1R - 2637

REPORTS

DATE:

August 2012

PLAINS
PIPELINE, L.P.

August 27, 2012

Mr. Geoff Leking
New Mexico Oil Conservation Division
1625 N. French Drive
Hobbs, New Mexico 88240

RE: Plains Pipeline, L.P. Chevron Grayburg 6-inch Sec. 6 (Historical) Release Site
NMOCD Reference # 1R-2637 (formerly # 1RP-2637)
Unit Letter B of Section 6, Township 18 South, Range 35 East
Lea County, New Mexico

Dear Mr. Leking:

Plains Pipeline, L.P. is pleased to submit the attached *Remediation Summary & Soil Closure Request*, dated August 2012, for the Chevron Grayburg 6-inch Sec. 6 (Historical) site. This site is located in Section 6 of Township 18 South, and Range 35 East of Lea County, New Mexico. This document details the soil remediation activities performed at the site.

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

Sincerely,

Jason Henry
Remediation Coordinator
Plains Pipeline, L.P.

CC: Ed Hansen, NMOCD, Santa Fe Office

Enclosure

Basin Environmental Service Technologies, LLC

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Lovington, New Mexico 88260
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REMEDIATION SUMMARY &

SOIL CLOSURE REQUEST

PLAINS PIPELINE, LP
CHEVRON GRAYBURG 6-INCH SEC. 6 (HISTORICAL)
Plains SRS Chevron Grayburg 6-Inch Historical
Lea County, New Mexico
Unit Letter "B" (NW/NE), Section 6, Township 18 South, Range 35 East
Latitude 32. 7810858° North, Longitude 103.4924927° West
NMOCD Reference #1RP-2637

Prepared For:

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

Prepared By:

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

August 2012

Ben J. Arguijo
Project Manager

approved
Leslie Shine
Env Specialist
NMOCD-DIST 1
9/4/12

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SOIL CLOSURE REQUEST

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August 2012

Ben J. Arguijo
Project Manager

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Appendix D – Permits
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1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin Environmental), on behalf of Plains Pipeline, LP (Plains), has prepared this *Remediation Summary & Soil Closure Request* for the release site known as Chevron Grayburg 6-Inch Sec. 6 (Historical). The legal description of the release site is Unit Letter "B" (NW/NE), Section 6, Township 18 South, Range 35 East, in Lea County, New Mexico. The geographic coordinates of the release site are 32.7810858° North latitude and 103.4924927° West longitude. The property affected by the release is owned by the State of New Mexico and administered by the New Mexico State Land Office (NMSLO). A "Site Location Map" is provided as Figure 1.

On October 8, 2010, Plains was notified of a release on the Chevron Grayburg 6-inch pipeline. During line replacement activities, an excavator struck a tee connected to the pipeline, resulting in a release of crude oil. The released fluid pooled in the trench next to the pipeline. During initial response activities, a temporary pipe clamp was utilized to mitigate the release, and a vacuum truck was employed to recover free-standing liquid. Heavily impacted and visibly stained soil was excavated and stockpiled on-site, pending final disposition.

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 one hundred and twenty barrels (120 bbls) of crude oil was released, and approximately one hundred and fifteen barrels (115 bbls) of crude oil was recovered. The Form C-141 is provided in Appendix A. General photographs of the release site are provided in Appendix B.

On October 22, 2010, Basin Environmental, at the request of Plains, assumed oversight responsibilities for the remediation activities at the Chevron Grayburg 6-Inch Sec. 6 (Historical) release site.

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) indicates groundwater should be encountered between approximately sixty feet (60') and ninety-five feet (95') below ground surface (bgs) in Section 6, Township 18 South, Range 35 East. A depth-to-groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately eighty feet (80') bgs. Based on the NMOCD ranking system, ten (10) points will be assigned to the site as a result of this 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 are no surface water bodies 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.

NMOCD guidelines indicate the Chevron Grayburg 6-Inch Sec. 6 (Historical) release site has an initial ranking score of ten (10) points. The soil remediation levels for a site with a ranking score of ten (10) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- BTEX – 50 mg/Kg (ppm)
- TPH – 1,000 mg/Kg (ppm)

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

3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES

On November 5, 2010, one (1) composite soil sample (Stockpile) was collected from the stockpiled material and submitted to Xenco Laboratories, Inc., in Odessa, Texas, for analysis of total petroleum hydrocarbons (TPH) in accordance with EPA Method SW 846-8015M. Laboratory analytical results indicated the TPH concentration in soil sample Stockpile was 6,440 mg/Kg.

Table 1 summarizes the "Concentrations of Benzene, BTEX, TPH & Chloride in Soil". Soil sample locations are depicted in Figure 2, "Site & Sample Location Map". Laboratory analytical reports are provided in Appendix E.

On November 12, 2010, five (5) soil samples (N-SW, S-SW, E-SW, W-SW, and Floor) were collected from the floor and sidewalls of the excavation and submitted to the laboratory for analysis of benzene, ethylbenzene, toluene, and xylene (BTEX), TPH, and/or chloride concentrations in accordance with EPA Methods SW 846-8021b, SW 846-8015M, and 300.1, respectively. Laboratory analytical results indicated benzene concentrations were less than the laboratory method detection limit (MDL) in all submitted soil samples. BTEX concentrations ranged from less than the laboratory MDL in soil samples E-SW and W-SW to 0.0159 mg/Kg in soil sample N-SW. TPH concentrations ranged from 26.6 mg/Kg in soil sample E-SW to 22,097 mg/Kg in soil sample Floor. Chloride concentrations ranged from 33.8 mg/Kg in soil sample S-SW to 65.1 mg/Kg in soil sample E-SW.

Review of laboratory analytical results indicated further delineation would be required in the area represented by soil sample Floor.

On December 22, 2010, Basin Environmental commenced remediation activities at the site. The existing stockpile of impacted soil was relocated and placed on six (6) mil polyurethane plastic.

From December 22 through December 27, 2012, impacted soil was excavated and blended with the stockpiled material, pending final disposition. A Photo-Ionization Detector (PID) was used to field-screen the horizontal and vertical extent of impacted soil and to guide the excavation.

Remediation activities were hampered by the presence of several large, impenetrable boulders in the affected area. It was determined that specialized equipment would be required to advance the

excavation further. The excavation was fenced off, and the excavation and stockpiled material were left undisturbed for the remainder of the 2010-2011 winter season to facilitate bioremediation.

On March 29, 2011, an excavator equipped with a hydraulic rock hammer was mobilized to the site, and excavation of impacted soil resumed. From March 29 through April 12, 2011, impacted soil was excavated and blended with the stockpiled material, pending final disposition.

On April 11, 2011, one (1) soil sample (Release Point @ 24') was collected from the floor of the excavation and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated the TPH concentration in soil sample Release Point @ 24' was 3,010 mg/Kg, and the chloride concentration was 49.3 mg/Kg.

Review of laboratory analytical results indicated further vertical delineation would be required in the area represented by soil sample Release Point @ 24'.

On May 25, 2011, representatives of Plains and Basin Environmental met with a representative of the NMOCD Hobbs District Office to devise a strategy to advance the Chevron Grayburg 6-Inch Sec. 6 (Historical) release site to an NMOCD-approved closure. Due to the impracticability of transporting and/or disposing of the large 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. Prior to backfilling, a screen machine would be utilized to separate impacted soil from the rocks. The screened material would be treated with a water/fertilizer mix and aerated to facilitate bioremediation. When laboratory analytical results of stockpile soil samples indicated BTEX and TPH concentrations were below the regulatory remediation action levels established for the site, the blended soil would be used as backfill material. Permission was also requested for the installation of an impermeable, twenty (20) mil, polyurethane liner in the floor of the excavation, with a six-inch (6") PVC conduit near the release point to advance a soil boring at a later date. The requests were approved by the NMOCD representative. The NMOCD representative also requested that an additional soil sample be collected from the southern sidewall of the excavation, as near as practicable to both the two-inch (2"), steel, high pressure CO_2 line bordering the excavation and soil sample S-SW.

On June 2, 2011, pursuant to NMOCD request, one (1) soil sample [South Wall (S-SW)] was collected from the southern sidewall of the excavation and submitted to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated the BTEX and TPH concentrations in soil sample South Wall (S-SW) were less than the appropriate laboratory MDL.

From June 8 through June 23, 2011, the stockpiled material was screened to separate impacted soil and large rocks. The rocks were stockpiled separately on-site, pending final disposition. The screened material was blended with the stockpiled soil on-site, treated with a water/fertilizer mix, and aerated to facilitate bioremediation.

On June 15, 2011, two (2) composite soil samples (Stockpile #1 and Stockpile #2) were collected from the blended soil and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated TPH concentrations ranged from 2,510 mg/Kg in soil sample Stockpile #2 to 3,810 mg/Kg in soil sample Stockpile #1. Chloride

concentrations ranged from 57.0 mg/Kg in soil sample Stockpile #2 to 84.5 mg/Kg in soil sample Stockpile #1.

Soil represented by soil samples Stockpile #1 and Stockpile #2 was blended and aerated, then left undisturbed for several days to facilitate bioremediation.

On June 28, 2011, one (1) composite soil sample (Stockpile #1A) was collected from the stockpiled soil and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated the TPH concentration in soil sample Stockpile #1A was 2,830 mg/Kg, and the chloride concentration was 74.8 mg/Kg.

On July 11, 2011, the stockpiled soil was treated with a water/fertilizer mix and aerated to facilitate bioremediation.

On July 19, 2011, one (1) composite soil sample (Stockpile) was collected from the stockpiled soil and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated the TPH concentration in soil sample Stockpile was 1,350 mg/Kg, and the chloride concentration was 84.5 mg/Kg.

On August 3, 2011, representatives of Plains and Basin Environmental met with a representative of the NMOCD Hobbs District Office to request permission to backfill the excavation with the stockpiled soil. The NMOCD representative requested that the stockpiled material be treated with an additional application of the water/fertilizer mix, aerated, and resampled. When laboratory analytical results of stockpile soil samples indicated BTEX and TPH concentrations were below the regulatory remediation action levels established for the site, the NMOCD would grant permission to use the stockpiled soil as backfill material.

On August 4, 2011, one (1) composite soil sample (Stockpile) was collected from the stockpiled material and submitted to the laboratory for analysis of BTEX, TPH, and chloride concentrations. Laboratory analytical results indicated the benzene concentration in soil sample Stockpile was less than the appropriate laboratory MDL. The BTEX concentration was 0.0091 mg/Kg, the TPH concentration was 348 mg/Kg, and the chloride concentration was 87.3 mg/Kg.

On August 8, 2011, the soil was treated with a water/fertilizer mix and aerated to facilitate bioremediation.

On August 18, 2011, upon receipt of laboratory analytical results from the August 4, 2011, stockpile soil sample, a representative of Basin Environmental contacted a representative of the NMOCD Hobbs District Office to request permission to backfill the excavation with the stockpiled material. The request was approved by the NMOCD representative.

Based on laboratory analytical results, and with NMOCD approval, from August 22 through August 25, 2011, the excavation was backfilled with the stockpiled material and the large rocks and boulders that had been previously removed from the excavation. Prior to backfilling, a twenty (20) mil polyurethane liner was installed in the floor of the excavation. A cushion of non-impacted pad sand was installed approximately one foot (1') both above and below the liner to protect the liner from damage during installation and backfilling activities. A six-inch (6") PVC conduit was installed near the release point to facilitate advancement of a soil boring in the floor

of the excavation at a later date. The PVC riser was fitted with a forty (40) mil boot, which was chemically welded to the liner to preserve the integrity and impermeability of the liner. Following backfill, the excavation was water-packed and contoured to fit the surrounding topography.

Final dimensions of the excavation were approximately fifty-two feet (52') in length, ranging in width from approximately five feet (5') to approximately forty-one feet (41'), and varying in depth from approximately six feet (6') to approximately twenty-four feet (24') bgs.

The disturbed area will be seeded with an NMSLO-approved seed mixture during the 2012 calendar year.

On August 30, 2011, one (1) soil boring (SB-1) was advanced at the release point to further investigate the vertical extent of impacted soil. The soil boring was drilled through the PVC conduit that had been set in the floor of the excavation prior to backfilling. The soil boring was advanced to a total depth of approximately seventy-seven feet (77') bgs. Soil samples were collected at five-foot (5') drilling intervals and field-screened using a PID. A soil boring log is provided in Appendix C.

Soil samples collected at drilling depths of thirty-two feet (32'), forty-seven feet (47'), sixty-two feet (62'), and seventy-two feet (72') bgs were submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations ranged from 2,670 mg/Kg in soil sample SB-1 @ 47' to 3,730 mg/Kg in soil sample SB-1 @ 72'.

Review of laboratory analytical results and field-screens indicated hydrocarbon impact exceeding NMOCD regulatory standards was present at the groundwater interface. Since permission to install a monitor well had not been secured from the NMSLO and/or NMOSE, following sample collection, soil boring SB-1 was plugged with bentonite, and the PVC conduit was secured with a compression cap (J-plug) to facilitate reentry of the borehole at a later date.

On November 3, 2011, representatives of Plains and Basin Environmental met with a representative of the NMOCD Hobbs District Office to discuss the findings of the August 30, 2011, drilling event and to determine a course of action for the site. In order to properly delineate the extent of groundwater impact, it was requested that four (4) monitor wells be installed on-site: one (1) monitor well at the release point, one (1) monitor well up-gradient of the release point, one (1) monitor well down-gradient of the release point, and one (1) monitor well cross-gradient of the release point. The monitor well installed at the release point would be drilled through the PVC conduit used for soil boring SB-1, if possible. The request was approved by the NMOCD representative.

On June 14, 2012, after having procured the proper permits from the NMSLO (Water Easement #WM-239) and the NMOSE (File #L-13041), installation of the four (4) proposed monitor wells commenced at the site. Soil samples were collected at five-foot (5') drilling intervals and field-screened using a PID. Selected soil samples were submitted to the laboratory for analysis of BTEX and TPH concentrations. Monitor well logs are provided in Appendix C. NMSLO and NMOSE permits are provided in Appendix D.

Monitor well MW-2 was installed up-gradient of the release point, approximately fifty-five feet (55') to the north-northwest of soil boring SB-1. The monitor well was advanced to a total depth of approximately one hundred and forty feet (140') bgs and fitted with a two-inch (2") diameter, screened PVC riser, J-plug, and a locking, steel monument. Groundwater was encountered at approximately one hundred and twenty feet (120') bgs.

Soil samples collected at drilling depths of thirty-five feet (35'), fifty-five feet (55'), seventy-five feet (75'), and ninety-five feet (95') bgs were submitted to the laboratory for analysis of BTEX and TPH 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 MW-2 @ 35', MW-2 @ 55', and MW-2 @ 75' to 59.4 mg/Kg in soil sample MW-2 @ 95'.

Monitor well MW-3 was advanced cross-gradient of the release point, approximately sixty feet (60') to the southwest of monitor well MW-1. Moisture was encountered at approximately sixty feet (60') bgs, and the monitor well was allowed to remain undisturbed overnight to determine whether or not groundwater had been reached.

