ELD CODE	3eginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	otal #. of Containers	Ice	HNO ₃	HCI	H ₂ SO4	NaOH	Na ₂ S ₂ O ₃	Norie Other (Snecifv)	OW=Drinking Water SL=Sludge	SW = Groundwater S=Soll/Solid uP=Nnn-Potable Snerity Other	TPH: 418.1 8015M 80	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 82	RCI	Chloride 300			RUSH TAT (Pre-Schedule) 24,	Standard TAT 4 DAY
	SVE D)ischarge-22	<u> </u>	<u> </u>	6/20/2012	1000			1		1				x		Air	X		Ŭ	Ì			1	Tx	Ħ	Ť			F	x
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XENCO Laboratories Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In-

client Basin	1 Plains
Date/Time:	20.12 14:00
Lab ID # :	444342
Initials:	FE

Sample Receipt Checklist

		and the second second second second second second			and the second second second second second second second second second second second second second second second
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?	·	(Tes)	No		
5. Sample instructions complete on chain of cu	stody?	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?	· .	Tes	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?		Tes	No		
14. Sufficient sample amount for indicated test	(s)?	Tes	No		
15. All samples received within sufficient hold	time?	Yes	No		
16. Subcontract of sample(s)?		Nes	No	N/A	
17. VOC sample have zero head space?		- Yes	No	(N/A)	
18. Cooler 1 No. Cooler 2 No.	Cooier 3 No.	Cooier 4 No).	Cooler 5 No.	
	C ibs	°C lbs	0		°C

Nonconformance Documentation

Contact		Contacted by: Date/Time:	
Regarding:			-
Corrective A	ction Taken		· .
	·······	•	
			<u> </u>
Check all tha	itappiy: [[Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1. Unitial and Backup Temperature confirm out of temperature conditions Client understands and would like to proceed with analysis	

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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

PILA Testing to the pure Life

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	А	10-15-12 10:45		450830-001






Project ID:2008-113Work 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

Project Location: Lea County,NM

Contact: Ben Arguijjo

Certificate of Analysis Summary 450830

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Tue Oct-16-12 09:00 am

Report Date: 19-OCT-12

Project Manager: Nicholas Straccione

	Lab Id:	450830-00	1			
Analysis Paguastad	Field Id:	SVE Discharge	e-23			
Analysis Kequestea	Depth:					
	Matrix:	AIR				
	Sampled:	Oct-15-12 10):45			
BTEX-MTBE by EPA 8021 Mod.	Extracted:	Oct-17-12 14	4:10			
	Analyzed:	Oct-17-12 18	3:26			
	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	4:10			
	Analyzed:	Oct-17-12 18	3:26			
	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

Nul

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
- **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

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

Certified and approved by numerous States and Agencies.

LOQ Limit of Quantitation

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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	

