



2006 MAY 26 AM 11 08'

May 24, 2006

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

1R-381

Re: Plains Pipeline Soil Over Excavation and Backfill Work Plan
 8-Inch Moore to Jal #2 Release Site
 NW ¼, SE ¼ of Section 16, Township 17 South, Range 37 East
 Lea County, New Mexico

Dear Mr. Martin:

Please find attached for your approval the Soil Over Excavation and Backfill Work Plan, dated May 2006, for the 8-Inch Moore to Jal #2 release site located in Section 16 of Township 17 South and Range 37 East of Lea County, New Mexico. The Soil Over Excavation and Backfill Work Plan details site activities conducted to date and future activities for soil closure of the site.

Should you have any questions or comments, please contact me at (505) 441-0965.

Sincerely,

jennolds

Camille Reynolds Remediation Coordinator Plains All American Pipeline

Cc: Larry Johnson, NMOCD, Hobbs Office

Enclosure

May 23, 2006

Mr. Edwin E. Martin New Mexico Oil Conservation Division Environmental Bureau 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Re: Soil Over Excavation Report Plains Pipeline, L.P.
8" Moore to Jal #2 (Rcf #2002-10273) NW/4 of the SE/4 of Section 16, Township 17 South, Range 37 East Lea County, New Mexico NMOCD Ref. 1R-0381

Mr. Martin:

The 8" Moore to Jal #2 release site is located approximately 9.5 miles southeast of Lovington in Lea County, New Mexico. The release occurred on property owned by the State of New Mexico and is utilized as pasture land. The site is located in a rural area within the West Lovington Oil Field, with no residences or surface water within a 1,000-foot radius of the facility.

In October 2002, a release of approximately twenty-five (25) barrels of crude oil occurred at the site due to corrosion (internal and/or external) of the pipeline. Approximately six thousand (6,000) square feet (ft^2) of surface area was impacted by the release. Surficial soil saturated by the release was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm for treatment.

The details of the soil remediation, sampling activities, analytical results, and backfill work plan are described in the attached Soil Over Excavation Report and Backfill Work Plan. If you have any questions feel free to contact me at (432) 288-3490 or by E-mail at jgraham@talonlpe.com. Thank you very much.

TALON/LPE

Jason M. Graham Project Manager

Cc: Camille Reynolds, Plains All American Pipeline, L.P. Jeff Dann, Plains All American Pipeline, L.P.

8" Moore to Jal #2 Soil Over Excavation Report and Backfill Work Plan

Plains Ref: 2002-10273 NW¼ of the SE¼ of Section 16, Township 17 South, Range 37 East Lea County, New Mexico

~9.5 Miles Southeast of Lovington, Lea County, New Mexico Latitude: N32° 49' 56.6" Longitude: W103° 15' 8.31"

May 2006

Prepared For:



333 Clay Street, Suite 600 Houston, TX 77002

Prepared By: Talon/LPE 318 East Taylor Street Hobbs, New Mexico 88240 **Distribution** List

Name	Title	Company or Agency	Mailing Address	e-mail
Ed Martin	Environmental Engineer	NMOCD	1220 South St. Francis Drive Santa Fe, NM 87505	emartin@state.nm.us
Larry Johnson	Environmental Engineer	NMOCD	1625 French Dr. Hobbs, NM 88231	lwjohnson@state.nm.us
Camille Reynolds	Remediation Coordinator	Plains All American Pipeline	3112 West U.S. Hwy 82 Lovington, NM 88260	cjreynolds@paalp.com
Jeff Dann	Senior Environmental Specialist	Plains All American Pipeline	P. O. Box 4648 Houston, TX 77210-4648	jpdann@paalp.com
File		Talon/LPE	318 East Taylor Street Hobbs, New Mexico 88240	lsanchez@llano-permian.com

NMOCD - New Mexico Oil Conservation Division

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SOILS REMEDIATION OVER EXCAVATION REPORT

Introduction

The 8" Moore to Jal #2 release site is located approximately 9.5 miles southeast of Lovington in Lea County, New Mexico, at an elevation of approximately 3,770 feet above mean sea level. The release occurred on property owned by the State of New Mexico and is utilized as pasture land. The site is located in a rural area within the West Lovington Oil Field, with no residences or surface water within a 1,000-foot radius of the facility (Figure 1).

In October 2002, a release of approximately twenty-five (25) barrels of crude oil occurred at the site due to corrosion (internal and/or external) of the pipeline. Approximately six thousand (6,000) square feet (ft²) of surface area was impacted by the release. Surficial soil saturated by the release was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm for treatment.

In an effort to delineate the extent of impacted soil remaining at the site, delineation activities were performed by Environmental Plus, Inc. (EPI) at the site to depths ranging from twenty (20) to forty (40) feet below ground surface (bgs) in November 2002. Field PID measurements were collected from the soil delineation samples collected at discrete intervals. The field analysis indicated organic vapor concentrations exceeded one hundred (100) parts per million (ppm) to a depth of forty (40) feet bgs. These samples were not submitted for laboratory analysis.

EPI commenced excavation activities at the site in June 2003 in order to remove soil impacted above the New Mexico Oil Conservation Division (NMOCD) remedial thresholds. Approximately one thousand and twenty-two (1,220) cubic yards of soil were excavated and processed through a shaker to separate the rock from the soil. After the soil and rock had been separated, the soil (approximately five hundred and seventy-five (575) cubic yards) was spread out into two land treatment areas and the rock was stockpiled on site.

Upon the completion of site excavation activities in June 2003, composite samples were collected by EPI from the north, south and east sidewalls, as well as the floor of the excavation. Laboratory analysis of the samples confirmed all analytes were below the NMOCD remedial thresholds with the exception of Total Petroleum Hydrocarbons (TPH) in the north sidewall sample which was only slightly above the one hundred (100) mg/kg threshold (195 mg/kg – SW-846 Method 8015). In June 2005, two (2) confirmation grab samples were collected by Talon/LPE from the west sidewall of the excavation. Laboratory analysis of these samples confirmed all analytes were below NMOCD remedial thresholds (Table 2).

EPI installed one (1) monitor well in July of 2004 and three (3) monitoring wells in October of 2004 (Figure 2). Soil samples were collected from MW-1, 2, 3 and 4 at various horizons during the boring process of the well installation. The majority of the samples collected exceeded the NMOCD thresholds for the various analytes. Field analysis of soil samples collected at discreet intervals indicated organic vapor concentrations exceeded 100 parts per million (ppm) at least to a depth of seventy-seven (77) feet bgs in soil boring MW-1 (Table 1).

As a result of the presence of phase separated hydrocarbons (PSH) in MW-1, EPI performed PSH recovery activities from October of 2004 to April of 2005. In an effort to accelerate the PSH recovery at the 8" Moore to Jal #2 site, Talon/LPE began bi-weekly PSH recovery upon commencement of the PSH recovery activities in May. Approximately ten (10) to twenty (20) gallons of PSH are recovered every week as a result of the bi-weekly recovery events since the middle of May 2005.

EPI sampled the land treatment areas on December 15, 2004, in conjunction with the weekly site visit. Sampling results indicated hydrocarbon levels in the land treatment area soils were above the NMOCD remedial thresholds in two (2) of the four (4) quadrants in the land treatment area (Table 3). The land treatment areas have been turned to aerate the soils and accelerate the TPH degradation by Talon/LPE since May of 2005. The soils have been treated to below NMOCD standard (Table 3) and will not be turned again prior to the implementation of the restoration activities outlined in the "Backfill Work Plan" section of this Report.

Implementation of Excavation Activities Work Plan

The Soil Remediation Work Plan submitted to Ed Martin on June 24, 2005 and was implemented in January 2006. The excavation activities are summarized below.

Excavation Activities

On January 16, 2006, due to the evidence of the excavation confirmation composite sampling (Table 2), the north sidewall of the excavation was cut back an additional one foot (1') (Figure 4). The east wall is located adjacent to the railroad right-of-way. At that point, a PID was used to determine if any portion of the north sidewall had remaining impacted soil that required excavation. Upon completion of the excavation the, PID readings on the over excavated wall was below the NMOCD limit of one hundred (100) ppm. The materials removed during the excavation activities would be placed in a separate area on six millimeter (6-mil) poly until the time that the excavation is backfilled.