On June 15, 2012, monitor well MW-3 was gauged and determined to be dry. The borehole was re-entered, and the monitor well was advanced to a total depth of approximately one hundred and forty feet (140') bgs and fitted with a two-inch (2") diameter, screened PVC riser, J-plug, and a locking, steel monument. Groundwater was encountered at approximately one hundred and twenty feet (120') bgs.

Soil samples collected at drilling depths of thirty-five feet (35'), fifty feet (50'), sixty-five feet (65'), and ninety-five feet (95') bgs were submitted to the laboratory for analysis of BTEX and TPH 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 MW-3 @ 35' and MW-3 @ 50' to 229 mg/Kg in soil sample MW-3 @ 65'.

Monitor well MW-1 was installed at the release point, through the PVC conduit in the floor of the excavation used to drill soil boring SB-1. The monitor well was advanced to a total depth of approximately one hundred and thirty feet (130') bgs and fitted with a two-inch (2") diameter, screened PVC riser, J-plug, and a locking, steel monument. Groundwater was encountered at approximately one hundred and twenty feet (120') bgs.

In order to remove the bentonite used to plug soil boring SB-1 and to prevent collapse of the borehole at lower depths, water was injected down-hole throughout the entirety of the drilling process, precluding the collection of uncompromised soil samples from monitor well MW-1.

On June 18, 2012, monitor well MW-4 was installed down-gradient of the release point, approximately seventy-five feet (75') to the southeast of monitor well MW-1. The monitor well was advanced to a total depth of approximately one hundred and forty feet (140') bgs and fitted with a four-inch (4") diameter, screened PVC riser, J-plug, and a locking, steel monument.

Soil samples collected at drilling depths of thirty-five feet (35'), fifty-five feet (55'), seventy feet (70'), and ninety-five feet (95') bgs were submitted to the laboratory for analysis of BTEX and

TPH concentrations. Laboratory analytical results indicated BTEX and TPH concentrations were less than the appropriate laboratory MDL in all submitted soil samples.

4.0 QA/QC PROCEDURES

4.1 Soil Sampling

Soil Samples were submitted to Xenco Laboratories, Inc., 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.

The soil samples were analyzed as follows:

- 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

4.2 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.

4.3 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 analytical reports or are on file at the laboratory.

5.0 SOIL CLOSURE REQUEST

Soil samples collected from the floor and sidewalls of the Chevron Grayburg 6-Inch Sec. 6 (Historical) excavation were analyzed by an NMOCD-approved laboratory, and concentrations of benzene, BTEX, and chloride were below the remediation action levels established for the site by the NMOCD. Review of laboratory analytical results indicated the TPH concentration in soil sample Release Point @ 24' collected from the floor the excavation exceeded the remediation action level establish for the site.

An impermeable, twenty (20) mil polyurethane liner was installed on the floor 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.

Based on these laboratory analytical results, Basin Environmental recommends Plains provide the NMOCD Hobbs District Office and the NMSLO a copy of this *Remediation Summary & Soil Closure Request* and request the NMOCD grant soil closure status to the Chevron Grayburg 6-Inch Sec. 6 (Historical) release site.

A total of four (4) groundwater monitoring wells have been installed on-site, and Plains is in the process of evaluating the groundwater conditions at the site. Upon completion of groundwater evaluation activities, Plains will prepare and submit a report to the NMOCD.

6.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & Soil Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin Environmental has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin Environmental has not conducted an independent examination of the facts contained in referenced materials and statements. Basin Environmental has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin Environmental has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin Environmental notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

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

7.0 DISTRIBUTION:

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Figures

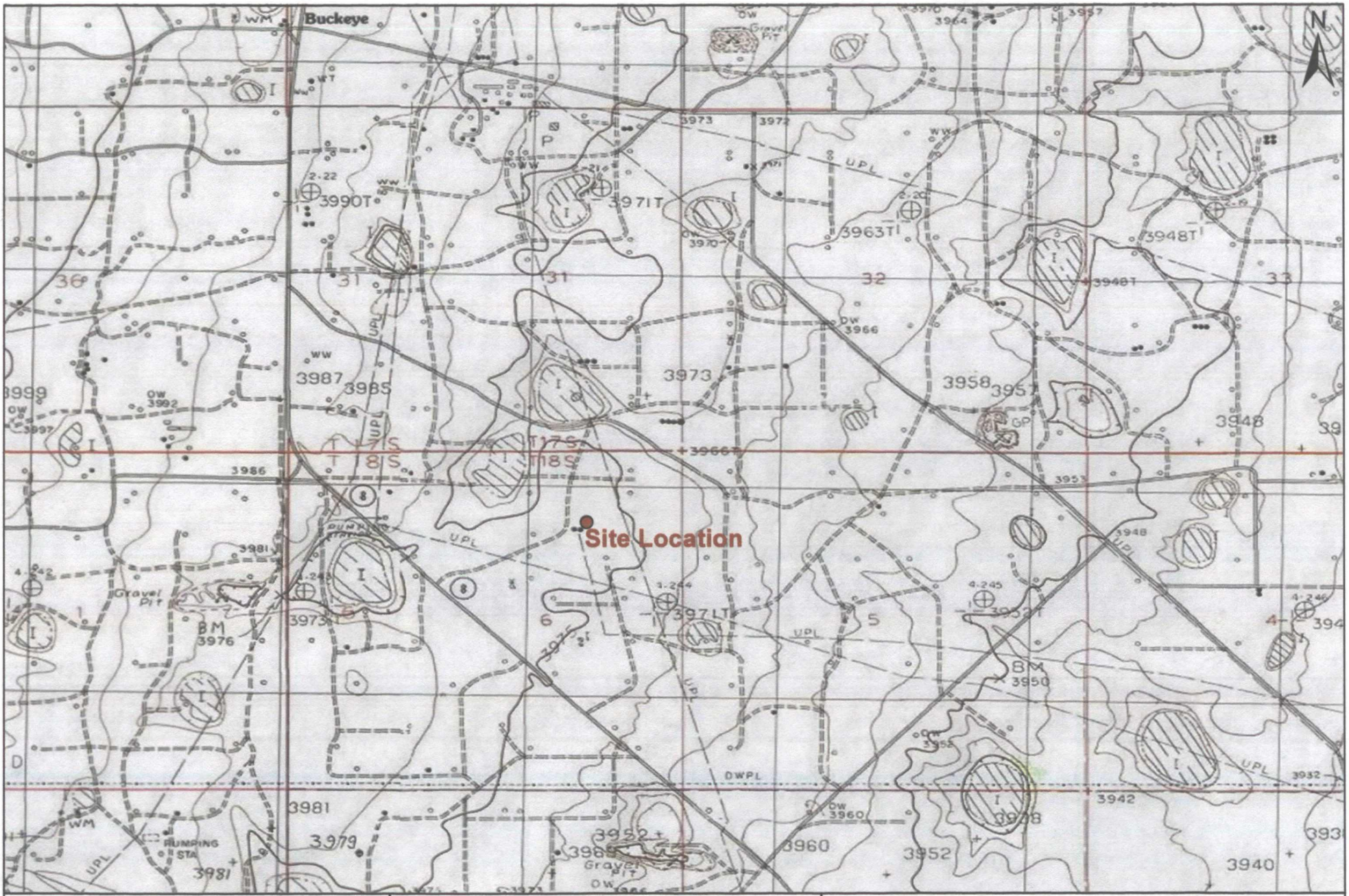
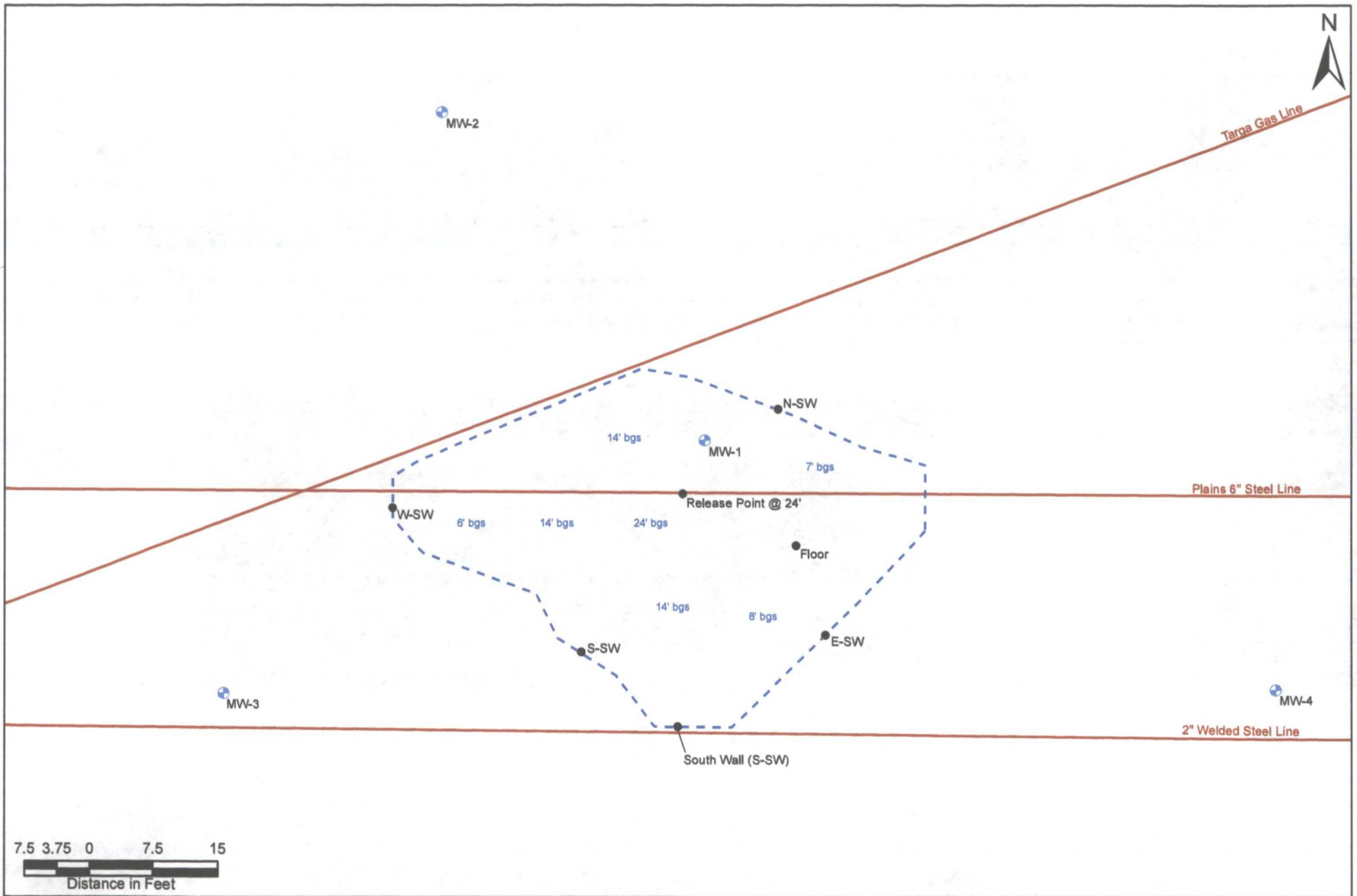


Figure 1
Site Location Map
Plains Pipeline, LP
Chevron Grayburg 6-Inch Sec. 6 (Historical)
Lea County, New Mexico
SRS #: Chevron Grayburg 6-Inch Historical
NMOCD Ref. #: 1RP-2637

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

Drawn By: BJA	Checked By: BRB
August 27, 2012	Scale: 1" = 2000'



Legend

- Excavation Extent
- Pipeline
- Sample Location
- Monitor Well

Figure 2
Site & Sample Location Map
Plains Pipeline, LP
Chevron Grayburg 6-Inch Sec. 6 (Historical)
Lea County, New Mexico
SRS #: Chevron Grayburg 6-Inch Historical
NMOCD Ref. #: 1RP-2637

Basin Environmental Service Technologies
Effective Solutions

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

Drawn By: BJA	Checked By: BRB
August 27, 2012	Scale: 1" = 15'

Tables

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

PLAINS PIPELINE, LP
CHEVRON GRAYBURH 6-INCH SEC. 6 (HISTORICAL)
LEA COUNTY, NEW MEXICO
SRS #: CHEVRON GRAYBURG 6-INCH HISTORICAL
NMOCD REFERENCE #: 1RP-2637

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030							METHOD: 8015M			TOTAL TPH C_6-C_{35} (mg/Kg)	E 300 CHLORIDE (mg/Kg)
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M.P. - XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C_6-C_{12} (mg/Kg)	DRO C_{12}-C_{28} (mg/Kg)	ORO C_{28}-C_{35} (mg/Kg)		
Stockpile	N/A	11/5/2010	Blended	-	-	-	-	-	-	-	2,230	4,210	<156	6,440	-
N-SW	3'	11/12/2010	In-Situ	<0.0010	0.0055	0.0041	0.0053	0.0010	0.0063	0.0159	<15.0	527	28.4	555	34.0
S-SW	5'	11/12/2010	In-Situ	-	-	-	-	-	-	-	21.7	1,740	77.3	1,839	33.8
E-SW	3.5'	11/12/2010	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<0.0021	<15.9	26.6	<15.9	26.6	65.1
W-SW	6'	11/12/2010	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<15.6	794	47.8	842	45.0
Floor	7'	11/12/2010	Excavated	-	-	-	-	-	-	-	6,230	15,500	367	22,097	46.3
Release Point @ 24'	24'	4/11/2011	In-Situ	-	-	-	-	-	-	-	625	2,370	17.3	3,010	49.3
South Wall (S-SW)	4'	6/2/2011	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<15.6	<15.6	<15.6	<15.6	-
Stockpile #1	N/A	6/15/2011	Blended	-	-	-	-	-	-	-	207	3,600	<15.3	3,810	84.5
Stockpile #2	N/A	6/15/2011	Blended	-	-	-	-	-	-	-	134	2,380	<15.5	2,510	57.0
Stockpile #1A	N/A	6/28/2011	Blended	-	-	-	-	-	-	-	133	2,570	131	2,830	74.8
Stockpile	N/A	7/19/2011	Blended	-	-	-	-	-	-	-	<79.1	1,350	<79.1	1,350	84.5
Stockpile	N/A	8/4/2011	Blended	<0.0010	<0.0021	0.00135	0.00468	0.00303	0.00771	0.00906	<15.5	329	18.6	348	87.3
SB-1 @32'	32'	8/30/2011	In-Situ	-	-	-	-	-	-	-	489	2,690	46.5	3,230	-
SB-1 @47'	47'	8/30/2011	In-Situ	-	-	-	-	-	-	-	305	2,330	37.7	2,670	-
SB-1 @62'	62'	8/30/2011	In-Situ	-	-	-	-	-	-	-	487	2,350	<79.3	2,840	-
SB-1 @72'	72'	8/30/2011	In-Situ	-	-	-	-	-	-	-	436	3,190	104.0	3,730	-
MW-2 @ 35'	35'	6/14/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<50.8	<50.8	<50.8	<50.8	-
MW-2 @ 55'	55'	6/14/2012	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<51.5	<51.5	<51.5	<51.5	-
MW-2 @ 75'	75'	6/14/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<50.3	<50.3	<50.3	<50.3	-
MW-2 @ 95'	95'	6/14/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<50.2	59.4	<50.2	59.4	-
MW-3 @ 35'	35'	6/14/2012	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<51.4	<51.4	<51.4	<51.4	-
MW-3 @ 50'	50'	6/14/2012	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<51.6	<51.6	<51.6	<51.6	-
MW-3 @ 65'	65'	6/15/2012	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<52.0	229	<52.0	229	-
MW-3 @ 95'	95'	6/15/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<50.6	159	<50.6	159	-
MW-4 @ 35'	35'	6/18/2012	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<51.7	<51.7	<51.7	<51.7	-
MW-4 @ 55'	55'	6/18/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<51.4	<51.4	<51.4	<51.4	-
MW-4 @ 70'	70'	6/18/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<50.7	<50.7	<50.7	<50.7	-
MW-4 @ 95'	95'	6/18/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<50.4	<50.4	<50.4	<50.4	-
NMOCD Standard				**10**						**50**				**1,000**	

Appendices

Appendix A

Release Notification &

Corrective Action (Form C-141)

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	**Plains Pipeline, LP**	Contact	**Jason Henry**
Address	**2530 Hwy 214 – Denver City, TX 79323**	Telephone No.	**(575) 441-1099**
Facility Name	**Chevron Grayburg 6-inch Sec. 6**	Facility Type	**Pipeline**

Surface Owner **NMSLO**	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	**6**	**18S**	**35E**					**Lea**

Latitude N 32.7810858° Longitude W 103.4924927°

WTR 80'

NATURE OF RELEASE

Type of Release **Crude Oil**	Volume of Release **120 bbls**	Volume Recovered **115 bbls**
Source of Release **6" Steel Pipeline**	Date and Hour of Occurrence **10/08/2010 @ 10:00**	Date and Hour of Discovery **10/08/2010 @ 10:00**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Larry Johnson**	
By Whom? **Jason Henry**	Date and Hour **10/08/2010 @ 11:30**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

RECEIVED
OCT 15
HOBBSOCD

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Excavator struck a tee connected to the Chevron Grayburg 6" pipeline causing a release of crude oil. Throughput for the subject line is 2,000 bbls/day and the operating pressure of the pipeline is 50 psi. The depth of the pipeline at the release point is approximately 2' bgs. The H2S concentration in the crude is less than 10 ppm and the gravity of the crude is 36.