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders: 450830),		Project II	D: 2008-113							
Lab Batch #: 899051	Sample: 450830-001 / SMP	Batch	h: 1 Matrix:	Air							
Units: ppmv	Date Analyzed: 10/17/12 18:26	SURRUGATE RECOVERY STUDY									
BTEX-MT	BE by EPA 8021 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
4 Promofluorobonzono	Analytes	50.2	50.0	100	60.140						
		30.2	30.0	100	00-140						
Lab Batch #: 899054	Sample: 450830-001 / SMP	Batch	h: ¹ Matrix:	Air							
Units: ppmv	Date Analyzed: 10/17/12 18:26	50.	KRUGATE KI								
TPH GRO	D by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes										
4-Bromofluorobenzene		52.2	50.0	104	60-140						
Lab Batch #: 899051	Sample: 628757-1-BLK / B	LK Batcl	h: 1 Matrix:	Air							
Units: ppmv	Date Analyzed: 10/17/12 14:25	SU	RROGATE RI	ECOVERY	STUDY						
BTEX-MT	BE by EPA 8021 Mod.	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
4-Bromofluorobenzene		51.1	50.0	102	60-140						
Lab Batch #: 899054	Sample: 628759-1-BLK / B	LK Batch	h: ¹ Matrix:	Air							
Units: ppmv	Date Analyzed: 10/17/12 14:25	SU	RROGATE RI	ECOVERY	STUDY						
TPH GRO	D 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 / B	KS Batcl	h: 1 Matrix:	Air							
Units: ppmv	Date Analyzed: 10/17/12 11:33	SU	RROGATE RI	ECOVERY	STUDY						
TPH GRO	D by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes										
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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders: 450830	,		Project II	D: 2008-113						
Lab Batch #: 899051	Sample: 628757-1-BKS / B	KS Bate	h: ¹ Matrix	: Air						
Units: ppmv	Date Analyzed: 10/17/12 12:30	SU	RROGATE RI	ECOVERY	STUDY					
BTEX-MT	BE by EPA 8021 Mod. Analytes	Amount Found [A]	AmountTrueOFoundAmountRecovery[A][B]%R[D][D]							
4-Bromofluorobenzene		51.0	50.0	102	60-140					
Lab Batch #: 899051	Sample: 450830-001 D / M	D Batc	h: 1 Matrix	: Air						
Units: ppmv	Date Analyzed: 10/17/12 18:49	SURROGATE RECOVERY STUDY								
BTEX-MT	BE 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 / M	D Batc	h: 1 Matrix	: Air						
Units: ppmv	Date Analyzed: 10/17/12 18:49	SU	RROGATE RI	ECOVERY	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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 450830			Pr	oject ID:		2	008-113
Lab Batch #: 899051	Sa	ample: 628757-	1-BKS	Matrix:	Air		
Date Analyzed: 10/17/2012	Date Pre	pared: 10/17/20)12	Analyst:	MCH		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	STUDY
BTEX-MTBE by EPA 8021 Mod	l .	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags
Analytes				[C]	[D]		
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	Sa	ample: 628759-	1-BKS	Matrix:	Air		
Date Analyzed: 10/17/2012	Date Pre	pared: 10/17/20)12	Analyst:	MCH		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	STUDY
TPH GRO by EPA 8015 Mod. Analytes		Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
TPH-GRO		<24.5	122	122	100	60-140	

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 450830

Lab Batch #: 899051			Project I	D: 2008-113	3
Date Analyzed: 10/17/2012 18:49 Date	e Prepared: 10/17/201	2 Ana	alyst:MCH		
QC- Sample ID: 450830-001 D	Batch #: 1	Ma	trix: Air		
Reporting Units: ppmv	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX-MTBE by EPA 8021 Mod. Analyte	Parent Sample Result [A]	e Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 450830-001 D	e Prepared: 10/17/201 Batch #: 1	2 Ana Ma	alyst:MCH .trix: Air		
Reporting Units: ppmv	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
TPH GRO by EPA 8015 Mod. Analyte	Parent Sample Result [A]	e Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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=++