Once no elevated readings were detected with the PID on the excavated sidewalls, grab confirmation samples were collected for laboratory confirmation. No excavation activities were performed on the excavation floor, west side wall, east sidewall or south sidewall. Prior sampling activities have shown the east, west and south sidewalls to be below the NMOCD Remedial Threshold of one hundred (100) mg/kg. In addition to the side wall confirmation samples, grab confirmation samples were collected on the excavation floor in a grid pattern to reanalyze the floor concentrations (Samples NF-01, SF-01, EF-01, WF-01, CF-01). All samples collected during the over excavation activities were delivered to Environmental Labs of Texas, in Odessa, Texas, under Chain-of-Custody protocol to be analyzed by EPA SW-846 method 8021B for BTEX and 8015M for TPH. The results for all the excavation samples can be found in Table 2 and are discussed in the following section, "Analytical Results".

Analytical Results

North Wall

Two (2) conformation samples were collected from the north wall. The sample collected from the west side of the north wall (NW-2) was below the method detection limit (MDL) of 0.025 mg/kg for benzene, toluene, ethylbenzene, and total xylenes. NW-2 was slightly above the NMOCD regulatory limit of one hundred (100) mg/kg at one hundred sixty nine (169mg/kg) for TPH. Sample NE-1, collected from the east side of the north wall, was below the MDL of 0.025 mg/kg for all BTEX constituents and one hundred (100) mg/kg for TPH. The area of impact (NW-2) that is above NMOCD regulatory limits will be excavated another two (2) feet during the installation of the liner and prior to backfilling.

Excavation Floor

No over excavation activities were performed on the excavation floor; however, five (5) samples were collected from the excavation floor to obtain a more complete evaluation of the concentration distribution on the base of the excavation. The highest concentration from the excavation floor analytical results as well as the highest concentration from the land treatment area are evaluated later in this report for their migration potential ("Modeling Activities").

All five (5) of the excavation floor samples (NF-01, SF-01, EF-01, WF-01 and CF-01) were below the method detection limit (MDL) of 0.025 mg/kg for benzene, toluene, ethylbenzene, and total xylenes. Of the five (5) floor samples only two (2), SF-01 and CF-01, returned TPH concentration above the NMOCD regulatory limit of one hundred (100) mg/kg, 259 mg/kg and 186 mg/kg respectively.

Soil Disposal Activities

No disposal activities are proposed at this time. All soils onsite will be placed back in the excavation, on top of a twenty millimeter (20 mil) black-on-black rock grade polyethylene liner, as backfill. These activities are outlined in the "Restoration Activities Work Plan" section of this report.

Land Treatment Cells

The highest concentration of TPH in the soils at the land treatment cells is 186 mg/kg in the northwest quadrant (Table 2). These soils are turned quarterly, with no further action taken.

Modeling Activities

RISC 4 Modeling Software was utilized to calculate the mass loading and volatilization losses at the groundwater interface. For modeling purposes the highest laboratory analyzed TPH concentration of 12,200 mg/kg was utilized to represent the worse case scenario. This TPH concentration was present in boring MW-1 at forty (40) to forty two (42) feet bgs advanced on

July 27, 2004. Benzene and BTEX concentrations in both media are below the NMOCD remedial threshold; however, the benzene concentration from the same boring was utilized as the basis for the migration calculations.

For comparison purposes fate and transport models were completed for a lined and unlined excavation.

FATE AND TRANSPORT MODEL INPUT SUMMARY – Without Liner

Unsaturated zone model linked with saturated zone model

Simulation time (years).

50

Vadose Zone Source Parameters

Thickness of contamination (m)	25.
Depth to top of contamination (m).	1.5
Length of source (m)	44.
Width of source (m).	18.

Unsaturated Zone Properties

Total Porosity in vadose zone (cm3/cm3)	0.60
Residual water content (cm3/cm3)	0.17
Fraction organic carbon (g oc/g soil).	5.00E-02
Soil bulk density (g/cm3).	1.7
Infiltration Rate (cm/yr).	1.0
Saturated conductivity (m/d)	1.00E-04
Van Genuchten's N.	1.1
Thickness of vadose zone (m)	10.

Aquifer Properties

Effective porosity (cm3/cm3)	0.25
Fraction organic carbon (g oc/g soil).	2.00E-03
Hydraulic conductivity (m/d)	10.
Soil bulk density (g/cm3).	1.7
Hydraulic gradient (m/m)	1.00E-03
***Longitudinal dispersivity (m). code calculate	d
***Transverse dispersivity (m). code calculated	•

***Vertical dispersivity (m). code calculated

TPH Data for Unsaturated Zone Source

Concentration of TPH in soil (mg/kg)	1.22E+04
Molecular weight of TPH (g/mol).	1.00E+02

CHEMICAL DATA FOR: Benzene

Diffusion coefficient in air (cm2/s)	8.80E-02
Diffusion coefficient in water (cm2/s)	9.80E-06
Solubility (mg/l)	1.75E+03
Vapor pressure (mmHg)	95.
KOC (L/kg).	59.
Henry's Law coefficient (-).	0.23
Molecular weight (g/mol).	78.
Degradation rate, saturated zone (1/d).	9.60E-04
Degradation rate, vadose zone (1/d).	9.60E-04

Source Concentrations:

Source conc. for unsaturated zone model (mg/kg). 92

The modeling software produced the following results with regards to mass loading to groundwater and volatilization losses over a fifty (50) year period with no liner based upon a silty, sandy, gravel soil:

Ma	ass Loading	Volatilization
Time	to Groundwater	Losses
(yr)	(kg)	(kg)
1.0	1.6/E+01	3.37E+00
2.0	3.43E+01	6.74E+00
3.0	5.18E+01	1.01E+01
4.0	6.93E+01	1.34E+01
5.0	8.68E+01	1.68E+01
6.0	1.04E+02	2.01E+01
7.0	1.22E+02	2.35E+01
8.0	1.39E+02	· 2.68E+01
9.0	1.56E+02	3.01E+01
10.0	1.74E+02	3.34E+01
11.0	1.91E+02	3.67E+01

CUMULATIVE LOSSES FROM THE VADOSE ZONE Benzene

12.0	2.08E+02	4.00E+01
13.0	2.25E+02	4.33E+01
14.0	2.43E+02	4.66E+01
15.0	2.60E+02	4.99E+01
16.0	2.77E+02	5.32E+01
17.0	2.94E+02	5.64E+01
18.0	3.11E+02	5.97E+01
19.0	3.28E+02	6.29E+01
20.0	3.45E+02	6.62E+01
21.0	3.62E+02	6.94E+01
22.0	3.79E+02	7.27E+01
23.0	3.95E+02	7.59E+01
24.0	4.12E+02	7.91E+01
25.0	4.29E+02	8.23E+01
26.0	4.46E+02	8.56E+01
27.0	4.63E+02	8.88E+01
28.0	4.79E+02	9.20E+01
29.0	4.96E+02	9.52E+01
30.0	5.13E+02	9.83E+01
31.0	5.29E+02	1.02E+02
32.0	5.46E+02	1.05E+02
33.0	5.62E+02	1.08E+02
34.0	5.79E+02	1.11E+02
35.0	5.95E+02	1.14E+02
36.0	6.12E+02	1.17E+02
37.0	6.28E+02	1.20E+02
38.0	6.45E+02	1.24E+02
39.0	6.61E+02	1.27E+02
40.0	6.77E+02	1.30E+02
41.0	6.93E+02	1.33E+02
42.0	7.10E+02	1.36E+02
43.0	7.26E+02	1.39E+02
44.0	7.42E+02	1.42E+02
45.0	7.58E+02	1.45E+02
46.0	7.74E+02	1.48E+02
47.0	7.90E+02	1.52E+02
48.0	8.07E+02	1.55E+02
49.0	8.23E+02	1.58E+02
50.0	8.39E+02	1.61E+02

The same model was used with the same above parameters but using an impermeable liner. For modeling purposes, default parameters for clay were utilized as the impermeable layer in place of the silty, sandy, gravel soil. The results are as follows:

CUMULATIVE LOSSES FROM THE VADOSE ZONE Benzene

Mass 1	Loading Vo	atilization
Time	to Groundwater	Losses
(yr)	(kg)	(kg)
1.0	0.00E+00	1.37E-02
2.0	0.00E+00	2.73E-02
3.0	0.00E+00	4.10E-02
4.0	0.00E+00	5.47E-02
5.0	0.00E+00	6.84E-02
6.0	0.00E+00	8.20E-02
7.0	0.00E+00	9.57E-02
8.0	0.00E+00	1.09E-01
9.0	0.00E+00	1.23E-01
10.0	0.00E+00	1.37E-01
11.0	0.00E+00	1.50E-01
12.0	0.00E+00	1.64E-01
13.0	0.00E+00	1.78E-01
14.0	0.00E+00	1.91E-01
15.0	0.00E+00	2.05E-01
16.0	0.00E+00	2.19E-01
17.0	0.00E+00	2.32E-01
18.0	0.00E+00	2.46E-01
19.0	0.00E+00	2.60E-01
20.0	0.00E+00	2.73E-01
21.0	0.00E+00	2.87E-01
22.0	0.00E+00	3.01E-01
23.0	0.00E+00	3.14E-01
24.0	0.00E+00	3.28E-01
25.0	0.00E+00	3.42E-01
26.0	0.00E+00	3.55E-01
27.0	0.00E+00	3.69E-01
28.0	0.00E+00	3.83E-01
29.0	0.00E+00	3.96E-01
30.0	0.00E+00	4.10E-01
31.0	0.00E+00	4.24E-01
32.0	0.00E+00	4.37E-01
33.0	0.00E+00	4.51E-01
34.0	0.00E+00	4.65E-01
35.0	0.00E+00	4.78E-01
36.0	0.00E+00	· 4.92E-01
37.0	0.00E+00	5.06E-01
38.0	0.00E+00	5.19E-01
39.0	$0.00E \pm 00$	5.33E-01