Describe Area Affected and Cleanup Action Taken.*

The released crude pooled in the trench next to the pipeline and a vac truck was used to recover the free product. The impacted area will be remediated per applicable guidelines.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Jason Henry

Printed Name: **Jason Henry**

Title: **Remediation Coordinator**

E-mail Address: **jhenry@paalp.com**

Date: 10-15-2010 Phone: **(575) 441-1099**

OIL CONSERVATION DIVISION

Approved by District Supervisor: L Johnson ENVIRONMENTAL ENGINEER

Approval Date: 10.15.10 Expiration Date: 12.15.10

Conditions of Approval: SUBMIT FINAL C-141 W/DOCS BY

Attached ☐

IRP# 10.10.2637

* Attach Additional Sheets If Necessary

Appendix B

Photographs

Chevron Grayburg 6-Inch Sec. 6 (Historical) - Release Site (Looking East)

Chevron Grayburg 6-Inch Sec. 6 (Historical) - Release Site (Looking West)

Chevron Grayburg 6-Inch Sec. 6 (Historical) - Release Site (Looking Northwest)

Chevron Grayburg 6-Inch Sec. 6 (Historical) - Stockpile (From Initial Response Activities)

Chevron Grayburg 6-Inch Sec. 6 (Historical) - Excavation
(Prior to Backfilling; Z-Screen & Screened Stockpile Visible in Background)

Chevron Grayburg 6-Inch Sec. 6 (Historical) - Excavation (Prior to Backfilling) & PVC Boot

Chevron Grayburg 6-Inch Sec. 6 (Historical) - Excavation
(Following Installation of 20-mil Liner & PVC Conduit)

Chevron Grayburg 6-Inch Sec. 6 (Historical) - PVC Conduit & Boot

Chevron Grayburg 6-Inch Sec. 6 (Historical) - Installation of Pad Sand

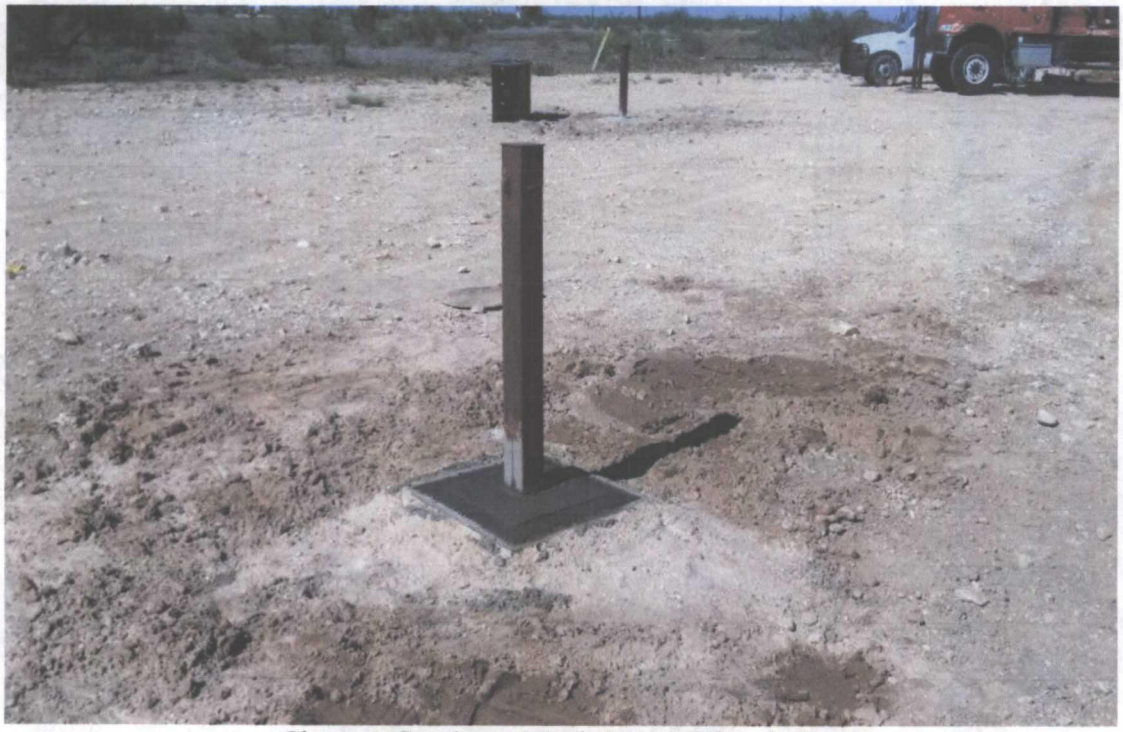
Chevron Grayburg 6-Inch Sec. 6 (Historical) - Excavation
(Following Backfilling; Looking West-southwest; PVC Conduit in Foreground)

Chevron Grayburg 6-Inch Sec. 6 (Historical) - Advancement of Monitor Well MW-1

Chevron Grayburg 6-Inch Sec. 6 (Historical) - Advancement of Monitor Well MW-2

Chevron Grayburg 6-Inch Sec. 6 (Historical) - Completion of Monitor Well MW-2

Chevron Grayburg 6-Inch Sec. 6 (Historical) -
Installation of 4-Inch PVC Riser in Monitor Well MW-4

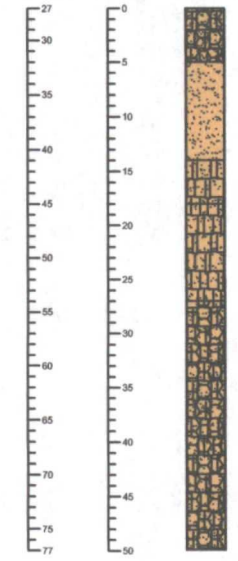


Chevron Grayburg 6-Inch Sec. 6 (Historical) -
Monitor Wells MW-3 (Foreground) & MW-2 (Background)

Appendix C

Soil Boring & Monitor Well Logs

Soil Boring SB-1



Depth Below Ground Surface	Drilling Depth	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
		295	Heavy	None	27 - 32' - Tan fine sand - caliche - sandstone
		(497)	Heavy	None	32' - 41' - Tan fine sand
		660	Heavy	None	
		582	Heavy	None	41 - 45' - Tan fine sand - cemented sandstone
		(787)	Heavy	None	45 - 54' - Tan fine sand - sandstone
		744	Heavy	None	
		760	Heavy	None	
		(1,193)	Heavy	None	54 - 77' - Tan fine sand - caliche - sandstone
		981	Heavy	None	
		(990)	Heavy	None	

Boring SB-1

Date Drilled: August 30, 2011
Thickness of Bentonite Seal: 77 Ft
Depth of Exploratory Boring: 77 Ft bgs
Depth to Groundwater: _____
Ground Water Elevation: _____

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

Completion Notes

1.) Soil boring was advanced on date using air rotary drilling techniques.
2.) Lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
3.) Borehole collapsed from approximately 72' to 77' bgs.

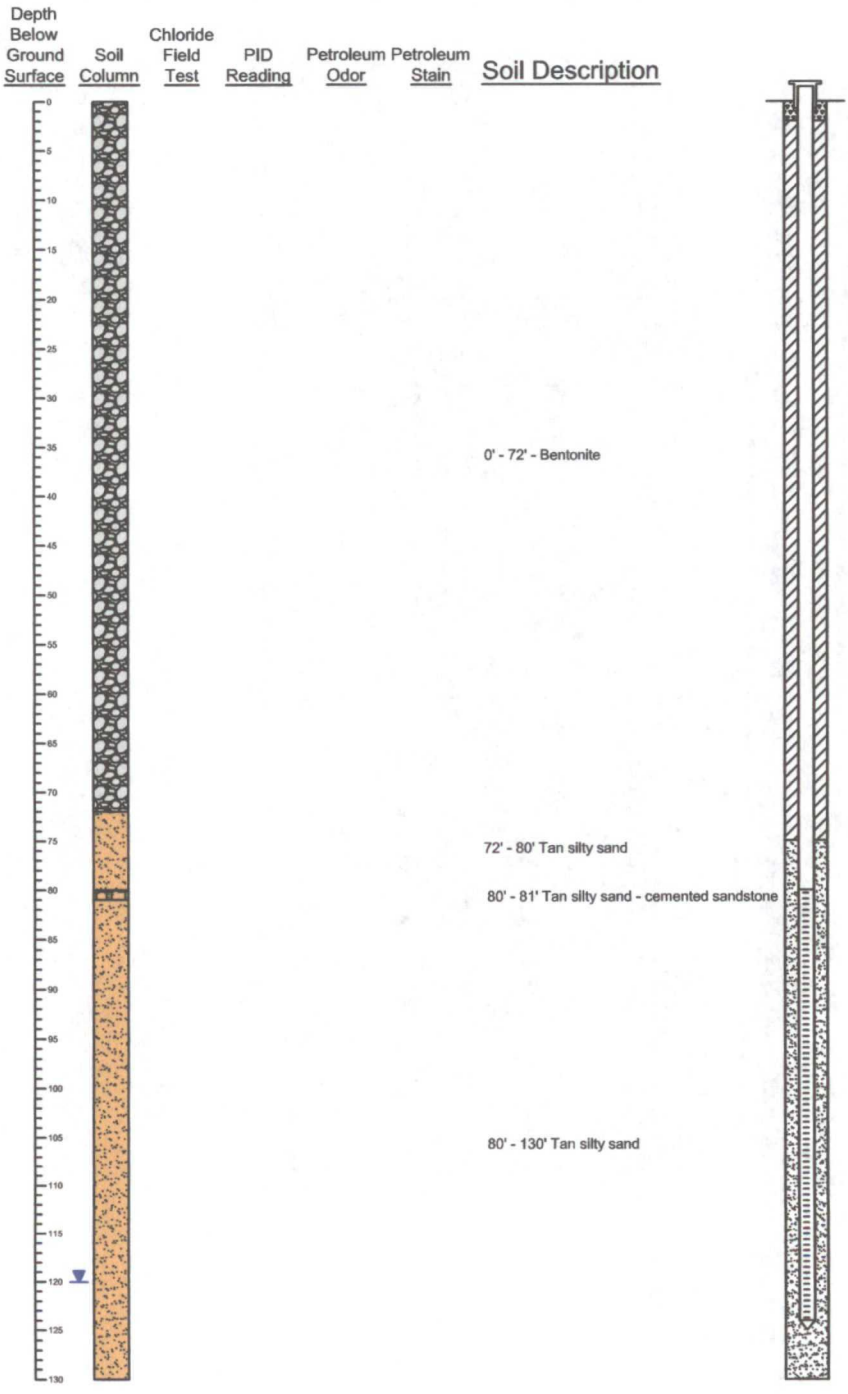
Soil Boring SB-1

Plains Pipeline, LP
Chevron Grayburg 6-Inch Sec. 6 (Historical)
Lea County, New Mexico
SRS #: Chevron Grayburg 6-Inch Historical
NMOCD Reference #: 1RP-2637

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

Prep By: BJA	Checked By: BRB
November 1, 2011	

Soil Boring SB-1/Monitor Well MW-1



Date Drilled June 15, 2012
Thickness of Bentonite Seal 73 Ft
Depth of Exploratory Boring 130 Ft bgs
Depth to Groundwater 120 Ft bgs
Ground Water Elevation

Indicates the PSH level measured on
Indicates the groundwater level measured on June 19, 2012
Indicates samples selected for Laboratory Analysis.
PID Head-space reading in ppm obtained with a photo-ionization detector.

Grout Surface Seal
Bentonite Pellet Seal
Sand Pack
Screen

Completion Notes

1.) Soil boring SB-1 was temporarily plugged on August 30, 2011, and re-entered on June 15, 2012.
2.) Monitor well was advanced on date using air rotary drilling techniques.
3.) Monitor well was constructed with 2" ID, 0.10-inch factory slotted, threaded joint, Schedule 40 PVC pipe.
4.) Well is protected with a locked stick-up steel cover and compression cap.
5.) Lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
6.) Depths indicated are referenced from ground surface.
7.) In order to remove the bentonite plug from the borehole, and to prevent collapse of the borehole at lower depths, water was injected throughout the entirety of the drilling process.
8.) Borehole collapsed from approximately 125' to 130' bgs.