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													,		Pro	ject	Nan	ne: I	EK (Que	en	Pea	rce						_
	Company Name	Basin Environmental Ser	vice T	echnol	ogies, LLC					_								Pre	ojeci	#: _	2008	-113									
	Company Address:	P. O. Box 301															Ρ	roje	ct L	oc: <u>I</u>	.ea (Cour	nty, I	M							
	City/State/Zip:	Lovington, NM 88260																	РО	#: <u>F</u>	AA	-J. Н	lenry	<u>,</u>							
	Telephone No:	(575)396-2378	·			Fax No:		<u>(57</u>	5) 39	<u>)6-14</u>	29					R	eport	For	mat	[x s	itanc	lard			TRI	RP] NP	DES	
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As Ay ba cu ol ru ng o tiles</td><td>livolatiles</td><td>X 8021B/5030 or BTEX 826</td><td></td><td>nide 300</td><td></td><td></td><td>SH TAT (Pre-Schedule) 24, 4</td><td>NGARG IAI 4 UAT</td></tr><tr><td>B</td><td>FIEL</td><td></td><td>Beg</td><td>End</td><td>Da</td><td>ie I</td><td>Field</td><td>Total</td><td><u>5</u></td><td>Ť</td><td>P</td><td></td><td>Na₂</td><td>Nor</td><td>oth</td><td>=MG</td><td>NP=</td><td>НдТ</td><td>НДТ</td><td>Cati</td><td>Anio</td><td>APC A</td><td>Vola</td><td>Sem</td><td>BTE</td><td>ц Ц</td><td>臣</td><td>_</td><td>+</td><td>RUS Sa</td><td></td></tr><tr><td></td><td>SVE Di</td><td>scharge-23</td><td> </td><td></td><td>10.15.12</td><td>and the</td><td></td><td>1</td><td></td><td></td><td>+</td><td>+</td><td>-</td><td>X</td><td></td><td>A</td><td>ir</td><td>X</td><td></td><td>+</td><td>+</td><td>+</td><td></td><td>-</td><td>×</td><td>\vdash</td><td>┝┼</td><td>-</td><td>+</td><td> '</td><td>쐭</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td> </td><td>10:45</td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>+</td><td>+</td><td></td><td></td><td></td><td>_</td><td></td><td></td><td>╉</td><td>+</td><td></td><td>╋</td><td>+-</td><td>┝─┤</td><td>┝╂</td><td></td><td>+</td><td>┝┼╴</td><td>\neg</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td><td>+</td><td>╉</td><td></td><td>\square</td><td></td><td></td><td></td><td></td><td></td><td>╉</td><td>+</td><td>╉</td><td>╈</td><td>+</td><td>+-</td><td>┝┤</td><td>\vdash</td><td>+</td><td></td><td>\vdash</td><td>4</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>\top</td><td></td><td>\square</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td>+</td><td>┢┼╴</td><td>٦</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>\Box</td><td></td><td></td><td>\Box</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>L</td><td></td><td></td><td></td><td></td><td>\perp</td><td>\perp</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>\square</td><td></td><td></td><td>\square</td><td></td></tr><tr><td></td><td></td><td></td><td>ļ</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td>-</td><td>+</td><td></td><td>+</td><td></td><td></td><td>\vdash</td><td></td><td>╄</td><td>┢┼┼</td><td>4</td></tr><tr><td>Special</td><td></td><td>· · · · · · · · · · · · · · · · · · ·</td><td>Ι.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Labo</td><td>orato</td><td></td><td>Comi</td><td>neni</td><td></td><td>Ļ</td><td>Ļ</td><td></td><td></td><td></td><td>_</td></tr><tr><td>Bolinguio</td><td></td><td>Date</td><td><u>т</u></td><td>me</td><td>Received Av.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td>-<u></u></td><td>Da</td><td>te</td><td></td><td>Time</td><td></td><td>Sam VOC</td><td>ple (s Fr</td><td>Cont ee o</td><td>ainei f Hea</td><td>s Int adsp</td><td>act? ace?</td><td>) }</td><td></td><td>(Y</td><td>2</td><td>N N</td><td></td></tr><tr><td>Relinquis</td><td>hed by:</td><td>Joint 10 15.12 Date</td><td>/<i>Z</i></td><td>' ~~ me</td><td>Received by:</td><td>Butt</td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td>5</td><td></td><td></td><td>26</td><td>)D Time</td><td>5hr</td><td>Cust Cust Sam t</td><td>ody ody ple H by Sa by Co</td><td>seal seal land mple ourie</td><td>s on s on I Del er/Cli r?</td><td>cont cool ivere ent R UF</td><td>ainei er(s) d ep. 7 PS</td><td>(s) ? 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XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Basin Enivronmental Service Technologi	Acceptable Temperature Range: 0 - 6 degC
Date/ Time Received: 10/16/2012 09:00:00 AM	Air and Metal samples Acceptable Range: Ambient
Work Order #: 450830	Temperature Measuring device used : r-31

Sam	ple 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 Cu	stody? 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	s)? Yes	
#18 All samples received within hold time?	Yes	
#19 Subcontract of sample(s)?	N/A	
#20 VOC samples have zero headspace (less th	an 1/4 inch bubble)? N/A	
#21 <2 for all samples preserved with HNO3,HC	L, 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

SALAN ACCREDING

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

> 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 - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America



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	А	11-05-12 10:00		451989-001