40.0	0.00E+00	5.46E-01
41.0	0.00E+00	5.60E-01
42.0	0.00E+00	5.74E-01
43.0	0.00E+00	5.87E-01
44.0	0.00E+00	6.01E-01
45.0	0.00E+00	6.15E-01
46.0	0.00E+00	6.28E-01
47.0	0.00E+00	6.42E-01
48.0	0.00E+00	6.56E-01
49.0	0.00E+00	6.69E-01
50.0	0.00E+00	6.83E-01

The fate and transport models estimate the mass loading of benzene from the soil to groundwater pathway with and without a confining layer (i.e 20 mil liner). The benzene loading to groundwater is reduced to zero (0) mg/kg per year after the liner is installed and backfilled. The model without the liner shows continued benzene loading to the groundwater. The benzene concentrations are below the NMOCD remedial threshold of 10 mg/kg in soils. The findings in this model suggests that installing a liner and placing the soils from the land treatment cells as suggested in the "Restoration Activities Work Plan", would eliminate the soil to groundwater pathway preventing additional groundwater impacts from occurring.

Restoration Activities Work Plan

Prior to the initiation of the restoration activities MW-1 will be vertically extended to a level above the top of the excavation, and the top of casing will be re-surveyed. With the monitoring well extended to a level accessible after the backfill activities, the bottom of the excavation will be filled with an even six inch (6") layer of sand. A twenty millimeter (20 mill) black-on-black rock grade polyethylene liner will then be placed on the sand covering the base of the excavation. A small hole will be cut through the liner to encompass MW-1 which will be left in the excavation. Clay packing material will be utilized to seal the opening in the liner around the monitor well casing. An additional six inch (6") layer of sand will be placed on top of the liner.

With the poly liner and protective sand cover in place, backfill of the excavated materials will begin. A layer of the rock material will first be carefully placed back in the excavation. Then a layer of the soils from the land treatment area will be placed on top of the first rock layer. The two layers will then be properly compacted. This alternating of layers and compacting activities will continue to the top of the excavation taking great care to insure the integrity of MW-1, the pipeline, and the poly liner. Only soils, no rock, will be place in the proximity of either the pipeline or MW-1. Clean backfill will be used during the backfill activities as needed to bring the excavation to surface grade.

Conclusion and Recommendations

It is the opinion of Talon/LPE that the over excavation activities were successful in removing the remaining areas of hydrocarbon impact in the north wall of the 8" Moore to Jal #2 excavation. The area above the NMOCD regulatory limits at NW-2 along the north sidewall will be

excavated approximately two (2) feet during the installation of the liner. All analytical results from the confirmation samples collected following the over excavation activities were at or below the NMOCD remedial threshold for the respective constituents. From the results of the modeling activities, as well as the fact that neither the excavation floor or the soils from the land treatment cells exhibit benzene or BTEX concentration above the NMOCD remedial thresholds, it is the opinion of Talon/LPE that with the placement of the poly liner prior to backfill will isolate the source area and reduce the threat of further groundwater impact from the soils in the land treatment cells being placed into the excavation.

Signatures

Written By:

Jasofi M. Gřahah Project Manager Talon/LPE

Reviewed By: for Kyle Woggone

Kyle Waggoner, P.G Senior Project Manager Talon/LPE

Figures









Tables

Table 1

TALONLPE Talon/LPE 318 East Taylor Street, Hobbs, New Mexico 88240

318 East Taylor Street, Hobbs, New Mexico 88240 Phone: 505/393-4261, FAX: 505/393-4658

SUMMARY OF ENVIRONMENTAL BORING RESULTS (SOIL)

Plains All American Pipeline, LP. - 8" Moore to Jal #2 - Ref #2002-10273

PID Benzene Toluene Ethylbenzene m.p- :adings (mg/Kg) (mg/Kg) (mg/Kg) (mg/Kg)	Soil ioring PID Readings Benzene Toluene Ethylbenzene m.p- ioring (mg/Kg) (mg/Kg) (mg/Kg) (mg/Kg) (mg/Kg)
906 NA NA NA	906 NA NA NA
592 NA NA NA	592 NA NA NA
721 91.7 155 77.9	721 91.7 155 77.9
427 NA NA NA	427 NA NA NA
733 NA NA NA	733 NA NA NA
386 NA NA NA	386 NA NA NA
588 57.4 142 69.4	588 57.4 142 69.4
301 NA NA NA	4W-1 301 NA NA NA
431 NA NA NA	431 NA NA NA
599 NA NA NA	599 NA NA NA
660 NA NA NA	660 NA NA NA
799 NA NA NA	799 NA NA NA
390 NA NA NA	390 NA NA NA
566 NA NA NA	566 NA NA NA
11.2 <0.0250 <0.0250 <0.0250	11.2 <0.0250 <0.0250 <0.0250
23.8 <0.0250 <0.0250 <0.0250	23.8 <0.0250 <0.0250 <0.0250
58.5 NA NA NA	4W-2 58.5 NA NA NA
30.6 NA NA NA	30.6 NA NA NA

MW-2 (25-30)			26.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (30-35)			53.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (35-40)			102	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-2 (40-45)			40.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (45-50)	25-Oct-	MW-2	109	NA	NA	NA	' AN	NA	NA	NA	NA	NA
MW-2 (50-55)	64	Con't	114	NA	NA	NA	ΝA	NA	NA	NA	NA	NA
MW-2 (55-60)		•	102	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (60-65)			110	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (65-70)			98.3	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-2 (70-75)			62.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (10-15)			23.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (15-20)			77.4	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-3 (20-25)		1	50.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (25-30)		I	38.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (30-35)			66.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (35-40)	26_Oct_		68.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (40-45)	04	MW-3	42.8	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	< 0.125	<10.0	<10.0	<10.0
MW-3 (45-50)			67.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (50-55)		1	62.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (55-60)		I	78.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (60-65)		I	56.9	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (65-70)		I	53.3	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-3 (70-75)			70.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (10-15)			40.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (15-20)		1	6.99	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (20-25)		1	47.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (25-30)			71.2	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-4 (30-35)	75_Oct_		54.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (35-40)	04	MW-4	79.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (40-45)		1	76.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (45-50)		1	75.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (50-55)		1	90.9	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-4 (55-60)			56.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (60-65)			63.4	NA	NA	NA	NA	NA	NA	NA	NA	NA

MW-4 (65-70)	25-Oct-	MW-4	42.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (70-75)	04	Con't	23.3	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
NMOCD Remedial Thre	sholds			10					50			100

¹Bolded values are in excess of the NMOCD Remediation Thresholds ²NA : Not Analyzed ³NS : Not Sampled ⁴ Detected, but below the Reporting Limit; therefore, result is an estimated concentration (CLP-J Flag).