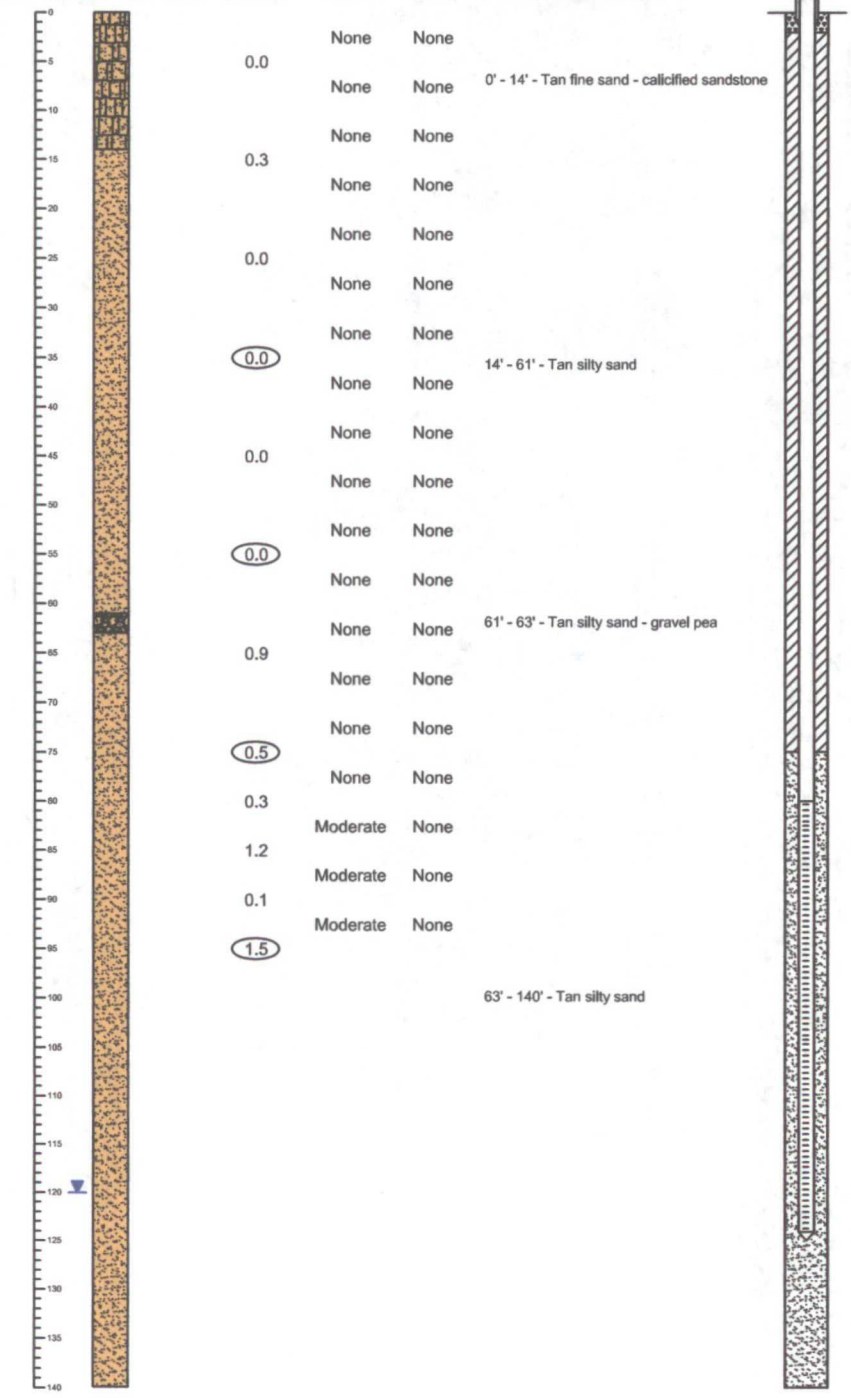
Soil Boring SB-1/ Monitor Well MW-1

Plains Pipeline, LP
Chevron Grayburg 6-Inch Sec. 6 (Historical)
Lea County, New Mexico
SRS Chevron Grayburg 6-Inch Historical
NMOCD Reference #: 1RP-2637

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

Prep By: BJA	Checked By: BRB
August 27, 2012	

Monitor Well MW-2



Depth Below Ground Surface	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0		None	None	
5	0.0			
		None	None	0' - 14' - Tan fine sand - calicified sandstone
10		None	None	
15	0.3			
		None	None	
20		None	None	
25	0.0			
		None	None	
30		None	None	
35	(0.0)			14' - 61' - Tan silty sand
		None	None	
40		None	None	
45	0.0			
		None	None	
50		None	None	
55	(0.0)			
		None	None	
60		None	None	61' - 63' - Tan silty sand - gravel pea
65	0.9			
		None	None	
70		None	None	
75	(0.5)			
		None	None	
80	0.3			
		Moderate	None	
85	1.2			
		Moderate	None	
90	0.1			
		Moderate	None	
95	(1.5)			
100				63' - 140' - Tan silty sand
105				
110				
115				
120				
125				
130				
135				
140				

Date Drilled June 14, 2012
Thickness of Bentonite Seal 73 Ft
Depth of Exploratory Boring 140 Ft bgs
Depth to Groundwater 120 Ft bgs
Ground Water Elevation

Indicates the PSH level measured on
Indicates the groundwater level measured on June 19, 2012
Indicates samples selected for Laboratory Analysis.
PID Head-space reading in ppm obtained with a photo-ionization detector.

Grout Surface Seal
Bentonite Pellet Seal
Sand Pack
Screen

Completion Notes

1.) Monitor well was advanced on date using air rotary drilling techniques.
2.) Monitor well was constructed with 2" ID, 0.10-inch, factory-slotted, threaded joint, Schedule 40 PVC pipe.
3.) Well is protected with a locked stick-up steel cover and compression cap.
4.) Lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5.) Depths indicated are referenced from ground surface.
6.) Due to the non-cohesive nature of the soil at lower depths, water was injected beginning at approximately 96' bgs to prevent collapse of the borehole.
7.) Borehole collapsed from approximately 125' to 140' bgs.

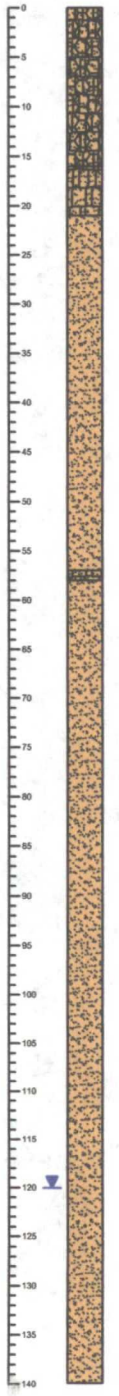
Monitor Well MW-2

Plains Pipeline, LP
Chevron Grayburg 6-Inch Sec. 6 (Historical)
Lea County, New Mexico
SRS Chevron Grayburg 6-Inch Historical
NMOCD Reference #: 1RP-2637

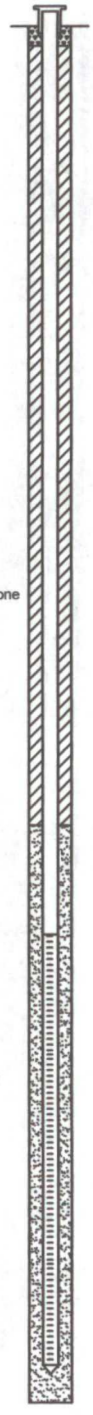
Basin Environmental Service Technologies, LLC
3100 Plains Hwy.
Lovington, NM 88260

Prep By: BJA	Checked By: BRB
August 27, 2012	

Monitor Well MW-3



Depth Below Ground Surface	Chloride Field Test	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
			None	None	
		0.0			
			None	None	0' - 16' - Tan fine sand - caliche - calicified sandstone
			None	None	
		0.2			
			None	None	16' - 21' - Tan fine sand - sandstone
			None	None	
		0.2			
			None	None	
			None	None	
		(0.2)			
			None	None	21' - 57' - Tan silty sand
			None	None	
		1.2			
			None	None	
			None	None	
		0.7			
			Slight	None	57' - 58' - Tan silty sand - siliceous sandstone
		6.4			
			Moderate	None	
		(79.8)			
			Moderate	None	
		42.0			
			Slight	None	
		13.3			
			Slight	None	
		6.3			
			Slight	None	
		13.5			
			Slight	None	
		8.8			
			Slight	None	
		(17.6)			
					58' - 140' - Tan silty sand



Date Drilled June 14 - 15, 2012
Thickness of Bentonite Seal 79 Ft
Depth of Exploratory Boring 140 Ft bgs
Depth to Groundwater 120 Ft bgs
Ground Water Elevation

Indicates the PSH level measured on
Indicates the groundwater level measured on June 19, 2012
Indicates samples selected for Laboratory Analysis.
PID Head-space reading in ppm obtained with a photo-ionization detector.

Grout Surface Seal
Bentonite Pellet Seal
Sand Pack
Screen

Completion Notes

1.) Monitor well was advanced on date using air rotary drilling techniques.
2.) Monitor well was constructed with 2" ID, 0.10-inch, factory-slotted, threaded joint, Schedule 40 PVC pipe.
3.) Well is protected with a locked stick-up steel cover and compression cap.
4.) Lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5.) Depths indicated are referenced from ground surface.
6.) Due to the non-cohesive nature of the soil at lower depths, water was injected beginning at approximately 96' bgs to prevent collapse of the borehole.
7.) Borehole collapsed from approximately 137' to 140' bgs.

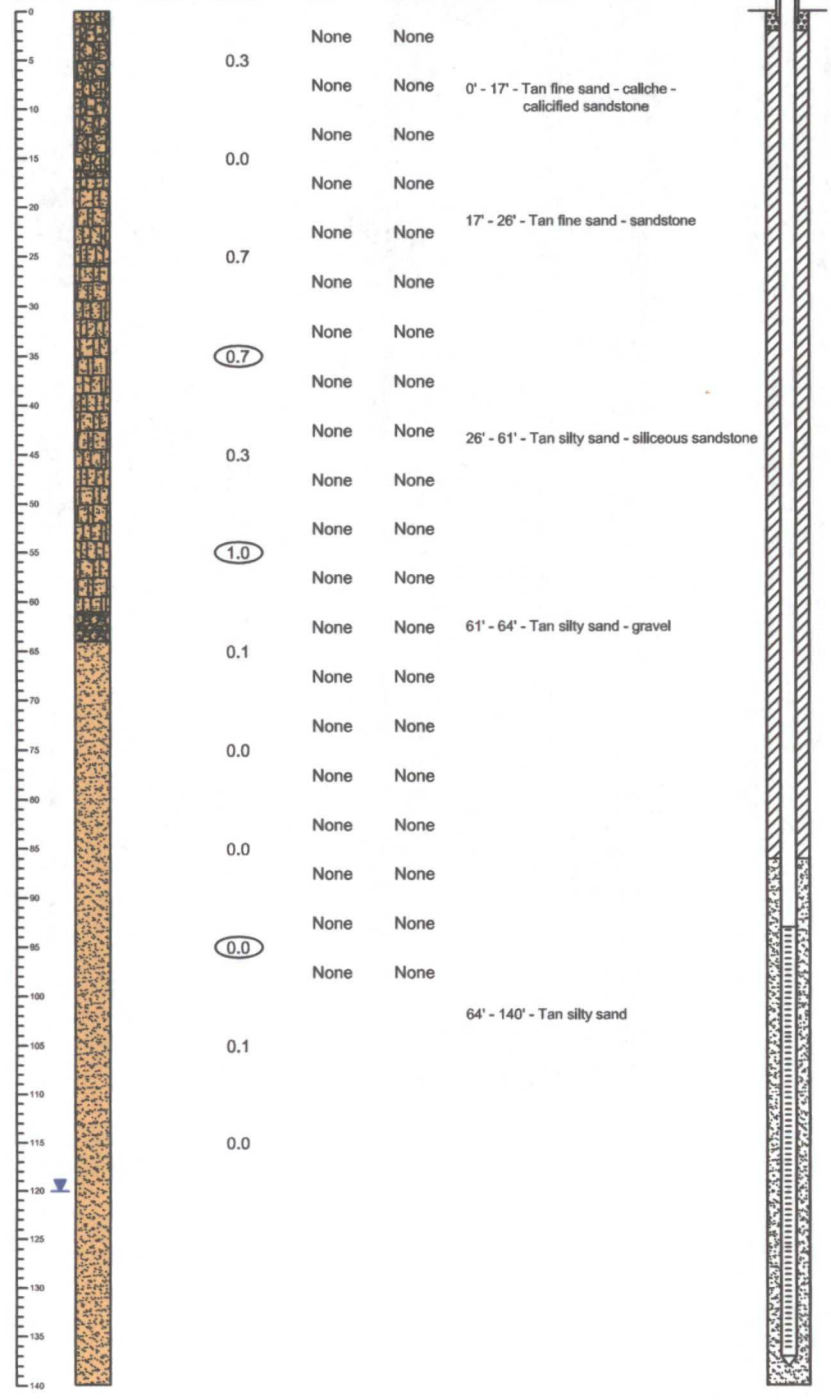
Monitor Well MW-3

Plains Pipeline, LP
Chevron Grayburg 6-Inch Sec. 6 (Historical)
Lea County, New Mexico
SRS Chevron Grayburg 6-Inch Historical
NMOCD Reference #: 1RP-2637

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

Prep By: BJA	Checked By: BRB
August 27, 2012	

Monitor Well MW-4



Depth Below Ground Surface	Chloride Field Test	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0			None	None	
5		0.3			
			None	None	0' - 17' - Tan fine sand - caliche - calicified sandstone
10			None	None	
15		0.0			
			None	None	
20			None	None	17' - 26' - Tan fine sand - sandstone
25		0.7			
			None	None	
30			None	None	
35		(0.7)			
			None	None	
40			None	None	26' - 61' - Tan silty sand - silliceous sandstone
45		0.3			
			None	None	
50			None	None	
55		(1.0)			
			None	None	
60			None	None	61' - 64' - Tan silty sand - gravel
65		0.1			
			None	None	
70			None	None	
75		0.0			
			None	None	
80			None	None	
85		0.0			
			None	None	
90			None	None	
95		(0.0)			
			None	None	
100					64' - 140' - Tan silty sand
105		0.1			
110					
115		0.0			
120					
125					
130					
135					
140					

Date Drilled June 18, 2012
Thickness of Bentonite Seal 84 Ft
Depth of Exploratory Boring 140 Ft bgs
Depth to Groundwater 120 Ft bgs
Ground Water Elevation

Indicates the PSH level measured on
Indicates the groundwater level measured on June 19, 2012
Indicates samples selected for Laboratory Analysis.
PID Head-space reading in ppm obtained with a photo-ionization detector.

Grout Surface Seal
Bentonite Pellet Seal
Sand Pack
Screen

Completion Notes

1.) Monitor well was advanced on date using air rotary drilling techniques.
2.) Monitor well was constructed with 4" ID, 0.10-inch, factory-slotted, threaded joint, Schedule 40 PVC pipe.
3.) Well is protected with a locked stick-up steel cover and compression cap.
4.) Lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5.) Depths indicated are referenced from ground surface.
6.) Due to the non-cohesive nature of the soil at lower depths, water was injected beginning at approximately 95' bgs to prevent collapse of the borehole.
7.) Borehole collapsed from approximately 138' to 140' bgs.

Monitor Well MW-4

Plains Pipeline, LP
Chevron Grayburg 6-Inch Sec. 6 (Historical)
Lea County, New Mexico
SRS Chevron Grayburg 6-Inch Historical
NMOCD Reference #: 1RP-2637

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

Prep By: BJA	Checked By: BRB
August 27, 2012	

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

May 17, 2012

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

Attn: Jeffrey P. Dann – Senior Environmental Specialist

Re: Approved New Mexico Water Easement No: WM-239

Dear Mr. Dann:

Enclosed, please find your approved original document(s) of WM-239. 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,

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

Enclosures

cc: File

NEW MEXICO STATE LAND OFFICE
WATER EASEMENT
(Monitoring)

NO. WM-239

THIS AGREEMENT, dated this **12th day of April, 2012,** 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**, a Delaware corporation, authorized to do business in New Mexico, by and through the undersigned, whose address is **333 Clay Street, Suite 1600 Houston, TX 77002** (Grantee). This Water Easement becomes effective upon the date it is signed by the Commissioner.