Project ID:2008-113Work 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



Project Id: 2008-113

Project Location: Lea County, NM

Contact: Ben Arguijo

Certificate of Analysis Summary 451989

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Name: EK Queen Pearce

Date Received in Lab: Tue Nov-06-12 12:33 pm Report Date: 13-NOV-12

Project Manager: Nicholas Straccione

	Lab Id:	451989-0	001			
Analysis Paguastad	Field Id:	SVE Dischar	ge-24			
Analysis Kequesiea	Depth:					
	Matrix:	AIR				
	Sampled:	Nov-05-12	10:00			
BTEX by EPA 8021B Mod.	Extracted:	Nov-08-12	15:15			
SUB: TX104704215	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.	Extracted:	Nov-08-12	15:15			
SUB: TX104704215	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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Ch Nul

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
- **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

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

Certified and approved by numerous States and Agencies.

LOQ Limit of Quantitation

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 (602) 437-0330
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Final 1.000



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders: 451989	,		Project II	D: 2008-113					
Lab Batch #: 900626	Sample: 451989-001 / SMP	Batcl	h: 1 Matrix:	Air					
Units: ppmv	Date Analyzed: 11/08/12 15:30								
BTEX b	y EPA 8021B Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
4-Bromofluorobenzene	1 mary tes	51.8	50.0	104	75-125				
Lab Batch #: 900627	Sample: 451989-001 / SMP	Batcl	h: ¹ Matrix:	Air					
Units: ppmv	Date Analyzed: 11/08/12 15:30	SU	RROGATE RE	ECOVERY	STUDY				
TPH GRO) by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes			[D]					
4-Bromofluorobenzene		53.8	50.0	108	60-140				
Lab Batch #: 900626	Sample: 629789-1-BLK / B	LK Batel	h: 1 Matrix:	Air					
Units: ppmv	Date Analyzed: 11/08/12 14:51	SU	RROGATE RE	ECOVERY S	STUDY				
BTEX b	y EPA 8021B Mod.	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes	[]	[2]	[D]					
4-Bromofluorobenzene		50.3	50.0	101	75-125				
Lab Batch #: 900627	Sample: 629790-1-BLK / B	LK Batcl	h: 1 Matrix:	Air					
Units: ppmv	Date Analyzed: 11/08/12 14:51	SU	RROGATE RE	ECOVERY S	STUDY				
TPH GRO	D 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 / B	KS Batcl	h: 1 Matrix:	Air					
Units: ppmv	Date Analyzed: 11/08/12 13:44	SU	STUDY						
BTEX b	y EPA 8021B Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
4-Bromofluorobenzene	1 111 u 1 y U 13	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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders : 451989	,		Project II	D: 2008-113		
Lab Batch #: 900627	Sample: 629790-1-BKS / B	KS Batel	h: ¹ Matrix	Air		
Units: ppmv	Date Analyzed: 11/08/12 14:06	SU	RROGATE RI	ECOVERY	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 / M	D Batcl	h: 1 Matrix	Air		
Units: ppmv	Date Analyzed: 11/08/12 15:52	SU	RROGATE RI	ECOVERY	STUDY	
BTEX b	y 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 / M	D Batcl	h: 1 Matrix	Air		
Units: ppmv	Date Analyzed: 11/08/12 15:52	SU	RROGATE RI	ECOVERY	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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 451989			Pro	oject ID:		2	008-113
Lab Batch #: 900626	Sa	ample: 629789-	1-BKS	Matrix:	Air		
Date Analyzed: 11/08/2012	Date Pre	pared: 11/08/20	012	Analyst:	ZHO		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /E	BLANK SPI	KE REC	COVERY S	STUDY
BTEX by EPA 8021B Mod.		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags
Analytes				[C]	[D]		
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	Sa	ample: 629790-	1-BKS	Matrix:	Air		
Date Analyzed: 11/08/2012	Date Pre	pared: 11/08/20)12	Analyst:	ZHO		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /B	BLANK SPI	KE REC	COVERY S	STUDY
TPH GRO by EPA 8015 Mod. Analytes		Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
TPH-GRO		<24.5	122	117	96	60-140	