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Table 2

TALON Talon/LPE

318 East Taylor Street, Hobbs, New Mexico 88240 Phone: 505/393-4261, FAX: 505/393-4658

SUMMARY OF EXCAVATION ANALYTICAL RESULTS (SOIL)

Plains All American Pipeline, LP. - 8" Moore to Jal #2 - Ref #2002-10273

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Sample ID	Sample Date	Sample Location	Field PID Analysis	Benzene	Toluene	Ethylbenzene	m,p- Xylenes	0- Xylene	Total BTEX	TPH (as gasoline)	TPH (as diesel)	Total TPH
			(mqq)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
SEMR31302NSW	13-Mar-02	North Sidewall	ΝA	<25	0.937	3.590	4.410	2.140	11.077	224	545	769
SEMR31302RAMP	13-Mar-02	Ramp	NA	<25	<25	<25	<25	<25	<125	<10	<10	<10
SEMR51302SP	13-May-02	Stockpile	NA	7	<1	<1	$\overline{\nabla}$	~1	NA	AN	VA	NA
SEMR51702BCC3'	17-May-02	Bottom -3'	NA	<25	<25	<25	<25	<25	<125	<10	<10	<10
SE103002StkPile	30-Oct-02	Stockpile	ΝA	0.002	0.006	0.003	0.007	0.004	0.022	AN	NA	NA
SLE8M2111203NSWC	12-Nov-03	North Sidewall Composite (3'-4')	3.2	<0.025	<0.025	<0.025	<0.025	<0.025	<0.125	<10.0	195	195
SLE8M2111203SSWC	12-Nov-03	South Sidewall Composite (3'-4')	6.9	<0.025	<0.025	<0.025	<0.025	<0.025	<0.125	<10.0	<10.0	<10.0

| |

8.5 <0.025	100			50					10	-	lds	al Thresho
8.5 <0.025	186.0	186.0	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	NA		Center Floor
8.5 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.026 <0.026 <0.026 <0.026 <0.025 <0.025 <0.025 <0.025 <0.025 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.025 <0.025 <0.025 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <0.026 <td>8.66</td> <td>9.66</td> <td><10.0</td> <td><0.125</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td>NA</td> <td></td> <td>West Floor</td>	8.66	9.66	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	NA		West Floor
8.5 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <td>67.2</td> <td>67.2</td> <td><10.0</td> <td><0.125</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td>NA</td> <td></td> <td>East Floor</td>	67.2	67.2	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	NA		East Floor
8.5 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <td>259.0</td> <td>259.0</td> <td><10.0</td> <td><0.125</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td>NA</td> <td></td> <td>South Floor</td>	259.0	259.0	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	NA		South Floor
8.5 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <td>10.3</td> <td>10.3</td> <td><10.0</td> <td><0.125</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td>NA</td> <td></td> <td>North Floor</td>	10.3	10.3	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	NA		North Floor
8.5 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <td>169.0</td> <td>169</td> <td><10.0</td> <td><0.125</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td>1.0</td> <td></td> <td>North Sidewall - West End Grab (3'-4')</td>	169.0	169	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	1.0		North Sidewall - West End Grab (3'-4')
8.5 <0.025	<10.0	<10.0	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	0.5		North Sidewall - East End Grab (3'-4')
8.5 <a> <a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><a><t< td=""><td><10.0</td><td><10.0</td><td><10.0</td><td><0.125</td><td><0.025</td><td><0.025</td><td><0.025</td><td><0.025</td><td><0.025</td><td>NA</td><td></td><td>West Sidewall - South End Grab (3'-4')</td></t<>	<10.0	<10.0	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	NA		West Sidewall - South End Grab (3'-4')
8.5 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <td><10.0</td> <td><10.0</td> <td><10.0</td> <td><0.125</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td>ΝA</td> <td></td> <td>West Sidewall - North End Grab (3'-4')</td>	<10.0	<10.0	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	ΝA		West Sidewall - North End Grab (3'-4')
8.5 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <td><10.0</td> <td><10.0</td> <td><10.0</td> <td><0.125</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td><0.025</td> <td>9.7</td> <td></td> <td>Bottomhole Composite (4')</td>	<10.0	<10.0	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	9.7		Bottomhole Composite (4')
	<10.0	<10.0	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	8.5		East Sidewall Composite (3'- 4')

¹Bolded values are in excess of the NMOCD Remediation Thresholds ²NA : Not Analyzed

³NS : Not Sampled

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4 Detected, but below the Reporting Limit; therefore, result is an estimated concentration (CLP-J Flag).

Table 3

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TALON Talon/LPE

318 East Taylor Street, Hobbs, New Mexico 8824(Phone: 505/393-4261, FAX: 505/393-4658

SUMMARY OF LAND TREATMENT ANALYTICAL RESULTS (SOIL)

		lains All A	merican	Pipeline,	LP 8" Mooi	re to Jal #2	2 - Ref #20	02-10273	1 -		
•		Ū	Ranzana	Toluene	Fthvlhenzene	m,p-	o_Vulana	Total	HdT	HdT	Total
Sample ID	Date	Sample Location			FUIJIOCHECHE	Xylenes	u-Aylene	BTEX	(as gasoline)	(as diesel)	ТРН
			(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
		15-Dec-04	NA	NA	NA	NA	NA	NA	\$ >	282.0	282.0
MM	Northwest	1-Jul-05	NA	NA	NA	NA	NA	NA	<10	420.0	420.0
	of Cell	29-Sep-05	NA	NA	AN	NA	NA	NA	<10	25.3	25.3
		30-Dec-05	NA	NA	NA	NA	NA	NA	<10	186.0	186.0
		15-Dec-04	NA	NA	NA	NA	NA	NA	<5	464.0	464.0
MS	Southwest	1-Jul-05	NA	NA	NA	NA	NA	NA	13.8	708.0	722.0
5	of Cell	29-Sep-05	NA	NA	NA	NA	NA	NA	<10	100.0	100.0
		30-Dec-05	NA	NA	NA	NA	ΝA	NA	<10	146.0	146.0
		15-Dec-04	NA	NA	NA	NA	NA	NA	€	31.2	31.2
RF	Northeast	1-Jul-05	NA	NA	NA	NA	NA	NA	<10	325.0	325.0
2	of Cell	29-Sep-05	NA	NA	NA	NA	NA	NA	<10	<10	<20
		30-Dec-05	NA	NA	NA	NA	NA	NA	<10	103.0	103.0

- ---

		15-Dec-04	AN	AN	NA	NA	AN	NA	\$	18.1	18.1	
									,			
SF	Southeast	1-Jul-05	NA	NA	NA	NA	NA	NA	12.2	789.0	801.0	
1	of Cell	29-Sep-05	NA	NA	NA	NA	NA	ΝA	<10	20.2	20.2	
		30-Dec-05	NA	NA	NA	NA	NA	NA	<10	167.0	167.0	
NMOCD Rem	edial Thresh	olds	10					50			100	

'Bolded values are in excess of the NMOCD Remediation Thresholds

²NA : Not Analyzed ³NS : Not Sampled

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4 Detected, but below the Reporting Limit; therefore, result is an estimated concentration (CLP-J Flag).

Laboratory Analytical Data



Analytical Report

Prepared for:

Camille Reynolds Plains All American EH & S 1301 S. County Road 1150 Midland, TX 79706-4476

Project: 8 inch Moore to Jal #2 Project Number: 2002-10273 Location: 15 miles North of Hobbs, NM

Lab Order Number: 6A18004

Report Date: 01/25/06

1:80 90/81/10	\$\$:60 90/21/10	lioS	10-408189	NE-I Site 2
Date Received	Date Sampled	xinteM	Laboratory ID	OI sigms?
		IPLES	ANALYTICAL REPORT FOR SAM	
57:00 10:42		splou	Project Manager: Camille Rey	0744-30767, XT bnslbiM
Reported:			Project Number: 2002-10273	1301 S. County Road 1150
Fax: (432) 687-4914		24 lsl of 9	Project: 8 inch Moon	Z & HH nasiremA IIA anial4