A. Grant of Easement:

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

Quarter-Quarter	*Section*	*Township*	*Range*	*Acreage*
Lot 1-5, SE4NW4, SW4NE4, SE4NE4	**6**	**18 South**	**3 East**	**314.94**

The **(4)** 2.5-acre well-site permitted under this Water Easement are as follows:

Well Designation(name/number)		**Expected Volume**
PMW-1	**PMW-3**	**10 gallons per day**
PMW-2	**PMW-4**	

***wells are located in Lot 2**

These well-sites may overlap.

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

B. Terms, Covenants, and Conditions:

1. Consideration for Grant: In addition to such fees as have been or shall be assessed for this Permit, Grantee shall provide to The Commissioner copies of all interim and final reports created during the monitoring process of which this well is a part.

2. Annual Rental; Payment: Grantee shall pay annual rental in the amount of **$ 2,000.00** to be due on or before **April 12** of each year. Payment of all sums due hereunder shall be made at the office of the Commissioner of Public Lands, 310 Santa Fe Trail, P.O. Box 1148, Santa Fe, New Mexico 87504-1148.

3. Term of Easement: The grant of this Water Monitoring Easement is for a term of five (5) years, commencing **April 12 ,2012** and expiring **April 11, 2017** unless terminated earlier as provided herein. Upon expiration, and upon thirty **(60)** 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.

Any loss of any kind, arising from the non-renewal of this Water Easement is acknowledged and accepted by the Grantee as a business risk and the Grantee's acknowledgement and acceptance shall be considered an inducement by Grantee to Grantor to enter this Water Easement, shall not be considered a "taking" of any rights or property of Grantee, and shall not be the basis of any action at law or in equity to recover damages of any kind.

4. Amendment: With the consent of the Commissioner, Grantee may add more monitoring wells to this easement as are necessary. The form of such amendments will be prescribed by the Commissioner. The term of this easement shall be unaffected by such amendments. Each additional well shall be subject to the terms of this Water Easement.

5. Relationship With Other State Agencies: Grantee shall comply with all applicable laws pertaining to, and with all rules and regulations and procedures of, any other state agency having proper jurisdiction over the water. Copies of any permits, licenses etc. obtained from the State Engineer shall be provided to the Commissioner herein.

6. Grantee Standard of Care: Grantee shall act prudently in drilling and monitoring water. "Prudent" within the context of this provision means that standard of care, operating and action of reasonable water user acting pursuant to provisions of New Mexico Water Law and any other applicable laws, rules, and regulations. When Grantee has completed monitoring use of the well, Grantee will plug the well and provide Commissioner written evidence of having done so.

7. Grantee Improvements: Grantee may make or place such improvements and equipment upon the easement land as may reasonably be necessary to the stated purposes of the grant of easement. No pipelines shall be installed. No Water Rights are to be obtained or developed. All Grantee improvements such as well housing, piping, casing, and related equipment installed or obtained by Grantee on the granted easement shall remain Grantee's sole property and liability.

Upon the termination, expiration or assignment of Grantee's interest in this easement, Grantee shall remove all such improvements, unless otherwise directed by the Commissioner. Any improvements left by Grantee without the Commissioner's consent shall continue to be Grantee's sole property and liability, shall be deemed in trespass, and shall give rise to such remedies for trespass and waste as may be available to the Commissioner at law or in equity.

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

9. Rights-of-way: Grantee shall have the right, without further consideration, upon reasonable notice to the Commissioner, to define and establish rights-of-way upon the surrounding **314.94** acres of trust land 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 **314.94** acres will be granted by the Commissioner in his discretion. No right-of-way, or other access across, or use of any lands other than those expressly granted in this water easement is implied or expressed.

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

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

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

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

14. Survey, Posting and Fencing: Grantee shall survey each well site and submit a copy of the survey plat to the Commissioner. Grantee shall post on each well a sign with the Grantee's name, Water 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.

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

16. Compliance With Laws: Grantee, including its heirs, assigns, agents and contractors shall at their own expense fully comply with all laws, regulations, rules, ordinances, and requirements of city, county, regional, state and federal authorities and agencies, in all matters and things affecting the premises and operations thereon which may be enacted or promulgated under the governmental police powers pertaining to public health and welfare, including but not limited to conservation, sanitation, aesthetics, pollution, cultural properties, fire, environment and the New Mexico Cultural Properties Act, NMSA 1978, 18-6-1 et. seq. Such agencies are not to be deemed third party beneficiaries hereunder; however, this clause is enforceable by the Commissioner as herein provided or as otherwise permitted by law.

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

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

18. Bond: Prior to commencement of operations under this Water 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.

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

20. No Waiver by Commissioner: No employee or agent of the Commissioner has the power, right, or authority to orally waive any of the conditions, covenants, or agreements of this easement; and no waiver by the Commissioner of any of the conditions, covenants, or agreements of this Easement shall be effective unless in writing and executed by the Commissioner. The Commissioner's waiver of Grantee's breach or default of any of the conditions, covenants, or agreements hereof shall not constitute or be construed as a waiver of any other or subsequent breach or default by Grantee. The failure of the Commissioner to enforce at any time any of the conditions, covenants, or agreements of this easement, or to exercise any option herein provided, or to require at any time performance by Grantee of any of the conditions, covenants, or agreements of this Easement shall not constitute or be construed to be a waiver of such conditions, covenants, or agreements, nor shall it affect the validity of this easement or any part thereof, or the Commissioner's right to thereafter enforce each and every such condition, covenant, or agreement.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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
333 Clay Street, Suite 1600
Houston, TX 77002
FAX: (713) 646.4680
Attn: Jeffrey P. Dann, Senior Environmental Specialist

2012 APR 5 AM 10 45

GRANTEE:

By Jeffrey P. Dann, Senior Environmental Specialist

STATE OF TEXAS)
) ss
COUNTY OF HARRIS)

Subscribed and sworn to before me this 3rd day of April 2012

by Jeffrey P. Dann, Grantee.

SHARVETTE WHITE
Notary Public, State of Texas
My Commission Expires
April 14, 2013

SEAL

April 14, 2013
MY COMMISSION EXPIRES

Sharvette White
NOTARY PUBLIC

Received $2,000.00 on February 8, 2012 :

☑ $500.00 per well fee, total cash due $ 0 ; and,

☐ $500.00 single-well bond, or

☑ $2,500.00 blanket bond (RLI Insurance Co.–rlb0000936)

COMMISSIONER

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

dated: 4/12/12

SEAL

2012 APR 5 AM 10 45

NEW MEXICO STATE LAND OFFICE
WATER RIGHTS AGREEMENT NO. WM-239

THIS AGREEMENT, is made and entered into this 17th day of April, 2012, by and 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** of **333 Clay Street, Suite 1600 Houston, TX 77002**, (the "Grantee").

1. The trust land which is the subject of Grantee's Water Easement is described as follows:

Quarter-Quarter	Section	Township	Range
Lot 1-5, SE4NW4, SW4NE4, SE4NE	6	18 South	3 East

All monitoring wells within the described Water Easement are governed by this Water Rights Agreement.

2. Grantee warrants that no water rights will be applied for or obtained while operating under Water Easement No. **WM-239**. If Grantee subsequently uses the well(s) permitted under said Water Easement for any purpose other than water monitoring, or seeks to obtain water rights fort any well within the said Water Easement, Grantee will obtain a new Water Easement from the Commissioner and enter into a new Water Rights Agreement.

3. The terms of this agreement are binding upon the successors in interest, heirs, devisees, agents and assigns of the Grantee, shall survive the termination of Grantee's Water Easement, and are hereby incorporated into any subsequent renewal of Grantee's Water Easement. Any dispute arising under the terms of this Agreement must be resolved through administrative contest pursuant to 19.2.15.1 et. seq. NMAC, and any subsequent appeal shall be in the First Judicial District Court of Santa Fe County. In the event that any provision of this Agreement is held invalid or unenforceable under applicable law, this Agreement shall be deemed not to include that provision and all other provisions shall remain in full force and effect. This Agreement shall not be altered, changed, or amended except by a written instrument executed by both parties.

Jeffrey P. Dann
GRANTEE

By: Jeffrey P. Dann

Title: Senior E.W. Specialist

2012 APR 5 AM 10 45

STATE OF TEXAS)
) ss
COUNTY OF HARRIS)

The foregoing Water Rights Agreement was subscribed and sworn to me this 3rd day of April, 2012 by Jeffrey P. Dann, Grantee.

(notary public) Sharvette White My Commission Expires: April 14, 2013

SHARVETTE WHITE
Notary Public, State of Texas
My Commission Expires
April 14, 2013

COMMISSIONER OF PUBLIC LANDS

Ray Powell /sworn

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

DATED: 4/17/12

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: 505484
File Nbr: L 13041

Jun. 13, 2012

PLAINS PIPELINE, LP
c/o BEN J. ARGUIJO (BASIN ENVIRONMENTAL)
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 06/30/2012, 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 06/30/2012.

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

Sincerely,

Margaret Wolf
(575)622-6521

Enclosure

explore

File No.

NEW MEXICO OFFICE OF THE STATE ENGINEER

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

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 2-31551 $ 5.00

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: **6/5/2012** Requested End Date: **6/5/2013**

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

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

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2012 JUN -6 A 8:25

FOR OSE INTERNAL USE — Application for Permit, Form wr-07, Rev 4/12/12

File Number: L-13041	Trn Number: 505484
Trans Description (optional): 4 MONITOR WELLS	
Sub-Basin: L	
PCW/LOG Due Date: 06/30/2013	

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

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 District VII (Cimarron) customers, provide a PLSS location in addition to above.

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves , Section, Township, Range*) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
MW-1	32 46 51.9 n	103 29 33.3 w	Unit Letter "A" (NE/NE), Section 6, Township 18 South, Range 35 East
MW-2	32 46 52.2 n	103 29 33.6 w	Unit Letter "A" (NE/NE), Section 6, Township 18 South, Range 35 East
MW-3	32 46 51.7 n	103 29 33.9 w	Unit Letter "A" (NE/NE), Section 6, Township 18 South, Range 35 East
MW-4	32 46 51.7 n	103 29 32.7 w	Unit Letter "A" (NE/NE), Section 6, Township 18 South, Range 35 East

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No If yes, how many_____

Other description relating well to common landmarks, streets, or other: **Driving directions: From Buckeye, NM, go south on NM 238 for 1.3 miles. Turn east on caliche road, and go 0.6 miles. Turn south to site.**

Well is on land owned by: **New Mexico State Land Office**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☐ Yes ☐ No
If yes, how many_____

Approximate depth of well (feet): **95.00**	Outside diameter of well casing (inches): **2" & 4"**
Driller Name: **Straub Corporation**	Driller License Number: **WD1478**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

Two (2) 2-inch and two (2) 4-inch monitor wells will be installed at approximately ninety-five feet (95') below ground surface to investigate the impact to groundwater following a release of crude oil at the site known as Chevron Grayburg 6-Inch Sec. 6. The monitor wells will also be used to track the downgradient migration of the contaminant plume over time (if applicable). Quraterly monitoring will continue until laboratory analytical results indicate contaminant levels are below the regulatory remediation action levels established for the site by the NM Oil Conservation Division.

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

2012 JUN -6 A 8:25
ROSWELL
STATE ENGINEER OFFICE

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: L-13041	Trn Number: 505484

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

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

ACKNOWLEDGEMENT

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

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

Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

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

Witness my hand and seal this 12th day of June 20 12, for the State Engineer,

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

By: Andy Mortensen
Signature

Print

Title: Acting District II Manager
Print

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2012 JUN 25 AM 8:04

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: L-13041	Trn Number: 505484

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

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.

LOG The Point of Diversion L 13041 POD1 must be completed and the Well Log filed on or before 06/30/2012.

LOG The Point of Diversion L 13041 POD2 must be completed and the Well Log filed on or before 06/30/2012.

LOG The Point of Diversion L 13041 POD3 must be completed and the Well Log filed on or before 06/30/2012.

LOG The Point of Diversion L 13041 POD4 must be completed and the Well Log filed on or before 06/30/2012.

No water shall be diverted from these wells except for testing purposes which shall not exceed ten (10) cumulative days unless a permit to use water from these wells is acquired from the Office of the State Engineer.

Should the permittee change the purpose of use to other than monitoring purposes, an application shall be acquired from the Office of the State Engineer.

The wells shall be constructed, maintained and operated that each water shall be confined to the aquifer in which it is encountered.

Trn Desc: L 13041 (4 MONITOR WELLS)

File Number: L 13041
Trn Number: 505484

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

ACTION OF STATE ENGINEER

Notice of Intention Rcvd:	Date Rcvd. Corrected:
Formal Application Rcvd: 06/06/2012	Pub. of Notice Ordered:
Date Returned - Correction:	Affidavit of Pub. Filed:

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

Witness my hand and seal this 12 day of Jun A.D., 2012

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

By: Andy Morley

Trn Desc: L 13041 (4 MONITOR WELLS)

File Number: L 13041
Trn Number: 505484

Appendix E

Laboratory Analytical Reports

Analytical Report 396290

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Chevron Grayburg 6" Sec 6

PPN AFE 14153

09-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)

09-NOV-10

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

Reference: XENCO Report No: **396290**
Chevron Grayburg 6" Sec 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 396290. 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. 396290 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 396290

PLAINS ALL AMERICAN EH&S, Midland, TX

Chevron Grayburg 6" Sec 6

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Stockpile	S	Nov-05-10 11:30		396290-001

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Chevron Grayburg 6" Sec 6

Project ID:	*PPN AFE 14153*	*Report Date:*	*09-NOV-10*
Work Order Number:	*396290*	*Date Received:*	*11/05/2010*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 396290

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Chevron Grayburg 6" Sec 6

Project Id: PPN AFE 14153
Contact: Jason Henry
Project Location: Lea County, NM

Date Received in Lab: Fri Nov-05-10 03:15 pm
Report Date: 09-NOV-10
Project Manager: Brent Barron, II

Analysis Requested								
	Lab Id:	396290-001						
	Field Id:	Stockpile						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Nov-05-10 11:30						
Percent Moisture	*Extracted:*							
	Analyzed:	Nov-09-10 08:15						
	Units/RL:	%	RL					
Percent Moisture		4.58	1.00					
TPH By SW8015 Mod	*Extracted:*	Nov-08-10 10:45						
	Analyzed:	Nov-08-10 16:57						
	Units/RL:	mg/kg	RL					
C6-C12 Gasoline Range Hydrocarbons		2230	156					
C12-C28 Diesel Range Hydrocarbons		4210	156					
C28-C35 Oil Range Hydrocarbons		ND	156					
Total TPH		6440	156					

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

Final 1.000

XENCO Laboratories

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.