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 451989

Lab Batch #: 900626			Project I	D: 2008-113	3
Date Analyzed: 11/08/2012 15:52 Date Prepa	ared: 11/08/2012	2 Anal	lyst:ZHO		
QC- Sample ID: 451989-001 D Bat	ch #: 1	Mat	rix: Air		
Reporting Units: ppmv	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021B Mod. Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 Prepa QC- Sample ID: 451989-001 D Bat	nred: 11/08/2012 ch #: 1	2 Ana Mat	lyst: ZHO rix: Air		
Reporting Units: ppmv	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
TPH GRO by EPA 8015 Mod. Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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			1 90 80 8 	· · · · · · · · · · · · · · · · · · ·	. :	•	1						<u></u> ;	Pr	ojec	t Nai	me:	EK	Que	en	Pea	rce						
Company Name	Basin Environmental Ser	vice Te	chnol	ogies, LLC				:		. : ·				· · · ·		Pi	ojec	t #: _2	2008	8-113	3	<u>.</u>				1			
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City/State/Zip:	Lovington, NM 88260																PC) #: F	PAA	-J. H	lenry	, .			÷				
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XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&SAcceptable Temperature Range: 0 - 6 degCDate/ Time Received: 11/06/2012 12:33:00 PMAir and Metal samples Acceptable Range: AmbientWork Order #: 451989Temperature Measuring device used :

S	ample 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 contain	er/ 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 relinquish	ed/ received?	Yes
#11 Chain of Custody agrees with sample lab	pel(s)?	Yes
#12 Container label(s) legible and intact?		Yes
#13 Sample matrix/ properties agree with Cha	ain 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 te	est(s)?	Yes
#18 All samples received within hold time?		Yes
#19 Subcontract of sample(s)?		Yes
#20 VOC samples have zero headspace (les	s than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,	HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAs	O2+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

FILA BORNO

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	А	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 Certificate of Analysis Summary 456696

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Ek Queen Pearce



Date Received in Lab: Wed Jan-30-13 10:15 am

Report Date: 07-FEB-13

Project Manager: Nicholas Straccione

	Lab Id:	456696-0	001			
Analysis Paguastad	Field Id:	SVE-Dischar	rge 25			
Analysis Kequesiea	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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Ch Nul

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
- **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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LOQ Limit of Quantitation

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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	

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: Ek Queen Pearce

Work Orders: 456696	, ,		Project II	D: 2008-113		
Lab Batch #: 906408	Sample: 456696-001 / SMP	Batch	h: 1 Matrix:	Air		
Units: ppmv	Date Analyzed: 02/02/13 01:48	S U	RROGATE RE	COVERY	STUDY	
TPH GRO	D by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
4 Duran flue and a more	Analytes	50.0	50.0	102	(0.140	
4-Bromolluorobenzene		50.8	50.0	102	60-140	
Lab Batch #: 906413	Sample: 456696-001 / SMP	Batch	h: 1 Matrix:	Air		
Units: ppmv	Date Analyzed: 02/02/13 01:48	SU	RROGATE RI	ECOVERY	STUDY	
BTEX	by EPA 8021 Mod.	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
4-Bromofluorobenzene		50.8	50.0	102	60-140	
Lab Batch #: 906408	Sample: 633467-1-BLK / B	LK Batcl	n: 1 Matrix:	Air		
Units: ppmv	Date Analyzed: 02/02/13 01:26	SU	RROGATE RI	ECOVERY	STUDY	
TPH GRO	D by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	[]	[2]	[D]	/ 011	
4-Bromofluorobenzene		52.4	50.0	105	60-140	
Lab Batch #: 906413	Sample: 633471-1-BLK / B	LK Batch	n: 1 Matrix	Air		
Units: ppmv	Date Analyzed: 02/02/13 01:26	SU	RROGATE RI	ECOVERY	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 / B	KS Batcl	n: 1 Matrix:	Air		
Units: ppmv	Date Analyzed: 02/01/13 23:49	SU	RROGATE RI	ECOVERY	STUDY	
BTEX	by EPA 8021 Mod.	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			נען		
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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Ek Queen Pearce