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20-4008189

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SP-3 Site 2

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91:80 90/81/10

91:80 90/81/10

01:01 90/21/10

\$0:01 90/21/10

Plains All American EH & S 1301 S. County Road 1150		Droinot N	Project: 8 in	ch Moore 1 2-10273	to Jal #2			Fax: (432) 687-4914
Midland TX, 79706-4476		Project N Project M	anager: Can	nille Reyno	olds			Кер 01/25/	06 10:45
		O	rganics by	y GC					
		Environ	mental L	ab of Te	exas				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
IE-1 Site 2 (6A18004-01) Soil									
3enzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
oluene	ND	0.0250	и	"	"	"	"	n	
thylbenzene	ND	0.0250		"	"		"	"	
Tylene (p/m)	ND	0.0250	n	"	"	"	"	"	
(v) (v)	ND	0.0250	"	"	"	"	"	"	
urrogate a a Trifluorotoluene		955%	80-1	20	"	· •	n	"	
urrogate: 4-Bromofluorobenzene		83.0%	80-1	20	"	"	"	"	
asoline Range Organics C6-C12	ND	10.0	mg/kg drv	1	EA61808	01/18/06	01/18/06	EPA 8015M	
viesel Range Organics >C12-C35	ND	10.0	" "			"	"	"	
otal Hydrocarbon C6-C35	ND	10.0		"	"	**	"	n	
urrogate: L-Chlorocetana			70 1	30	"	"	"	"	
urrogate: 1-Chloroostadesare		102.04	70 1	30	"	11	"	"	
arrogule. 1-Chloroociddecane		102 /0	70-1.	50					
W-2 Site 2 (6A18004-02) Soil									
enzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
oluene	ND	0.0250		11	"	"	"	n	
thylbenzene	ND	0.0250	"	"	н	"	"	н	
ylene (p/m)	ND	0.0250	"	**	**	"	"	"	
ylene (o)	ND	0.0250	**	**	17	**	"	"	
urrogate: a.aTrifluorotoluene		89.8 %	80-1	20	"		"	. "	
urrogate: 4-Bromofluorobenzene		84.0 %	80-1	20	"	"	"	"	
asoline Range Organics C6-C12	ND	10.0	mg/kg drv	1	EA61808	01/18/06	01/18/06	EPA 8015M	
iesel Range Organics >C12-C35	169	10.0	"			"	"		
otal Hydrocarbon C6-C35	169	10.0	"			"	"	"	
urrogate: 1-Chlorooctane		120 %		30	"	~		· · · ·	
urrogate: 1-Chlorooctadecane		108 %	70-1	30	"	"	"	"	
		100 70	/ 0-1.						
P-3 Site 2 (6A18004-03) Soil		<u> </u>							
enzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
oluene	ND	0.0250	н	н	"	н	"	"	
thylbenzene	ND	0.0250	11	"	"		"	**	
ylene (p/m)	ND	0.0250	11	"	n	"	n		
ylene (o)	ND	0.0250	n	"	**	"	11	"	
irrogate: a,a,a-Trifluorotoluene		94.0 %	80-12	20	"	"	"	"	
irrogate: 4-Bromofluorobenzene		83.5 %	80-12	20	"	н	"	"	
asoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA61808	01/18/06	01/18/06	EPA 8015M	
iesel Range Organics >C12-C35	93.3	10.0		"	"		**		
otal Hydrocarbon C6-C35	93.3	10.0	"	"	"	"	••	"	
invironmental Lab of Taxaa							, , ,		

Plains All American EH & S 1301 S. County Road 1150 Midland TX, 79706-4476		P Project Nu Project Ma	roject: 8 ir 1mber: 200 nager: Car	nch Moore ()2-10273 mille Reyno	o Jal #2 Plds			Fax: (432) 6 Report 01/25/06	87-4914 ed: 10:45
		Or Environn	ganics b nental L	y GC ab of Te	exas				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SP-3 Site 2 (6A18004-03) Soil									
Surrogate: 1-Chlorooctane		120 %	70-1	130	EA61808	01/18/06	01/18/06	EPA 8015M	
Surrogate: 1-Chlorooctadecane		109 %	70-1	130	"	"	"	n	

Environmental Lab of Texas

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12600 West 1-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713



Plains All American EH & S	Project: 8 inch Moore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10273	Reported:
Midland TX, 79706-4476	Project Manager: Camille Reynolds	01/25/06 10:45

General Chemistry Parameters by EPA / Standard Methods

		Environn	nental I	Lab of To	exas				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NE-1 Site 2 (6A18004-01) Soil									
% Moisture	9.2	0.1	%	3	EA61901	01/18/06	01/19/06	% calculation	_
NW-2 Site 2 (6A18004-02) Soil		<u>.</u>	_						
% Moisture	4.6	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
SP-3 Site 2 (6A18004-03) Soil			_						
% Moisture	7.0	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	

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12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Plains All American EH & S	Project:	8 inch Moore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number:	2002-10273	Reported:
Midland TX, 79706-4476	Project Manager:	Camille Reynolds	01/25/06 10:45

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA61808 - Solvent Extraction (GC)										
Blank (EA61808-BLK1)				Prepared &	Analyzed:	01/18/06				
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0								
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	55.5		mg/kg	50.0	-		7 0-130			
Surrogate: 1-Chlorooctadecane	48.9		"	50.0		97.8	70-130			
LCS (EA61808-BS1)				Prepared &	Analyzed:	01/18/06				
Gasoline Range Organics C6-C12	474	10.0	mg/kg wet	500	-	94.8	75-125			
Diesel Range Organics >C12-C35	573	10.0	"	500		115	75-125			
Total Hydrocarbon C6-C35	1050	10.0	11	1000		105	75-125			
Surrogate: 1-Chlorooctane	61.3	- •	mg/kg	50.0		123	70-130			
Surrogate: 1-Chlorooctadecane	52.4		"	50.0		105	70-130			
Calibration Check (EA61808-CCV1)				Prepared: 0	01/18/06 A	nalyzed: 01	/19/06			
Gasoline Range Organics C6-C12	462		mg/kg	500		92.4	80-120			
Diesel Range Organics >C12-C35	558			500		112	80-120			
Total Hydrocarbon C6-C35	1020			1000		102	80-120			
Surrogate: 1-Chlorooctane	63.3	• •	"	50.0		127	70-130			
Surrogate: 1-Chlorooctadecane	51.6		"	50.0		103	70-130			
Matrix Spike (EA61808-MS1)	Sourc	e: 6A18004	-01	Prepared &	Analyzed:	01/18/06				
Gasoline Range Organics C6-C12	509	10.0	mg/kg dry	551	ND	92.4	75-125			
Diesel Range Organics >C12-C35	624	10.0		551	ND	113	75-125			
Total Hydrocarbon C6-C35	1130	10.0	•	1100	ND	103	75-125			
Surrogate: 1-Chlorooctane	64.5		mg/kg	50.0		129	70-130			
Surrogate: 1-Chlorooctadecane	55.7		"	50.0		111	70-130			
Matrix Spike Dup (EA61808-MSD1)	Sourc	e: 6A18004	-01	Prepared &	Analyzed:	01/18/06				
Gasoline Range Organics C6-C12	515	10.0	mg/kg dry	551	ND	93.5	75-125	1.17	20	
Diesel Range Organics >C12-C35	632	10.0	"	551	ND	115	75-125	1.27	20	
Total Hydrocarbon C6-C35	1150	10.0	"	1100	ND	105	75-125	1.75	20	
Surrogate: 1-Chlorooctane	64.6		mg/kg	50.0		129	70-130			
Surrogate: 1-Chlorooctadecane	56.5		"	50.0		113	70-130			

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12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Plains All American EH & S 1301 S. County Road 1150 Midland TX 79706-4476		P Project No Project Ma	Project: 8 in umber: 200	nch Moore to 02-10273 mille Revuel	o Jal #2 ds				Fax: (432) Repo	687-4914 rted:
	Or	ganics by Environn	nental L	ab of Tex	ontrol xas					
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA61902 - EPA 5030C (GC)	<u>.</u>						_			
				Prepared &	Analyzed:	01/19/06				
Benzene	ND	0.0250	mg/kg wet		. •	-				
Foluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (0)	ND	0.0250	11							
Surrogate: a,a,a-Trifluorotoluene	36.7	-	ug/kg	40.0		91.8	80-120			
Surrogate: 4-Bromofluorobenzene	35.7		"	40.0		89.2	80-120			
LCS (EA61902-BS1)				Prepared: 0)1/19/06 Ai	alyzed: 01	/20/06			
Benzene	1.28	0.0250	mg/kg wet	1.25		102	80-120			
Toluene	1.29	0.0250	"	1.25		103	80-120			
Ethylbenzene	1.23	0.0250	**	1.25		98.4	80-120			
Xylene (p/m)	2.38	0.0250	*	2.50		95.2	80-120			
Xylene (0)	1.33	0.0250	*1	1.25		106	80-120			
Surrogate: a,a,a-Trifluorotoluene	38.4		ug/kg	40.0		96.0	80-120			
Surrogate: 4-Bromo/luorobenzene	38.3		"	40.0		95.8	80-120			
Calibration Check (EA61902-CCV1)				Prepared: 0	1/19/06 Ar	nalyzed: 01	/21/06			
Benzene	46.4		ug/kg	50.0		92.8	80-120			
Foluene	46.1		"	50.0		92.2	80-120			
Ethylbenzene	43.4		"	50.0		86.8	80-120			
Xylene (p/m)	84.5		"	100		84.5	80-120			
Xylene (0)	47.6		"	50.0		95.2	80-120			
Surrogate: a,a,a-Trifluorotoluene	34.7	-	"	40.0		86.8	80-120			
Surrogate: 4-Bromofluorobenzene	36.2		"	40.0		90.5	80-120			
Matrix Spike (EA61902-MS1)	Sour	ce: 6A17011	-04	Prepared: 0	01/19/06 Ar	alyzed: 01	/21/06			
Benzene	1.41	0.0250	mg/kg dry	1.46	ND	96.6	80-120			
l'oluene	1.38	0.0250	u	1.46	ND	94.5	80-120			
Ethylbenzene	1.29	0.0250	"	1.46	ND	88.4	80-120			
Yylene (p/m)	2.48	0.0250	"	2.91	0.0282	84.3	80-120			
Xylene (o)	1.40	0.0250	"	1.46	ND	95.9	80-120			
Surrogate: a,a,a-Trifluorotoluene	34.5		ug/kg	40.0		86.2	80-120			
Surrogate: 4-Bromofluorobenzene	35.1		"	40.0		87.8	80-120			