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 396290,

Project ID: PPN AFE 14153

Lab Batch #: 831048 **Sample:** 578160-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/08/10 14:59

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.2	100	92	70-135	
o-Terphenyl	53.0	50.1	106	70-135	

Lab Batch #: 831048 **Sample:** 578160-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/08/10 15:18

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.7	99.6	94	70-135	
o-Terphenyl	60.0	49.8	120	70-135	

Lab Batch #: 831048 **Sample:** 578160-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/08/10 15:38

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.4	100	97	70-135	
o-Terphenyl	52.5	50.1	105	70-135	

Lab Batch #: 831048 **Sample:** 396290-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/08/10 16:57

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.5	121	70-135	
o-Terphenyl	56.6	49.8	114	70-135	

Lab Batch #: 831048 **Sample:** 396348-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/08/10 23:02

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	60.6	50.0	121	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 396290,

Project ID: PPN AFE 14153

Lab Batch #: 831048 **Sample:** 396348-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/08/10 23:24

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.2	100	96	70-135	
o-Terphenyl	50.2	50.2	100	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 396290 **Project ID:** PPN AFE 14153

Analyst: BEV **Date Prepared:** 11/08/2010 **Date Analyzed:** 11/08/2010

Lab Batch ID: 831048 **Sample:** 578160-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

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
BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	931	93	996	974	98	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	977	98	996	911	91	7	70-135	35	

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

Final 1.000

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order # : 396290 **Project ID:** PPN AFE 14153

Lab Batch ID: 831048 **QC- Sample ID:** 396348-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/08/2010 **Date Prepared:** 11/08/2010 **Analyst:** BEV

Reporting Units: mg/kg

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod **Analytes**	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**Spiked Sample %R [D]**	**Spike Added [E]**	**Duplicate Spiked Sample Result [F]**	**Spiked Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
C6-C12 Gasoline Range Hydrocarbons	ND	1100	1090	99	1100	981	89	11	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1100	843	77	1100	770	70	9	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

Final 1.000

XENCO Laboratories

Sample Duplicate Recovery

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 396290

Lab Batch #: 831044 **Project ID:** PPN AFE 14153

Date Analyzed: 11/09/2010 **Date Prepared:** 11/09/2010 **Analyst:** JLG

QC- Sample ID: 396373-003 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	1.82	1.99	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

Final 1.000

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 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 Fax No: (575) 396-1429

Sampler Signature:

e-mail: pm@basinenv.com

Project Name: Chevron Grayburg 6" Sec 6

Project #: PPN AFE 14153

Project Loc: Lea County, NM

PO #: PAA-J. Henry

Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)

ORDER #: 396290

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge	GW=Groundwater S=Soil/Soil	NP=Non-Potable Specify Oth	Analyze For: TCLP: TPH: 418.1 8015M 8015B	TOTAL: 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 X	RCI	N.O.R.M.			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
	Stockpile			11/5/2010	1130		1	x								Soil			X															X

Special Instructions: Run TPH, Hold for BTEX

Please send copy of report and invoice to Jason Henry, Plains Marketing, 2530 State Hwy. 214, Denver City, TX 79323

Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date 11/5/10	Time 1515	Received by ELOT: Lisa Murdock	Date 11-5-10	Time 15:15

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N/A
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 2.6 °C

Final 1.000

XENCO Laboratories

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

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

Prelogin / Nonconformance Report - Sample Log-In

Client: Basin Environmental
Date/Time: 11-5-10 15:15
Lab ID #: 396290
Initials: RM

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	Yes	No	(N/A)	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No.		Cooler 5 No.	
lbs 2.6 °C lbs °C lbs °C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact: ____ Contacted by: ____ Date/Time: ____

Regarding: ____

Corrective Action Taken: ____

Check all that apply:
☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis

Analytical Report 397213

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Chevron Grayburg 6" Sec 6

PPN AFE 14153

22-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)

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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)

22-NOV-10

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

Reference: XENCO Report No: **397213**
Chevron Grayburg 6" Sec 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 397213. 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. 397213 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

XENCO Laboratories

Sample Cross Reference 397213

PLAINS ALL AMERICAN EH&S, Midland, TX

Chevron Grayburg 6" Sec 6

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
N-SW	S	Nov-12-10 08:15		397213-001
S-SW	S	Nov-12-10 08:15		397213-002
W-SW	S	Nov-12-10 08:15		397213-003
E-SW	S	Nov-12-10 08:20		397213-004
Floor	S	Nov-12-10 08:20		397213-005

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Chevron Grayburg 6" Sec 6

Project ID:	*PPN AFE 14153*	*Report Date:*	*22-NOV-10*
Work Order Number:	*397213*	*Date Received:*	*11/12/2010*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-832951 BTEX by EPA 8021B
SW8021BM

Batch 832951, 1,4-Difluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 589366-1-BLK,397213-001.

SW8021BM

Batch 832951, Ethylbenzene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike.
Samples affected are: 397213-004, -003, -001.
The Laboratory Control Sample for Ethylbenzene, m_p-Xylenes , o-Xylene is within laboratory Control Limits

Certificate of Analysis Summary 397213

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Chevron Grayburg 6" Sec 6

Project Id: PPN AFE 14153
Contact: Jason Henry
Project Location: Lea County, NM

Date Received in Lab: Fri Nov-12-10 04:20 pm
Report Date: 22-NOV-10
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	397213-001		397213-002		397213-003		397213-004		397213-005	
	Field Id:	N-SW		S-SW		W-SW		E-SW		Floor	
	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-12-10 08:15		Nov-12-10 08:15		Nov-12-10 08:15		Nov-12-10 08:20		Nov-12-10 08:20	
Anions by E300	*Extracted:*										
	Analyzed:	Nov-15-10 17:06		Nov-15-10 17:06		Nov-15-10 17:06		Nov-15-10 17:06		Nov-15-10 17:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		34.0	8.44	33.8	4.34	45.0	4.39	65.1	4.46	46.3	4.42
BTEX by EPA 8021B	*Extracted:*	Nov-17-10 08:46				Nov-17-10 08:46		Nov-17-10 08:46			
	Analyzed:	Nov-18-10 10:16				Nov-18-10 09:55		Nov-18-10 09:33			
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL		
Benzene		ND	0.0010			ND	0.0010	ND	0.0011		
Toluene		0.0055	0.0020			ND	0.0021	ND	0.0021		
Ethylbenzene		0.0041	0.0010			ND	0.0010	ND	0.0011		
m_p-Xylenes		0.0053	0.0020			ND	0.0021	ND	0.0021		
o-Xylene		0.0010	0.0010			ND	0.0010	ND	0.0011		
Total Xylenes		0.0063	0.0010			ND	0.0010	ND	0.0011		
Total BTEX		0.0159	0.0010			ND	0.0010	ND	0.0011		
Percent Moisture	*Extracted:*										
	Analyzed:	Nov-16-10 08:15		Nov-16-10 08:15		Nov-16-10 08:15		Nov-16-10 08:15		Nov-16-10 08:15	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		ND	1.00	3.23	1.00	4.24	1.00	5.80	1.00	4.91	1.00
TPH By SW8015 Mod	*Extracted:*	Nov-15-10 13:00		Nov-15-10 13:00		Nov-15-10 13:00		Nov-15-10 13:00		Nov-15-10 13:00	
	Analyzed:	Nov-15-10 18:56		Nov-15-10 19:16		Nov-15-10 19:36		Nov-15-10 19:55		Nov-15-10 20:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.0	21.7	15.5	ND	15.6	ND	15.9	6230	78.6
C12-C28 Diesel Range Hydrocarbons		527	15.0	1740	15.5	794	15.6	26.6	15.9	15500	78.6
C28-C35 Oil Range Hydrocarbons		28.4	15.0	77.3	15.5	47.8	15.6	ND	15.9	367	78.6
Total TPH		555	15.0	1839	15.5	842	15.6	26.6	15.9	22097	78.6

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.

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

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

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.

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 397213, **Project ID:** PPN AFE 14153

Lab Batch #: 832951 **Sample:** 589366-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/18/10 08:30

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 832951 **Sample:** 589366-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/18/10 08:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 832951 **Sample:** 589366-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/18/10 09:12

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0236	0.0300	79	80-120	*
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 832951 **Sample:** 397213-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/18/10 09:33

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 832951 **Sample:** 397213-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/18/10 09:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 397213,

Project ID: PPN AFE 14153

Lab Batch #: 832951 **Sample:** 397213-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/18/10 10:16

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0229	0.0300	76	80-120	*
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 832951 **Sample:** 397213-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/18/10 12:46

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0334	0.0300	111	80-120	

Lab Batch #: 832951 **Sample:** 397213-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/18/10 13:07

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0358	0.0300	119	80-120	

Lab Batch #: 832079 **Sample:** 578781-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/10 17:59

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.3	99.7	72	70-135	
o-Terphenyl	36.5	49.9	73	70-135	

Lab Batch #: 832079 **Sample:** 578781-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/10 18:18

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.7	100	73	70-135	
o-Terphenyl	37.7	50.0	75	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 397213,

Project ID: PPN AFE 14153

Lab Batch #: 832079 **Sample:** 578781-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/10 18:37

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.3	101	73	70-135	
o-Terphenyl	35.7	50.3	71	70-135	

Lab Batch #: 832079 **Sample:** 397213-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/10 18:56

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.1	99.5	77	70-135	
o-Terphenyl	37.2	49.8	75	70-135	

Lab Batch #: 832079 **Sample:** 397213-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/10 19:16

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.3	99.9	72	70-135	
o-Terphenyl	35.7	50.0	71	70-135	

Lab Batch #: 832079 **Sample:** 397213-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/10 19:36

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.6	99.7	74	70-135	
o-Terphenyl	35.8	49.9	72	70-135	

Lab Batch #: 832079 **Sample:** 397213-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/10 19:55

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.7	99.7	71	70-135	
o-Terphenyl	35.7	49.9	72	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 397213,

Project ID: PPN AFE 14153

Lab Batch #: 832079 **Sample:** 397213-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/10 20:15

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.7	106	70-135	
o-Terphenyl	40.8	49.9	82	70-135	

Lab Batch #: 832079 **Sample:** 397213-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/10 20:35

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.8	100	73	70-135	
o-Terphenyl	36.4	50.1	73	70-135	

Lab Batch #: 832079 **Sample:** 397213-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/10 20:53

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.9	100	74	70-135	
o-Terphenyl	49.8	50.2	99	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 397213 **Project ID:** PPN AFE 14153

Analyst: ASA **Date Prepared:** 11/17/2010 **Date Analyzed:** 11/18/2010

Lab Batch ID: 832951 **Sample:** 589366-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

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	0.0994	0.0955	96	0.0998	0.1067	107	11	70-130	35	
Toluene	ND	0.0994	0.0925	93	0.0998	0.1035	104	11	70-130	35	
Ethylbenzene	ND	0.0994	0.0936	94	0.0998	0.1057	106	12	71-129	35	
m_p-Xylenes	ND	0.1988	0.1920	97	0.1996	0.2169	109	12	70-135	35	
o-Xylene	ND	0.0994	0.0945	95	0.0998	0.1056	106	11	71-133	35	

Analyst: LATCOR **Date Prepared:** 11/15/2010 **Date Analyzed:** 11/15/2010

Lab Batch ID: 832064 **Sample:** 832064-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300 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
Chloride	ND	10.0	10.5	105	10	11.2	112	6	75-125	20	

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

BS / BSD Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 397213 **Project ID:** PPN AFE 14153

Analyst: BEV **Date Prepared:** 11/15/2010 **Date Analyzed:** 11/15/2010

Lab Batch ID: 832079 **Sample:** 578781-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	984	99	1000	1010	101	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	979	98	1000	977	98	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 Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 397213

Lab Batch #: 832064 **Project ID:** PPN AFE 14153

Date Analyzed: 11/15/2010 **Date Prepared:** 11/15/2010 **Analyst:** LATCOR

QC- Sample ID: 397213-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	34.0	201	246	105	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

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order # : 397213 **Project ID:** PPN AFE 14153

Lab Batch ID: 832951 **QC- Sample ID:** 397213-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/18/2010 **Date Prepared:** 11/17/2010 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1057	0.0761	72	0.1064	0.0913	86	18	70-130	35	
Toluene	ND	0.1057	0.0739	70	0.1064	0.0852	80	14	70-130	35	
Ethylbenzene	ND	0.1057	0.0690	65	0.1064	0.0815	77	17	71-129	35	X
m_p-Xylenes	ND	0.2115	0.1387	66	0.2127	0.1652	78	17	70-135	35	X
o-Xylene	ND	0.1057	0.0716	68	0.1064	0.0807	76	12	71-133	35	X

Lab Batch ID: 832079 **QC- Sample ID:** 397213-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2010 **Date Prepared:** 11/15/2010 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1060	1060	100	1060	1070	101	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	26.6	1060	996	91	1060	1040	96	4	70-135	35	

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

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

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

XENCO Laboratories

Sample Duplicate Recovery

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 397213

Lab Batch #: 832064 **Project ID:** PPN AFE 14153

Date Analyzed: 11/15/2010 **Date Prepared:** 11/15/2010 **Analyst:** LATCOR

QC- Sample ID: 397213-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	34.0	35.0	3	20	

Lab Batch #: 832070

Date Analyzed: 11/16/2010 **Date Prepared:** 11/16/2010 **Analyst:** JLG

QC- Sample ID: 397213-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

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

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

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 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 Fax No: (575) 396-1429
Sampler Signature:
e-mail: pm@basinenv.com

Project Name: Chevron Grayburg 6" Sec 6
Project #: PPN AFE 14153
Project Loc: Lea County, NM
PO #: PAA-J. Henry
Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 397213

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TOTAL: TPH: 418.1 8015M 8015B	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 X	RCI	N.O.R.M.	Chlorides	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
	N-SW			11/12/2010	0815		1	X								Soil	X											X		X
	S-SW			11/12/2010	0815		1	X								Soil	X											X		X
	W-SW			11/12/2010	0815		1	X								Soil	X											X		X
	E-SW			11/12/2010	0820		1	X								Soil	X											X		X
	Floor			11/12/2010	0820		1	X								Soil	X											X		X

Special Instructions: Run TPH, Hold for BTEX
Please send copy of report and invoice to Jason Henry, Plains Marketing, 2530 State Hwy. 214, Denver City, TX 79323

Relinquished by:	Date	Time	Received by:	Date	Time
[signature] BSA	11/12/10 11/12/10	1300	[signature]	11-12-10	1300
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
[signature]	11/8/10	1620	Lisa Murdock	11-12-10	16:20

Laboratory Comments:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N NA
Labels on container(s) Y N
Custody seals on container(s) Y N
Custody seals on cooler(s) Y N
Sample Hand Delivered by Sampler/Client Rep. ? Y N
by Courier? UPS DHL FedEx Lone Star
4oz glass
Temperature Upon Receipt: 3.1 °C

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

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains

Date/Time: 11-12-10 16:20

Lab ID #: 397213

Initials: KM

Sample Receipt Checklist

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

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	3.1 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 412909

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Chevron Grayburg 6" Sec 6

PPN AFE 14153

14-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)

14-APR-11

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

Reference: XENCO Report No: **412909**
Chevron Grayburg 6" Sec 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 412909. 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. 412909 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 412909