Work Orders : 456696	,		Project II	D: 2008-113		
Lab Batch #: 906408	Sample: 633467-1-BKS / B	KS Batel	h: ¹ Matrix:	Air		
Units: ppmv	Date Analyzed: 02/02/13 00:17	SU	RROGATE RI	ECOVERY	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 / M	D Batcl	h: 1 Matrix:	Air		
Units: ppmv	Date Analyzed: 02/02/13 02:11	SU	RROGATE RI	ECOVERY	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 / M	D Batcl	h: 1 Matrix:	Air		
Units: ppmv	Date Analyzed: 02/02/13 02:11	SU	RROGATE RI	ECOVERY	STUDY	
BTEX	oy 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: Ek Queen Pearce

Work Order #: 456696			Pr	oject ID:		2	008-113
Lab Batch #: 906413	Sa	ample: 633471-	1-BKS	Matrix:	Air		
Date Analyzed: 02/02/2013	Date Pre	pared: 02/01/20)13	Analyst:	ZHO		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	STUDY
BTEX by EPA 8021 Mod.		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags
Analytes				[C]	[D]		
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	Sa	ample: 633467-	1-BKS	Matrix:	Air		
Date Analyzed: 02/02/2013	Date Pre	pared: 02/01/20)13	Analyst:	ZHO		
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	STUDY
TPH GRO by EPA 8015 Mod. Analytes		Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
TPH-GRO		<24.5	122	95.1	78	60-140	

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 #: 456696

Lab Batch #: 906413				Project I	D: 2008-113	3
Date Analyzed: 02/02/2013 02:11	Date Prepar	ed: 02/01/2013	3 Ana	lyst:ZHO		
QC- Sample ID: 456696-001 D	Batcl	n#: 1	Ma	t rix: Air		
Reporting Units: ppmv		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Mo Analyte	d.	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 456696-001 D	Date Prepar Batcl	red: 02/01/2013	3 Ana Ma	lyst: ZHO t rix: Air		
Reporting Units: ppmv		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
TPH GRO by EPA 8015 M Analyte	lod.	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

Page 11 of 12

Final 1.000

456096-H 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															P	oje	et Na	ıme:	E,	K	Qı	le	en		2 <u>a</u>	re				
	Company Name Basin Environmental Service Technologies, LLC								Project #:																							
	Company Address:	ompany Address: P.O. Box 301								Project Loc: Lea County, NM																						
	City/State/Zip:	Lovington, NM 88260																	Ρ	O #:	PA	۹-J.	Неп	ı ry								
	Telephone No:	(575)396-2378				Fax No:		(57	5) 39(6-14	29					F	λepo	rt Fo	orma	ıt:	X	Star	ndar	d		Пτ	RRF	J		NPDI	ES	
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XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S	Acceptable Temperature Range: 0 - 6 degC
Date/ Time Received: 01/30/2013 10:15:00 AM	Air and Metal samples Acceptable Range: Ambient
Work Order #: 456696	Temperature Measuring device used : r-31

Sample Rece	ipt 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	h bubble)? N/A	
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	, N/A	
#22 >10 for all samples preserved with NaAsO2+NaOH, Zn	Ac+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	А	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



Project Id: 2008-113 Contact: Ben Arguijo Project Location: Lea County, NM Certificate of Analysis Summary 458430

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: EK Queen Pearce



Date Received in Lab: Thu Feb-28-13 09:40 am

Report Date: 06-MAR-13

Project Manager: Nicholas Straccione

	Lab Id:	458430-0	01			
Analysis Paguastad	Field Id:	SVE Discharg	ge - 26			
Analysis Kequestea	Depth:					
	Matrix:	AIR				
	Sampled:	Feb-27-13 ()9:15			
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.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Nul

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	e 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

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 - Atlanta - Midland/Odessa - Tampa/Lakeland - Phoenix - Latin America

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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
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