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Page 6 of 9

Plains All American EH & S	Project: 8 inch Moore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10273	Reported:
Midland TX, 79706-4476	Project Manager: Camille Reynolds	01/25/06 10:45

Organics by GC - Quality Control

Environmental Lab of Texas

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EA61902 - EPA 5030C (GC)

Matrix Spike Dup (EA61902-MSD1)	Sour	ce: 6A17011	-04	Prepared:	01/19/06 Ai	nalyzed: 0	1/21/06		
Benzene	1.37	0.0250	mg/kg dry	1.46	ND	93.8	80-120	2.94	20
Toluene	1.38	0.0250	"	1.46	ND	94.5	80-120	0.00	20
Ethylbenzene	1.30	0.0250		1.46	ND	89.0	80-120	0.676	20
Xylene (p/m)	2.51	0.0250	"	2.91	0.0282	85.3	80-120	1.18	20
Xylene (o)	1.41	0.0250	n	1.46	ND	96.6	80-120	0.727	20
Surrogate: a,a,a-Trifluorotoluene	33.5		ug/kg	40.0		83.8	80-120		
Surrogate: 4-Bromofluorobenzene	35.2		"	40.0		88.0	80-120		

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12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713
Plains All American EH & S	Project: 8 inch Me	pore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-102	73	Reported:
Midland TX, 79706-4476	Project Manager: Camille F	Reynolds	01/25/06 10:45

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analuta	Posult	Reporting	Unite	Spike	Source	%PEC	%REC		RPD Limit	Notos
	Kesun	1,,11111	Oms	Level	Kesun	76KEC	Linnis	KFD	Linin	Notes
Batch EA61901 - General Preparation (Pre	p)									
Blank (EA61901-BLK1)				Prepared: 0	1/18/06 A	nalyzed: 01	/19/06			
% Solids	100	-	%				-			
Duplicate (EA61901-DUP1)	Sour	ce: 6A18001-	01	Prepared: 0	01/18/06 A	nalyzed: 01	/19/06			
% Solids	87.2	•	%		87.1			0.115	20	
Duplicate (EA61901-DUP2)	Sour	ce: 6A18005-	13	Prepared: 0	01/18/06 A	nalyzed: 01	/19/06			
% Solids	92.2	-	%		91.8			0.435	20	

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Plains All 1301 S. C Midland	l American EH & S County Road 1150 TX, 79706-4476	Project: Project Number: Project Manager:	Fax: (432) 687-4914 Reported: 01/25/06 10:45	
		Notes and De	finitions	
DET	Analyte DETECTED			
ND	Analyte NOT DETECTED at or above the reporting limit			
NR	Not Reported			
dry	Sample results reported on a dry weight basis			
RPD	Relative Percent Difference			
LCS	Laboratory Control Spike			
MS	Matrix Spike			
Dup	Duplicate			

Report Approved By:

Raland K Julits

1/25/2006

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer Jeanne Mc Murrey, Inorg. Tech Director LaTasha Cornish, Chemist Sandra Sanchez, Lab Tech.

Date:

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Environmental Lab of Texas

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IND ANALYSIS REQUEST		EQUEST	Method No.)		ριεριτ	£}\$ mo	۵۱.6-97 C/6-25	2008 85270	80958 803 803 803 803 803 803 803 803 803 80	GC/MS Vol. GC/MS Sem Pesticides 81 Pesticides 81 BOD. 155, f Moisture Co Moisture Co Tum Around													Weight Basis Required	P Report Required :k If Special Reporting s Are Needed	
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seon, Suite H xas 79932	585-3443 585-4944 889-3443	ro			273	JAL #2	\$		SAMPLING B/602	5740 1508 381M	1-17-04 9:52	Ja; 0/ (1	0/; 07 11	11:30	11 14140	11 11:50	ao; 2) 11	1. 12:10	37.10	1. 1300	012/			L L	
155 McCutcl Et Paso, Te	Tel (915) Fax (915) 1 (888) 5	-522-213			2002 - 10	B" AGORE TO	ure: Are	RESERVATIVE	METHOD	NONE ICE NªOH H ⁵ 2Q [°]	>	>	>		>	>	>	>	>	>	>	e: Time:	e: Time:	e: Time: පි. ප. රු රු / (
	sis, inc	Phone #: 432	Fax #: e-mail:		Rmille Reynold	Project Name:	Sampler Signat	Id Matter	MATRIX	HNO ³ HCI STODGE VIU SOIL		<u> </u>	>	>	>	>	<u> </u>	>	<u>></u>	>		Dat	Dat	ratory by: Dat	· · · · · · · · · · · · · · · · · · ·
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701 Aberdeen Avenue, Ste. 5 Lubbock. Texas 79424 Tel (806) 794-1296	Fax (305) 794-1298 1 (800) 378-1296 mail: lab@traceanalysis.com	npany Name: TAL	tress: (Street, City, 44 6	itact Person: Louis	tice to: (fferent from above)	iect #: LI3SPLAIN	ect Location:				-ol NE-	-02 GRADINW	-03 SP-	560	/ 121 BEW	Lew.	1 NEW	NWW	5000	M CFF	ZEFW	nquished by: I	nquished by: C	nquished by: C	

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

Client: Plains P/L

Date/Time: 01-18-06 @ 0816

JMM

Order #: 6A1BOO4

Initials:

Sample Receipt Checklist

Temperature of container/cooler?	Yes No I	-2,5 CI
Shipping container/cooler in good condition?	Yes No	
Custody Seals intact on shipping container/cooler?	Yes No	Not present> !
Custody Seals intect on sample bottles?	Yes No	Not present
Chain of custody present?	Cres No I	
Sample Instructions complete on Chain of Custody?	(Tes) NO	
Chain of Custody signed when relinquished and received?	Ves No	
Chain of custody agrees with sample label(s)	(Tes) No	
Container labels legible and intact?	(TES) NO	
Sample Matrix and properties same as on chain of custody?	(Yes) No	
Samples in procer container/bottle?	(Tes) No	· · ·
Samples properly preserved?	VES NO	
Sample bottles intact?	Kas No	
Preservations documented on Chain of Custody?	TES NO	
Containers documented on Chain of Custody?	(Yes) No	•••••••
Sufficient sample amount for indicated test?	Res No	
All samples received within sufficient hold time?	No No	
VOC samples have zero headspace?	Yes No	Not Accilcable

Other observations:

Çontact Person: Regarding:	Variance Documentation: Date/Time:	// Contacted by:
Corrective Action Taken:		
·		
		· · · · · · · · · · · · · · · · · · ·



Analytical Report

Prepared for:

Camille Reynolds Plains All American EH & S 1301 S. County Road 1150 Midland, TX 79706-4476

Project: 8 inch Moore to Jal #2 Project Number: 2002-10273 Location: None Given

Lab Order Number: 6A30002

Report Date: 02/03/06

1				E (122) (87 4014
	Plains All American EH & S	Project:	8 inch Moore to Jal #2	Fax: (432) 087-4914
	1301 S. County Road 1150	Project Number:	2002-10273	Reported:
	Midland TX, 79706-4476	Project Manager:	Camille Reynolds	02/03/06 18:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NF-01	6A30002-01	Soil	01/26/06 19:20	01/27/06 17:10
SF-01	6A30002-02	Soil	01/26/06 19:25	01/27/06 17:10
EF-01	6A30002-03	Soil	01/26/06 19:30	01/27/06 17:10
WF-01	6A30002-04	Soil	01/26/06 19:35	01/27/06 17:10
CF-01	6A30002-05	Soil	01/26/06 19:40	01/27/06 17:10

	Organics by GC	
Midland TX, 79706-4476	Project Manager: Camille Reynolds	02/03/06 18:25
1301 S. County Road 1150	Project Number: 2002-10273	Reported:
Plains All American EH & S	Project: 8 inch Moore to Jal #2	Fax: (432) 687-4914