PLAINS ALL AMERICAN EH&S, Midland, TX

Chevron Grayburg 6" Sec 6

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Release Point @ 24'	S	Apr-11-11 15:45		412909-001

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Chevron Grayburg 6" Sec 6

Project ID:	*PPN AFE 14153*	*Report Date:*	*14-APR-11*
Work Order Number:	*412909*	*Date Received:*	*04/12/2011*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 412909

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Chevron Grayburg 6" Sec 6

Project Id: PPN AFE 14153
Contact: Jason Henry
Project Location: Lea County, NM

Date Received in Lab: Tue Apr-12-11 12:07 pm
Report Date: 14-APR-11
Project Manager: Brent Barron, II

Analysis Requested								
	Lab Id:	412909-001						
	Field Id:	Release Point @ 24'						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Apr-11-11 15:45						
Inorganic Anions In Soil by E300	*Extracted:*							
	Analyzed:	Apr-12-11 14:42						
	Units/RL:	mg/kg	RL					
Chloride		49.3	5.30					
Percent Moisture	*Extracted:*							
	Analyzed:	Apr-12-11 17:00						
	Units/RL:	%	RL					
Percent Moisture		5.67	1.00					
TPH by SW8015 Mod	*Extracted:*	Apr-12-11 14:45						
	Analyzed:	Apr-12-11 19:59						
	Units/RL:	mg/kg	RL					
C6-C12 Gasoline Range Hydrocarbons		625	16.0					
C12-C28 Diesel Range Hydrocarbons		2370	16.0					
C28-C35 Oil Range Hydrocarbons		17.3	16.0					
Total TPH		3010	16.0					

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

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 412909,

Project ID: PPN AFE 14153

Lab Batch #: 851731 **Sample:** 600313-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/12/11 16:08

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.6	100	85	70-135	
o-Terphenyl	35.5	50.1	71	70-135	

Lab Batch #: 851731 **Sample:** 600313-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/12/11 16:37

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.6	104	70-135	
o-Terphenyl	44.5	49.8	89	70-135	

Lab Batch #: 851731 **Sample:** 600313-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/12/11 17:06

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.7	99.8	79	70-135	
o-Terphenyl	39.7	49.9	80	70-135	

Lab Batch #: 851731 **Sample:** 412909-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/12/11 19:59

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.0	100	88	70-135	
o-Terphenyl	43.2	50.2	86	70-135	

Lab Batch #: 851731 **Sample:** 412890-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/13/11 01:50

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.2	99.8	93	70-135	
o-Terphenyl	38.9	49.9	78	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 412909,

Project ID: PPN AFE 14153

Lab Batch #: 851731 **Sample:** 412890-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/13/11 02:20

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.2	100	89	70-135	
o-Terphenyl	39.7	50.0	79	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 412909 **Project ID:** PPN AFE 14153

Analyst: LATCOR **Date Prepared:** 04/12/2011 **Date Analyzed:** 04/12/2011

Lab Batch ID: 851768 **Sample:** 851768-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

Inorganic Anions In Soil by E300	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.500	10.0	10.3	103	10.0	10.9	109	6	75-125	20	

Analyst: BEV **Date Prepared:** 04/12/2011 **Date Analyzed:** 04/12/2011

Lab Batch ID: 851731 **Sample:** 600313-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

TPH by SW8015 Mod	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	754	75	996	755	76	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	782	78	996	750	75	4	70-135	35	

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

Form 3 - MS Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 412909
Lab Batch #: 851768
Project ID: PPN AFE 14153
Date Analyzed: 04/12/2011
Date Prepared: 04/12/2011
Analyst: LATCOR
QC- Sample ID: 412909-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	49.3	106	153	98	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: Chevron Grayburg 6" Sec 6

Work Order # : 412909 **Project ID:** PPN AFE 14153

Lab Batch ID: 851731 **QC- Sample ID:** 412890-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/13/2011 **Date Prepared:** 04/12/2011 **Analyst:** BEV

Reporting Units: mg/kg

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
TPH by SW8015 Mod **Analytes**	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<18.3	1220	926	76	1220	936	77	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<18.3	1220	952	78	1220	949	78	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

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 412909

Lab Batch #: 851768 **Project ID:** PPN AFE 14153

Date Analyzed: 04/12/2011 14:42 **Date Prepared:** 04/12/2011 **Analyst:** LATCOR

QC- Sample ID: 412909-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions In Soil by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	49.3	43.1	13	20	

Lab Batch #: 851701

Date Analyzed: 04/12/2011 17:00 **Date Prepared:** 04/12/2011 **Analyst:** WRU

QC- Sample ID: 412945-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	24.1	23.2	4	20	

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

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 Arguijo
Project Name: Chevron Grayburg 6" Sec 6
Company Name: Basin Environmental Service Technologies, LLC
Project #: PPN AFE 14153
Company Address: P.O. Box 301
Project Loc: Lea County, NM
City/State/Zip: Lovington, NM 88260
PO #: PAA-J. Henry
Telephone No: (575)396-2378
Fax No: (575) 396-1429
Report Format: [X] Standard [ ] TRRP [ ] NPDES
Sampler Signature:
e-mail: bjarguijo@basinenv.com

(lab use only)
ORDER #: 417909

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH 418.1	8015M	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	TOTAL: BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
01	Release Point @ 24'			4/11/2011	1545		1	X								Soil	X										X				X		X

Special Instructions: Run TPH, Hold for BTEX

Relinquished by:	Date	Time	Received by:	Date	Time
	4/12/11	7:10		4-12-11	7:10
Relinquished by:	Date	Time	Received by:	Date	Time
	4-12-11	12:07			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Andrea Elam	4.12.11	12:07

Laboratory Comments:

Sample Containers Intact?		N
VOCs Free of Headspace?		N
Labels on container(s)		N
Custody seals on container(s)		N
Custody seals on cooler(s)		N
Sample Hand Delivered		N
by Sampler/Client Rep. ?		
by Courier?	UPS DHL FedEx Lone Star	
	4029619155	
Temperature Upon Receipt:	2.1 °C	

Final 1.001

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

Prelogin / Nonconformance Report - Sample Log-In

Client: Basin Env. / Plains

Date/Time: 4.12.11 12:07

Lab ID #: 412909

Initials: AZ

Sample Receipt Checklist

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

18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 2.1 °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 418528

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Chevron Grayburg 6" Sec 6

PPN AFE 14153

06-JUN-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 (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)

XENCO Laboratories

06-JUN-11

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

Reference: XENCO Report No: **418528**
Chevron Grayburg 6" Sec 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 418528. 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. 418528 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

XENCO Laboratories

Sample Cross Reference 418528

PLAINS ALL AMERICAN EH&S, Midland, TX

Chevron Grayburg 6" Sec 6

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
South Wall (S-SW)	S	Jun-02-11 00:00		418528-001

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Chevron Grayburg 6" Sec 6

Project ID:	*PPN AFE 14153*	*Report Date:*	*06-JUN-11*
Work Order Number:	*418528*	*Date Received:*	*06/02/2011*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 418528

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Chevron Grayburg 6" Sec 6

Project Id: PPN AFE 14153
Contact: Jason Henry
Project Location: Lea County, NM

Date Received in Lab: Thu Jun-02-11 02:00 pm
Report Date: 06-JUN-11
Project Manager: Brent Barron, II

Analysis Requested								
	Lab Id:	418528-001						
	Field Id:	South Wall (S-SW)						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Jun-02-11 00:00						
BTEX by EPA 8021	*Extracted:*	Jun-03-11 12:16						
	Analyzed:	Jun-03-11 15:44						
	Units/RL:	mg/kg	RL					
Benzene		ND	0.0010					
Toluene		ND	0.0021					
Ethylbenzene		ND	0.0010					
m_p-Xylenes		ND	0.0021					
o-Xylene		ND	0.0010					
Xylenes, Total		ND	0.0010					
Total BTEX		ND	0.0010					
Percent Moisture	*Extracted:*							
	Analyzed:	Jun-02-11 17:00						
	Units/RL:	%	RL					
Percent Moisture		3.62	1.00					
TPH by SW8015 Mod	*Extracted:*	Jun-02-11 14:00						
	Analyzed:	Jun-02-11 19:29						
	Units/RL:	mg/kg	RL					
C6-C12 Gasoline Range Hydrocarbons		ND	15.6					
C12-C28 Diesel Range Hydrocarbons		ND	15.6					
C28-C35 Oil Range Hydrocarbons		ND	15.6					
Total TPH		ND	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.

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 418528,

Project ID: PPN AFE 14153

Lab Batch #: 858701 **Sample:** 604346-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/03/11 13:27

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 858701 **Sample:** 604346-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/03/11 14:13

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0334	0.0300	111	80-120	

Lab Batch #: 858701 **Sample:** 604346-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/03/11 15:21

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 858701 **Sample:** 418528-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/03/11 15:44

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0336	0.0300	112	80-120	

Lab Batch #: 858701 **Sample:** 418528-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/03/11 21:03

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0337	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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Chevro.. Grayburg 6" Sec 6

Work Orders : 418528,

Project ID: PPN AFE 14153

Lab Batch #: 858701 **Sample:** 418528-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/03/11 21:26

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
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	0.0346	0.0300	115	80-120	

Lab Batch #: 858473 **Sample:** 604217-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/02/11 16:39

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.6	103	70-135	
o-Terphenyl	42.8	49.8	86	70-135	

Lab Batch #: 858473 **Sample:** 604217-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/02/11 17:08

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	45.5	50.1	91	70-135	

Lab Batch #: 858473 **Sample:** 604217-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/02/11 17:36

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.3	99.9	95	70-135	
o-Terphenyl	47.2	50.0	94	70-135	

Lab Batch #: 858473 **Sample:** 418528-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/02/11 19:29

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	55.3	50.2	110	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 418528,

Project ID: PPN AFE 14153

Lab Batch #: 858473 **Sample:** 418504-009 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/03/11 03:29

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.9	114	70-135	
o-Terphenyl	47.5	50.0	95	70-135	

Lab Batch #: 858473 **Sample:** 418504-009 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/03/11 03:57

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.5	122	70-135	
o-Terphenyl	50.4	49.8	101	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Final 1.000

BS / BSD Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 418528 **Project ID:** PPN AFE 14153

Analyst: ASA **Date Prepared:** 06/03/2011 **Date Analyzed:** 06/03/2011

Lab Batch ID: 858701 **Sample:** 604346-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BTEX by EPA 8021	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.101	101	0.100	0.104	104	3	70-130	35	
Toluene	<0.00200	0.100	0.104	104	0.100	0.108	108	4	70-130	35	
Ethylbenzene	<0.00100	0.100	0.102	102	0.100	0.106	106	4	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.219	110	0.200	0.227	114	4	70-135	35	
o-Xylene	<0.00100	0.100	0.116	116	0.100	0.122	122	5	71-133	35	

Analyst: BEV **Date Prepared:** 06/02/2011 **Date Analyzed:** 06/02/2011

Lab Batch ID: 858473 **Sample:** 604217-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

TPH by SW8015 Mod	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<14.9	996	767	77	1000	790	79	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<14.9	996	775	78	1000	777	78	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

Final 1.000

Form 3 - MS / MSD Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 418528 **Project ID:** PPN AFE 14153

Lab Batch ID: 858701 **QC- Sample ID:** 418528-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/03/2011 **Date Prepared:** 06/03/2011 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00103	0.103	0.0816	79	0.103	0.0866	84	6	70-130	35	
Toluene	<0.00206	0.103	0.0853	83	0.103	0.0893	87	5	70-130	35	
Ethylbenzene	<0.00103	0.103	0.0824	80	0.103	0.0876	85	6	71-129	35	
m_p-Xylenes	<0.00206	0.206	0.176	85	0.206	0.185	90	5	70-135	35	
o-Xylene	<0.00103	0.103	0.0952	92	0.103	0.0993	96	4	71-133	35	

Lab Batch ID: 858473 **QC- Sample ID:** 418504-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/03/2011 **Date Prepared:** 06/02/2011 **Analyst:** BEV

Reporting Units: mg/kg

TPH by SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.5	1040	815	78	1030	874	85	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	38.2	1040	845	78	1030	920	86	8	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

Final 1.000

Sample Duplicate Recovery

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 418528

Lab Batch #: 858447 **Project ID:** PPN AFE 14153

Date Analyzed: 06/02/2011 17:00 **Date Prepared:** 06/02/2011 **Analyst:** WRU

QC- Sample ID: 418439-001 D **Batch #:** 1 **Matrix:** Solid

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	<1.00	<1.00	0	20	

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

Xenco Laboratories

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

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

Project Manager: Ben Arguijo
Project Name: Chevron Grayburg 6" Sec 6

Company Name: Basin Environmental Service Technologies, LLC
Project #: PPN AFE 14153

Company Address: P.O. Box 301
Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260
PO #: PAA-J. Henry

Telephone No: (575)396-2378 Fax No: (575) 396-1429
Report Format: [X] Standard [ ] TRRP [ ] NPDES

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

(lab use only)
ORDER #: 419528

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 / 8015M	TOTAL: 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	N.O.R.M.	Chlorides	TCLP (Pre-Scheduled 24, 48, 72 hrs)	RUSH TAT	Standard TAT 4 DAY
01	South Wall (S-SW)			6/2/2011			1	X								Soil	X									X						X	

Special Instructions: Run TPH, Hold for BTEX
RUSH

Relinquished by:	Date	Time	Received by:	Date	Time
	6/2/11	1400			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Andrea Elam	6.2.11	14:00

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star
402916955
Temperature Upon Receipt: 3.6 °C

XENCO Laboratories

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: 6-2-11 14.00
Lab ID # : 418528
Initials: AE

Sample Receipt Checklist

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

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	3.6°C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 420044

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Chevron Grayburg 6" Sec 6

PPN AFE 14153

20-JUN-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 (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 (AALII), 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)

20-JUN-11

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

Reference: XENCO Report No: 420044
Chevron Grayburg 6" Sec 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 420044. 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. 420044 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

XENCO Laboratories

Sample Cross Reference 420044

PLAINS ALL AMERICAN EH&S, Midland, TX

Chevron Grayburg 6" Sec 6

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Stockpile # 1	S	Jun-15-11 11:10		420044-001
Stockpile # 2	S	Jun-15-11 11:15		420044-002

Project ID: PPN AFE 14153 Report Date: 20-JUN-11

Work Order Number: 420044 Date Received: 06/15/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 420044

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Chevron Grayburg 6" Sec 6

Project Id: PPN AFE 14153
Contact: Jason Henry
Project Location: Lea County, NM

Date Received in Lab: Wed Jun-15-11 05:03 pm
Report Date: 20-JUN-11
Project Manager: Brent Barron, II

Analysis Requested									
	Lab Id:	420044-001		420044-002					
	Field Id:	Stockpile # 1		Stockpile # 2					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	Jun-15-11 11:10		Jun-15-11 11:15					
Inorganic Anions In Soil by E300	*Extracted:*								
	Analyzed:	Jun-17-11 14:47		Jun-17-11 14:47					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		84.5	10.2	57.0	20.8				
Percent Moisture	*Extracted:*								
	Analyzed:	Jun-16-11 17:00		Jun-16-11 17:00					
	Units/RL:	%	RL	%	RL				
Percent Moisture		1.74	1.00	3.69	1.00				
TPH by SW8015 Mod	*Extracted:*	Jun-16-11 15:00		Jun-16-11 15:00					
	Analyzed:	Jun-18-11 02:30		Jun-18-11 07:16					
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		207	15.3	134	15.5				
C12-C28 Diesel Range Hydrocarbons		3600	15.3	2380	15.5				
C28-C35 Oil Range Hydrocarbons		ND	15.3	ND	15.5				
Total TPH		3810	15.3	2510	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.