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Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Vork Orders : 458430	, 458430		Project II	D: 2008-113									
Lab Batch #: 908324	Sample: 458430-001 / SMP	Batcl	n: ¹ Matrix	Air									
Units: ppmv	Date Analyzed: 02/28/13 23:40	SU	RROGATE RI	ECOVERY	STUDY								
BTEX	by EPA 8021 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
4-Bromofluorobenzene		51.2	50.0	102	60-140								
Lab Batch #: 908325	Sample: 458430-001 / SMP	Batcl	n: 1 Matrix	Air									
Units: ppmv	Date Analyzed: 02/28/13 23:40	SURROGATE RECOVERY STUDY											
TPH GRO	D by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
4 Bromofluorobenzene	Analytes	52.4	50.0	107	60.140								
		53.4	50.0	107	00-140								
Lab Batch #: 908324	Sample: 634683-1-BLK / B	LK Batch	n: 1 Matrix	Air	STUDY								
Units: ppmv	Date Analyzed: 02/28/13 18:16	50	KRUGAIE KI										
BTEX	by EPA 8021 Mod.	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
4-Bromofluorobenzene	Analytes	52.8	50.0	106	60-140								
Lah Batch #• 908325	Sample: 634684-1-BLK / B	LK Batel	n• 1 Matrix	Air									
Units: ppmv	Date Analyzed: 02/28/13 18:16	SU	RROGATE RI	ECOVERY S	STUDY								
TPH GRO) by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
4-Bromofluorobenzene		55.1	50.0	110	60-140								
Lab Batch #: 908324	Sample: 634683-1-BKS / B	KS Batcl	n: 1 Matrix	Air									
Units: ppmv	Date Analyzed: 02/28/13 16:44	SU	RROGATE RI	ECOVERY	STUDY								
BTEXI	by EPA 8021 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
A-Bromofluorobanzana	Anarytes	52.2	50.0	107	60.140								
DIOINOITUOI ODEIIZEIIE		33.3	50.0	107	00-140								

* 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 / BAll results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EK Queen Pearce

Work Orders: 458430	, 458430		Project II	D: 2008-113								
Lab Batch #: 908325	Sample: 634684-1-BKS / B	KS Batel	h: ¹ Matrix:	Air								
Units: ppmv	Date Analyzed: 02/28/13 17:07	SU	RROGATE RI	ECOVERY S	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 / M	D Batcl	h: 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 / M	D Batcl	h: 1 Matrix	Air								
Units: ppmv	Date Analyzed: 02/28/13 19:24	SU	RROGATE RI	ECOVERY S	STUDY							
TPH GRO	D 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 / BAll results are based on MDL and validated for QC purposes.





Project Name: EK Queen Pearce

Work Order #: 458430			2	008-113					
Lab Batch #: 908324	Sa	ample: 634683-	1-BKS	Matrix:	Air				
Date Analyzed: 02/28/2013	Date Prej	pared: 02/28/20)13	Analyst:	ZHO				
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	OVERY STUDY				
BTEX by EPA 8021 Mod.		Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags		
Analytes				[C]	[D]				
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	Sa	mple: 634684-	1-BKS	Matrix:	Air				
Date Analyzed: 02/28/2013	Date Pre	pared: 02/28/20)13	Analyst:	ZHO				
Reporting Units: ppmv	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	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		
TPH-GRO		<24.5	122	117	96	60-140			

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit



TPH-GRO



Project Name: EK Queen Pearce

Work Order #: 458430

Lab Batch #: 908324				Project I	D: 2008-113	3
Date Analyzed: 02/28/2013 19:24	Date Prepar	red: 02/28/2013	3 Ana	lyst:ZHO		
QC- Sample ID: 458384-003 D	Batcl	h #: 1	Mat	rix: Air		
Reporting Units: ppmv		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
BTEX by EPA 8021 Mod. Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 QC- Sample ID: 458384-003 D	Date Prepar Batcl	red: 02/28/2013 h #: 1	3 Ana Mat	lyst:ZHO rix: Air		
Reporting Units: ppmv		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
TPH GRO by EPA 8015 Mo Analyte	d.	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