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NF-01 (6A30002-01) Soil	<u> </u>								
Benzene	ND	0.0250	mg/kg dry	25	EB60213	02/02/06	02/03/06	EPA 8021B	
Toluene	ND	0.0250	**	"	"	11	"	"	
Ethylbenzene	ND	0.0250	н	"	"	**	и	"	
Xylene (p/m)	ND	0.0250	n	"	"	"	11	"	
Xylene (o)	ND	0.0250	"	n	"	"	"	**	
Surrogate: a,a,a-Trifluorotoluene		95.0 %	80-12	20	"	. "	"	- n	
Surrogate: 4-Bromofluorobenzene		112 %	80-12	20	"	"	"	11	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA63114	01/31/06	02/01/06	EPA 8015M	
Diesel Range Organics >C12-C35	10.3	10.0	н	н		"	и		
Total Hydrocarbon C6-C35	10.3	10.0	"		"	"	"		
Surrogate: 1-Chlorooctane		128 %	70-13	10	"	"	"	"	
Surrogate: 1-Chlorooctadecane		122 %	70-13	0	"	"	"	n	
SF-01 (6A30002-02) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EB60213	02/02/06	02/03/06	EPA 8021B	
Toluene	ND	0.0250	"	**	"	"	"	"	
Ethylbenzene	ND	0.0250	"	**	"	"	"	"	
Xylene (p/m)	ND	0.0250	"		"	"		"	
Xylene (o)	ND	0.0250	"			"	"	"	
Surrogate: a,a,a-Trifluorotoluene		107 %	80-12	0	"	"	"		
Surrogate: 4-Bromofluorobenzene		98.2 %	80-12	20	"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA63114	01/31/06	02/01/06	EPA 8015M	
Diesel Range Organics >C12-C35	259	10.0	н	"		"	11	"	
Total Hydrocarbon C6-C35	259	10.0	н	"		"	"	"	
Surrogate: 1-Chlorooctane		130 %	70-13	0	"	"	"	"	
Surrogate: 1-Chlorooctadecane		124 %	70-13	0	"	"	"	n	
EF-01 (6A30002-03) Soii									
Benzene	ND	0.0250	mg/kg dry	25	EB60213	02/02/06	02/03/06	EPA 8021B	

Benzene	ND	0.0250	mg/kg dry	25	EB60213	02/02/06	02/03/06	EPA 8021B
Toluene	ND	0.0250	"	н	"	"	11	"
Ethylbenzene	ND	0.0250		н	"		"	"
Xylene (p/m)	ND	0.0250		"	"	"	"	н
Xylene (o)	ND	0.0250	"	"	"	н	н	"
Surrogate: a,a,a-Trifluorotoluene		102 %	80-12	9	"	"	"	• 11
Surrogate: 4-Bromofluorobenzene		94.2 %	80-120	9	"	"	"	11
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA63114	01/31/06	02/01/06	EPA 8015M
Diesel Range Organics >C12-C35	67.2	10.0	"	"	"	"	"	0
Total Hydrocarbon C6-C35	67.2	10.0	"	"	"	"	"	"

Environmental Lab of Texas

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Plains All American EH & S 1301 S. County Road 1150		Project N	Project: 8 it	nch Moore 1 02-10273	to Jal #2			Fax: (432)	687-4914
Midland TX, 79706-4476		Project M	anager: Ca	mille Reyno	olds			02/03/06	5 18:25
			rganics h	w GC					
		Environ	montal I						
·····									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
EF-01 (6A30002-03) Soil									
Surrogate: 1-Chlorooctane		119 %		130	EA63114	01/31/06	02/01/06	EPA 8015M	
Surrogate: 1-Chlorooctadecane		114 %	70-1	130	n	"	"	"	
G									
WF-01 (6A30002-04) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EB60213	02/02/06	02/03/06	EPA 8021B	-
Toluene	ND	0.0250	n	"	"	n	"	"	
Ethylbenzene	ND	0.0250	"	**	"	"			
Xylene (p/m)	ND	0.0250	"	"	"	"	n	"	
Xylene (o)	ND	0.0250	"	**	n	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		91.0%	80-1	120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.2 %	80-1	120	"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA63114	01/31/06	02/01/06	EPA 8015M	
Diesel Range Organics >C12-C35	99.8	10.0	"	"	"	"	•	"	
Total Hydrocarbon C6-C35	99.8	10.0	n		"	"	11	**	
Surrogate: 1-Chlorooctane		112 %	70-1	30	"	"	"	n	
Surrogate: 1-Chlorooctadecane		128 %	70-1	30	"	"	"	"	
CF-01 (6A30002-05) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EB60213	02/02/06	02/03/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	11	"	
Ethylbenzene	ND	0.0250	"		"	**	"	"	
Xylene (p/m)	ND	0.0250		"	"	"	11		
Xylene (0)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene	•	95.0 %	80-1	20	"		"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %	80-1	20	"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA63114	01/31/06	02/01/06	EPA 8015M	
Diesel Range Organics >C12-C35	186	10.0	"				"		
Total Hydrocarbon C6-C35	186	10.0	*	"	77	"	11	11	
Surrogate: 1-Chlorooctane		118 %	70-1	30	n	 n		"	
Surrogate: 1-Chlorooctadecane		116%	70-1	30	"	"	"	n	

Environmental Lab of Texas

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Plains All American EH & S	Project:	8 inch Moore to Jal #2		Fax: (432) 687-4914
1301 S. County Road 1150	Project Number:	2002-10273		Reported:
Midland TX, 79706-4476	Project Manager:	Camille Reynolds		02/03/06 18:25

General Chemistry Parameters by EPA / Standard Methods

		Environn	nental l	Lab of To	exas				
- Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NF-01 (6A30002-01) Soil									
% Moisture	0.7	0.1	%	1	EA63103	01/30/06	01/31/06	% calculation	
SF-01 (6A30002-02) Soil									
% Moisture	0.5	0.1	%	1	EA63103	01/30/06	01/31/06	% calculation	
EF-01 (6A30002-03) Soil									
% Moisture	0.6	0.1	%	1	EA63103	01/30/06	01/31/06	% calculation	
WF-01 (6A30002-04) Soil									
% Moisture	2.0	0.1	%	1	EA63103	01/30/06	01/31/06	% calculation	
CF-01 (6A30002-05) Soil									
% Moisture	0.3	0.1	%	1	EA63103	01/30/06	01/31/06	% calculation	

Environmental Lab of Texas

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Plains All American EH & S	Project: 8 inch Moore to Jal #2								Fax: (432) 687-4914		
1301 S. County Road 1150		Project N	umber: 20	02-10273					Repo	orted:	
Midland TX, 79706-4476		Project Ma	anager: Ca	mille Reyno	lds				02/03/0	06 18:25	
	Or	ganics by	y GC - Q	uality C	ontrol						
]	Environi	mental L	ab of Te	xas						
		Reporting		Spike	Source		%REC		RPD		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	
Batch EA63114 - Solvent Extraction (GC)		<u> </u>						<u> </u>			
Blank (EA63114-BLK1)				Prepared:	01/31/06 A	nalyzed: 02	2/01/06				
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet		-						
Diesel Range Organics >C12-C35	ND	10.0	**								
Total Hydrocarbon C6-C35	ND	10.0									
Surrogate: 1-Chlorooctane	61.5		mg/kg	50.0		123	70-130				
Surrogate: 1-Chlorooctadecane	55.1		"	50.0		110	70-130				
LCS (EA63114-BS1)				Prepared: (01/31/06 A	nalyzed: 02	2/01/06				
Gasoline Range Organics C6-C12	489	10.0	mg/kg wet	500		97.8	75-125				
Diesel Range Organics >C12-C35	549	10.0	"	500		110	75-125				
Total Hydrocarbon C6-C35	1040	10.0	**	1000		104	75-125				
Surrogate: 1-Chlorooctane	64.9		mg/kg	50.0		130	70-130				
Surrogate: 1-Chlorooctadecane	58.3		"	50.0		117	70-130				
Calibration Check (EA63114-CCV1)				Prepared: (01/31/06 A	nalyzed: 02	2/02/06				
Gasoline Range Organics C6-C12	487		mg/kg	500	•	97.4	80-120				
Diesel Range Organics >C12-C35	542		м	500		108	80-120				
Total Hydrocarbon C6-C35	1030		"	1000		103	80-120				
Surrogate: 1-Chlorooctane	65.0			50.0			70-130				
Surrogate: 1-Chlorooctadecane	58.5		"	50.0		117	70-130				
Matrix Spike (EA63114-MS1)	Sour	e: 6A30007	7-07	Prepared: (01/31/06 A	nalyzed: 02	:/01/06				
Gasoline Range Organics C6-C12	524	- 10.0	mg/kg dry	561	ND	93.4	75-125				
Diesel Range Organics >C12-C35	566	10.0	"	561	ND	101	75-125				
Total Hydrocarbon C6-C35	1090	10.0	"	1120	ND	97.3	75-125				
Surrogate: 1-Chlorooctane	64.7	· · ·	mg/kg	50.0		129	70-130				
Surrogate: 1-Chlorooctadecane	59.5		"	50.0		119	70-130				
Matrix Spike Dup (EA63114-MSD1)	Sour	e: 6A30007	7-07	Prepared: (01/31/06 A	nalyzed: 02	/01/06				
Gasoline Range Organics C6-C12	526	10.0	mg/kg dry	561	ND	93.8	75-125	0.381	20		
Diesel Range Organics >C12-C35	566	10.0	"	561	ND	101	75-125	0.00	20		
Total Hydrocarbon C6-C35	1090	10.0	"	1120	ND	97.3	75-125	0.00	20		
Surrogate: 1-Chlorooctane	63.3		mg/kg	50.0		127	70-130				
Surrogate: 1-Chlorooctadecane	59.4		"	50.0		119	70-130				