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 420044,

Project ID: PPN AFE 14153

Lab Batch #: 860738 **Sample:** 605527-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/17/11 15:26

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.4	100	91	70-135	
o-Terphenyl	47.0	50.1	94	70-135	

Lab Batch #: 860738 **Sample:** 605527-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/17/11 15:56

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.9	99.9	92	70-135	
o-Terphenyl	43.9	50.0	88	70-135	

Lab Batch #: 860738 **Sample:** 605527-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/17/11 16:25

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.7	100	75	70-135	
o-Terphenyl	42.1	50.2	84	70-135	

Lab Batch #: 860738 **Sample:** 420044-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/18/11 02:30

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	61.1	50.1	122	70-135	

Lab Batch #: 860741 **Sample:** 605529-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/18/11 05:49

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	100	94	70-135	
o-Terphenyl	47.7	50.1	95	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6th Sec 6

Work Orders : 420044,

Project ID: PPN AFE 14153

Lab Batch #: 860741 **Sample:** 605529-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/18/11 06:19

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	99.9	94	70-135	
o-Terphenyl	45.9	50.0	90	70-135	

Lab Batch #: 860741 **Sample:** 605529-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/18/11 06:48

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76....	100	76	70-135	
o-Terphenyl	43.1	50.2	86	70-135	

Lab Batch #: 860741 **Sample:** 420044-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/18/11 07:16

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.9	99.8	100	70-135	
o-Terphenyl	53.9	49.9	108	70-135	

Lab Batch #: 860741 **Sample:** 420038-005 D / MD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/18/11 17:35

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.5	118	70-135	
o-Terphenyl	66.4	49.8	133	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 420044 **Project ID:** PPN AFE 14153

Analyst: LATCOR **Date Prepared:** 06/17/2011 **Date Analyzed:** 06/17/2011

Lab Batch ID: 860622 **Sample:** 860622-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

Inorganic Anions In Soil by E300	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.500	10.0	9.72	97	10.0	10.8	108	11	75-125	20	

Analyst: BEV **Date Prepared:** 06/16/2011 **Date Analyzed:** 06/17/2011

Lab Batch ID: 860738 **Sample:** 605527-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

TPH by SW8015 Mod	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	768	77	999	765	77	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	785	79	999	792	79	1	70-135	35	

Analyst: BEV **Date Prepared:** 06/16/2011 **Date Analyzed:** 06/18/2011

Lab Batch ID: 860741 **Sample:** 605529-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

TPH by SW8015 Mod	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	788	79	999	786	79	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	801	80	999	793	79	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

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Form 3 - MS Recoveries

Project Name: Chevron Grayburg 5" Sec 6

Work Order #: 420044

Lab Batch #: 860622

Project ID: PPN AFE 14153

Date Analyzed: 06/17/2011

Date Prepared: 06/17/2011

Analyst: LATCOR

QC- Sample ID: 420040-004 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	44.9	101	136	120	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

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 420044

Lab Batch #: 860622 **Project ID:** PPN AFE 14153

Date Analyzed: 06/17/2011 14:47 **Date Prepared:** 06/17/2011 **Analyst:** LATCOR

QC- Sample ID: 420040-004 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions In Soil by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	14.9	14.9	0	20	

Lab Batch #: 860369

Date Analyzed: 06/16/2011 17:00 **Date Prepared:** 06/16/2011 **Analyst:** WRU

QC- Sample ID: 420023-009 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.69	8.33	8	20	

Lab Batch #: 860741

Date Analyzed: 06/18/2011 17:35 **Date Prepared:** 06/16/2011 **Analyst:** BEV

QC- Sample ID: 420038-005 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

TPH by SW8015 Mod	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.3	<15.3	0	35	
C12-C28 Diesel Range Hydrocarbons	1450	1540	6	35	
C28-C35 Oil Range Hydrocarbons	17.3	20.8	18	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

Final 1.000

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 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
Fax No: (575) 396-1429
Sampler Signature: [signature]
e-mail: bjarguijo@basinenv.com

Project Name: Chevron Grayburg 6" Sec 6
Project #: PPN AFE 14153
Project Loc: Lea County, NM
PO #: PAA-J. Henry
Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 420044

Analyze For: TCLP: / TOTAL: X (BTEX)

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix (DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other)	TPH: 418.1 ~~8015M~~ 8015B	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	N.O.R.M.		Chlorides		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
01	Stockpile #1			6/15/2011	1110		1	X								Soil	X												X			X
02	Stockpile #2			6/15/2011	1115		1	X								Soil	X												X			X

Special Instructions: Run TPH, Hold for BTEX

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	6-15-11	5:04			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: [signature]	6/15/11	5:03

Laboratory Comments:
Sample Containers Intact? (Y) N
VOCs Free of Headspace? (Y) N
Labels on container(s) (Y) N
Custody seals on container(s) (Y) N
Custody seals on cooler(s) (Y) N
Sample Hand Delivered (Y) N
by Sampler/Client Rep. ? (Y) N
by Courier? UPS DHL FedEx Lone Star
Temperature Upon Receipt: 4.0 2.9 , 1 °C

XENCO Laboratories

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

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

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains
Date/Time: 6/15/11 5:03
Lab ID # : 420044
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	N/A	
4. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
6. Any missing / extra samples?	Yes	No		
7. Chain of custody signed when relinquished / received?	Yes	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Yes	No		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	N/A	
17. VOC sample have zero head space?	Yes	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	0.1 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by TNRCC 5.5.8.3.1(a).
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 421328

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Chevron Grayburg 6" Sec 6

PPN AFE 14153

06-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 (96015), 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)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

XENCO Laboratories

06-JUL-11

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

Reference: XENCO Report No: 421328
Chevron Grayburg 6" Sec 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 421328. 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. 421328 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 - Midland - Atlanta - Corpus Christi - Latin America

XENCO Laboratories

Sample Cross Reference 421328

PLAINS ALL AMERICAN EH&S, Midland, TX

Chevron Grayburg 6" Sec 6

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Stockpile # 1 A	S	Jan-28-11 08:50		421328-001

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Chevron Graysburg 6" Sec 6

Project ID:	*PPN AFE 14153*	*Report Date:*	*06-JUL-11*
Work Order Number:	*421328*	*Date Received:*	*06/28/2011*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-862110 TPH by SW8015 Mod
SW8015MOD_NM

Batch 862110, o-Terphenyl recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 421328-001 D,421328-001.

Batch: LBA-862632 Inorganic Anions In Soil by E300
E300
The RPD between the Sample and Sample Duplicate was above the QC limits. This is most likely due to sample non-homogeniety.

Certificate of Analysis Summary 421328

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Chevron Grayburg 6" Sec 6

Project Id: PPN AFE 14153
Contact: Jason Henry
Project Location: Lea County, NM

Date Received in Lab: Tue Jun-28-11 02:35 pm
Report Date: 06-JUL-11
Project Manager: Brent Barron, II

Analysis Requested								
	Lab Id:	421328-001						
	Field Id:	Stockpile # 1 A						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Jun-28-11 08:50						
Inorganic Anions In Soil by E300	*Extracted:*							
	Analyzed:	Jul-05-11 10:28						
	Units/RL:	mg/kg	RL					
Chloride		74.8	10.3					
Percent Moisture	*Extracted:*							
	Analyzed:	Jun-28-11 15:15						
	Units/RL:	%	RL					
Percent Moisture		3.25	1.00					
TPH by SW8015 Mod	*Extracted:*	Jun-29-11 09:15						
	Analyzed:	Jun-29-11 20:10						
	Units/RL:	mg/kg	RL					
C6-C12 Gasoline Range Hydrocarbons		133	77.4					
C12-C28 Diesel Range Hydrocarbons		2570	77.4					
C28-C35 Oil Range Hydrocarbons		131	77.4					
Total TPH		2830	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.

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Orders : 421328,

Project ID: PPN AFE 14153

Lab Batch #: 862110 **Sample:** 606845-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/29/11 15:54

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	57.3	50.2	114	70-135	

Lab Batch #: 862110 **Sample:** 606845-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/29/11 16:26

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	58.1	50.2	116	70-135	

Lab Batch #: 862110 **Sample:** 606845-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/29/11 16:58

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	57.0	50.2	114	70-135	

Lab Batch #: 862110 **Sample:** 421328-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/11 20:10

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	99.8	130	70-135	
o-Terphenyl	78.0	49.9	156	70-135	*

Lab Batch #: 862110 **Sample:** 421328-001 D / MD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/30/11 04:04

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	134	99.8	134	70-135	
o-Terphenyl	79.2	49.9	159	70-135	*

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

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

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

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XENCO Laboratories

BS / BSD Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 421328 **Project ID:** PPN AFE 14153

Analyst: BRB **Date Prepared:** 07/05/2011 **Date Analyzed:** 07/05/2011

Lab Batch ID: 862632 **Sample:** 862632-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

Inorganic Anions In Soil by E300	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<1.00	20.0	18.8	94	20.0	19.8	99	5	75-125	20	

Analyst: BEV **Date Prepared:** 06/29/2011 **Date Analyzed:** 06/29/2011

Lab Batch ID: 862110 **Sample:** 606845-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

TPH by SW8015 Mod	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	838	84	1000	835	84	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	874	87	1000	853	85	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

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: Chevron Grayburg 6" Sec 6

Work Order #: 421328

Lab Batch #: 862632

Project ID: PPN AFE 14153

Date Analyzed: 07/05/2011

Date Prepared: 07/05/2011

Analyst: BRB

QC- Sample ID: 421328-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	213	207	301	109	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

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Sample Duplicate Recovery

Project Name: Chevron Co[illegible]burg 6" Sec [illegible]

Work Order #: 421328

Lab Batch #: 862632 **Project ID:** PPN AFE 14153

Date Analyzed: 07/05/2011 10:28 **Date Prepared:** 07/05/2011 **Analyst:** BRB

QC- Sample ID: 421328-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions In Soil by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	74.6	96.2	25	20	F

Lab Batch #: 861901

Date Analyzed: 06/28/2011 10:30 **Date Prepared:** 06/28/2011 **Analyst:** WRU

QC- Sample ID: 421231-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	1.26	1.29	11	20	

Lab Batch #: 862110

Date Analyzed: 06/30/2011 04:04 **Date Prepared:** 06/29/2011 **Analyst:** BEV

QC- Sample ID: 421328-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

TPH by SW8015 Mod	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	132	122	9	35	
C12-C28 Diesel Range Hydrocarbons	2570	2630	2	35	
C28-C35 Oil Range Hydrocarbons	131	140	7	35	

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

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 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 Fax No: (575) 396-1429

Sampler Signature: Dakota Walk e-mail: bjarguijo@basinenv.com

Project Name: Chevron Grayburg 6" Sec 6

Project #: PPN AFE 14153

Project Loc: Lea County, NM

PO #: PAA-J. Henry

Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only) ORDER #: 401328

Analyze For:

TCLP:

TOTAL:

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	NaHSO4	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH 418.1	8015M	TPH TX 1005	TX 1005	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	N.O.R.M.	Chlorides	PRESERVATION (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
01	Stockpile #1A			6/28/2011	0850		1	X								Soil	X													X		X
	~~Stockpile #2A~~ DTW			~~6/28/2011~~ BTL	~~0850~~ DTL		~~1~~ 4	X								~~Soil~~	X													X		X

Special Instructions: Run TPH, Hold for BTEX

Relinquished by:	Date	Time	Received by:	Date	Time
Dakota Walk	6/28	7:35			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: C. Hernandez	Date 6/28/11	Time 2:35

Laboratory Comments:

Sample Containers Intact? Y N

VOCs Free of Headspace? Y N

Labels on container(s) Y N

Custody seals on container(s) Y N

Custody seals on cooler(s) Y N

Sample Hand Delivered Y N

by Sampler/Client Rep. ?

by Courier? UPS DHL FedEx Lone Star

4 oz C.G.

Temperature Upon Receipt: 3.1 2.6 °C AH 6/28/11

Page 1 of 2

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XENCO Laboratories	XENCO Laboratories Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Phoenix, Tampa	Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains

Date/Time: 6/28/11 2:35

Lab ID #: 421328

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	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	(No)	No		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	(Yes)	No	(N/A)	
17. VOC sample have zero head space?	(Yes)	No	(N/A)	

18. Cooler 1 No.		**Cooler 2 No.**		**Cooler 3 No.**		**Cooler 4 No.**		**Cooler 5 No.**	
lbs	3.1 **°C**	**lbs**	**°C**		**°C**	**lbs**	**°C**	**lbs**	**°C**

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 423684

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Chevron Grayburg 6" Sec 6

PPN AFE 1153

21-[illegible]

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 (LAO00314), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALII), 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: TX01158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ00989): Arizona (AZ0758)

XENCO Laboratories

21-JUL-11

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

Reference: XENCO Report No: 423684
Chevron Grayburg 6" Sec 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 423684. 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, are recorded in Report No. 423684 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 - Midland - Atlanta - Corpus Christi - Latin America

XENCO Laboratories

Sample Cross Reference 423684

PLAINS ALL AMERICAN EH&S, Midland, TX

Chevron Grayburg 6" Sec 6

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Stockpile	S	Jul-19-11 17:00		423684-001

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CASE NARRATIVE

Client Name: PLAINS AMERICAN EH&S
Project Name: Chevron Greyburg 6" Sec 6

Project ID: PPN AFE 14153
Work Order Number: 423684

Report Date: 21-JUL-11
Date Received: 07/20/2011

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-864677 TPH by SW8015 Mod
SW8015MOD_NM

Batch 864677, o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 423684-001.

Final 1.000

Certificate of Analysis Summary 423684

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Chevron Grayburg 6" Sec 6

Project Id: PPN AFE 14153
Contact: Jason Henry
Project Location: Lea County, NM

Date Received in Lab: Wed Jul-20-11 12:00 pm
Report Date: 21-JUL-11
Project Manager: Brent Barron, II

Analysis Requested								
	Lab Id:	423684-001						
	Field Id:	Stockpile						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Jul-19-11 17:00						
Inorganic Anions In Soil by E300	*Extracted:*							
	Analyzed:	Jul-21-11 05:48						
	Units/RL:	mg/kg	RL					
Chloride		84.5	10.6					
Percent Moisture	*Extracted:*							
	Analyzed:	Jul-20-11 14:00						
	Units/RL:	%	RL					
Percent Moisture		5.62	1.00					
TPH by SW8015 Mod	*Extracted:*	Jul-20-11 13:40						
	Analyzed:	Jul-21-11 00:06						
	Units/RL:	mg/kg	RL					
C6-C12 Gasoline Range Hydrocarbons		ND	79.1					
C12-C28 Diesel Range Hydrocarbons		1350	79.1					
C28-C35 Oil Range Hydrocarbons		ND	79.1					
Total TPH		1350	79.1					

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Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

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.