<24.5

0

35

<24.5

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

Page 11 of 12

Final 1.000



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																F	roje	ct N	ame:	EK	QL	leel	<u>n Pe</u>	arc	:e						
	Company Name	Basin Environmental Ser	rvice T	echno	logies, LLC														F	гоје	ct #:	200)8-1 1	13									
	Company Address	5: <u>P. O. Box 301</u>																	Pro	ject	Loc:	Lea	a Co	unty	<u>y, NN</u>	<u>л</u>							
	City/State/Zip:	Lovington, NM 88260															_			F	0 #:	PA	A-J.	Her	ıry	_							
	Telephone No:	(575)396-2378				_	Fax N	o:	<u>(5</u>	575)	396	1429	•				_	Rep	ort F	orma	it:	X	Sta	ndar	rd		ד 🗌	rrrf	2		NPDI	ES	
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XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&SAcceptable Temperature Range: 0 - 6 degCDate/ Time Received: 02/28/2013 09:40:00 AMAir and Metal samples Acceptable Range: AmbientWork Order #: 458430Temperature 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 2

Tanya Torres

Date: 02/28/2013

Checklist reviewed by:

Date: 02/28/2013

Appendix H Release Notification & Corrective Action (Form C-141)

State of New Mexico Energy Minerals and Natural Resources

> Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

220 S. St. Fran	icis Dr., Sant	a Fe, NM 87503		Sa	nta Fe	e, NM 875	05					
			Rele	ease Notific	atio	n and Co	orrective A	ction	_			
						OPER	TOR		x Initi	al Report	Π	Final Repo
Name of Co	ompany Pl	ains Pipeline	;			Contact Car	nille Bryant	(/	teres of	.
Address 31	12 W. US	Hwy 82, Lov	vington, 1	NM 88260		Telephone 1	No. 505-441-09	65	\sim		• • • • • • •	
Facility Nat	me E.K. Q	ueen Pearce	6 Inch			Facility Typ	e 6"Steel Pipel	ine				
Surface Ow	ner SLO			Mineral O	wner				Lease 1	No. 30-	02	5-3578
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Unit Lattar	Section	Tourshin	Danga	LUCA	North	South Line	LEASE	Fact/W	lect Line	County		
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				NAT	URE	OF REL	EASE					
Type of Rele	ase Crude (Oil	<u></u>			Volume of	Release 10 barre	ls	Volume l	Recovered 0	barrel	3
Source of Re	elease 6" Sto	eel Pipeline		·		Date and H	lour of Occurrence	ce	Date and	Hour of Dis	covery	
117 T 1*		0. 0				05/06/2008	<u>3 @ 11:00</u>		05/06/20	08@11:40		
Was Immedi	ate Notice	Given?	Yes 🗌	No 🗌 Not Rec	quired	Larry John	son				6	
By Whom? (Camille Bry	ant				Date and H	Iour 05/06/2008	@ 16 9	REC.	; FIV I	Et	-
Was a Water	course Rea	ched?	· •			If YES, Vo	olume Impacting	the Wate	rcourse.			كن
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sweet crude	oil is 40. T	he sweet crude	e has an H	$_2$ S content of <10 g	ppm. T	The line is app	roximately 1 foot	t bgs at th	ne release	point.	ie grav	ny of the
Describe Are	ea Affected	and Cleanup A	Action Tak	ten.* The impacted	d soil w	as excavated	and stockpiled or	n plastic.				9
I hereby certi regulations a public health should their o or the enviro federal, state	ify that the 11 operators or the envi operations h nment. In a , or local lav	information gi are required to ronment. The nave failed to a addition, NMC ws and/or regu	iven above o report ar acceptanc adequately OCD accep ilations.	is true and completed ind/or file certain re- ee of a C-141 repor- investigate and re- tance of a C-141 re-	ete to ti lease n rt by the mediat eport d	he best of my otifications at e NMOCD m e contaminati oes not reliev	knowledge and u nd perform correc arked as "Final R on that pose a thr e the operator of	inderstan ctive actio eport" do eat to gro responsib	d that purs ons for rel bes not rel bund water bility for c	suant to NM eases which ieve the oper r, surface wa ompliance w	OCD r may er rator of iter, hu vith ang	ules and ndanger f liability man health y other
Signature.	n GM	1000, T	Za va	mt			OIL CON	SERVA	ATION	DIVISIC	<u>N</u>	
Printed Name	e: Camille H	Bryant	J			Approved by	District Supervis	97NME	NTAL E	NGINEER		
Title: Remed	iation Coor	dinator				Approval Dat	e: 5.8.08	E	xpiration	Date: T.	B.C	B
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