Environmental Lab of Texas

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Plains All American EH & S 1301 S. County Road 1150		F Project N	Project: 8 in umber: 200	nch Moore to 02-10273) Jal #2				Fax: (432) Repo	687-4914 rted:				
Midland TX, 79706-4476	Project Manager: Camille Reynolds								02/03/0	6 18:25				
	0	rganics by	GC - Q	uality Co	ontrol									
	Environmental Lab of Texas													
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes				
Batch EB60213 - EPA 5030C (GC)														
Blank (EB60213-BLK1)				Prepared &	Analyzed:	02/02/06								
Benzene	ND	0.0250	mg/kg wet			-								
Toluene	ND	0.0250	"											
Ethylbenzene	ND	0.0250	"											
Xylene (p/m)	ND	0.0250	"											
Xylene (0)	ND	0.0250	**											
Surrogate: a,a,a-Trifluorotoluene	36.1		ug/kg	40.0		90.2	80-120							
Surrogate: 4-Bromofluorobenzene	35.8		"	40.0		89.5	80-120							
LCS (EB60213-BS1)				Prepared &	Analyzed:	02/02/06								
Benzene	0.0498	0.00100	mg/kg wet	0.0500		99.6	80-120							
Toluene	0.0512	0.00100		0.0500		102	80-120							
Ethylbenzene	0.0529	0.00100	"	0.0500		106	80-120							
Xylene (p/m)	0.0998	0.00100	"	0.100		99.8	80-120							
Xylene (0)	0.0512	0.00100	"	0.0500		102	80-120							
Surrogate: a,a,a-Trifluorotoluene	43.3		ug/kg	40.0		108	80-120							
Surrogate: 4-Bromofluorobenzene	46.1		"	40.0		115	80-120							
Calibration Check (EB60213-CCV1)				Prepared: (02/02/06 Ai	nalyzed: 02	2/03/06							
Benzene	48.7		ug/kg	50.0		97.4	80-120	,						
Toluene	50.4		"	50.0		101	80-120							
Ethylbenzenc	48.5			50.0		97.0	80-120							
Xylene (p/m)	90.5			100		90.5	80-120							
Xylene (0)	46.0		"	50.0		92.0	80-120							
Surrogate: a,a,a-Trifluorotoluene	40.5		"	40.0		- 101	80-120							
Surrogate: 4-Bromofluorobenzene	33.3		"	40.0		83.2	80-120							
Matrix Spike (EB60213-MS1)	Sou	arce: 6A27003	-01	Prepared: 0	02/02/06 Ai	nalyzed: 02	/03/06							
Benzene	1.25	0.0250	mg/kg dry	1.31	ND	95.4	80-120							
Toluene	1.30	0.0250	"	1.31	ND	99.2	80-120							
Ethylbenzene	1.35	0.0250	п	1.31	ND	103	80-120							
Xylene (p/m)	2.56	0.0250	"	2.62	ND	97.7	80-120							
Xylene (0)	1.31	0.0250		1.31	ND	100	80-120							
Surrogate: a,a,a-Trifluorotoluene	39.8		ug/kg	40.0		99.5	80-120							
Surrogate: 4-Bromofluorobenzene	47.7		"	40.0		119	80-120							

Environmental Lab of Texas

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12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Plains All American EH & S	Project: 8 inch Moore to Ja	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10273	Reported:
Midland TX, 79706-4476	Project Manager: Camille Reynolds	02/03/06 18:25

Organics by GC - Quality Control

Environmental Lab of Texas

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EB60213 - EPA 5030C (GC)

Matrix Spike Dup (EB60213-MSD1)	Sour	ce: 6A27003	-01	Prepared: 0	02/02/06	Analyzed: 0	2/03/06		
Benzene	1.15	0.0250	mg/kg dry	1.31	ND	87.8	80-120	8.30	20
Toluenc	1.22	0.0250	n	1.31	ND	93.1	80-120	6.34	20
Ethylbenzene	1.26	0.0250	11	1.31	ND	96.2	80-120	6.83	20
Xylene (p/m)	2.39	0.0250	н	2.62	ND	91.2	80-120	6.88	20
Xylene (0)	1.20	0.0250	"	1.31	ND	91.6	80-120	8.77	20
Surrogate: a,a,a-Trifluorotoluene	41.3		ug/kg	40.0		103	80-120		
Surrogate: 4-Bromofluorobenzene	44.4		"	40.0		111	80-120		

Environmental Lab of Texas

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Plains All American EH & SProject:8 inch Moore to Jal #2Fax: (432) 687-49141301 S. County Road 1150Project Number:2002-10273Reported:Midland TX, 79706-4476Project Manager:Camille Reynolds02/03/06 18:25

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

· · · ·		Reporting	Spike	Source	e %REC			RPD	
Analyte	Result	Limit Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EA63103 - General Preparatio	n (Prep)								
Blank (EA63103-BLK1)			Prepared: 0	1/30/06 A	nalyzed: 01	/31/06			
% Solids	100	%					-		
Duplicate (EA63103-DUP1)	Sourc	e: 6A27009-01	Prepared: 0	1/30/06 A	Analyzed: 01/31/06				
% Solids	96.1	. %		96.1			0.00	20	
Duplicate (EA63103-DUP2)	Sourc	e: 6A27022-03	Prepared: 0	1/30/06 A	nalyzed: 01	/31/06			
% Solids	92.2	%		91.3		-	0.981	20	
Duplicate (EA63103-DUP3)	Sourc	e: 6A30007-06	Prepared: 0	1/30/06 A	nalyzed: 01	/31/06			
% Solids	97.6	~ ~ %		98.4			0.816	20	

Environmental Lab of Texas

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12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Plains Al 1301 S. (Midland	II American EH & S County Road 1150 TX, 79706-4476	Project: Project Number: Project Manager:	8 inch Moore to Jal #2 2002-10273 Camille Reynolds	Fax: (432) 687-491 Reported: 02/03/06 18:25			
		Notes and De	finitions				
DET	Analyte DETECTED						
ND	Analyte NOT DETECTED at or above the reporting limit	t					
NR	Not Reported						
dry	Sample results reported on a dry weight basis						
RPD	Relative Percent Difference						
LCS	Laboratory Control Spike						
MS	Matrix Spike						
Dup	Duplicate						

Report Approved By:

Raland K Julits

2/3/2006

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer Jeanne Mc Murrey, Inorg. Tech Director LaTasha Cornish, Chemist Sandra Sanchez, Lab Tech.

Date:

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

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

_____ · _ · ·

	•
Client: Plains P/L	
Date/Time: 01-27-06 @1710	
Order #: 6A 30002	
Initials: JMM	
Sample Pec	aint Chacklist
Temperature of container/cooler?	Yes NO GO C
Shipping container/cooler in good condition?	(Yes) No
Custody Seals intact on shipping container/cooler?	Yes No Not present
Custody Seals intact on sample bottles?	(Yes) No Not present
Chain of custody present?	es No
Sample Instructions complete on Chain of Custody?	(es) No
Chain of Custody signed when relinguished and received?	Ares N No
Chain of custody agrees with sample label(s)	NO NO
Contriner locals legisle and intact?	I Macal No
Containe: labels legicle and intact:	
Sample Matrix and properties same as on chain or custody?	
Samples in procer container/cottie?	Aces I No
Samples properly preserved?	(TES) NO
Sample bottles intact?	(TES) NO
Preservations documented on Chain of Custody?	Nes No I
Containers documented on Chain of Custody?	Ne I
Sufficient sample amount for indicated test?	(Yes) No
All samples received within sufficient hold time?	Yak No
VOC complex have zero beadenace?	
Variance De Contact Person: Date/Time: Regarding:	ocumentation: Contacted by:
Corrective Action Taken:	
	· · · · · · · · · · · · · · · · · · ·

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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

		Rele	ase No	otifica	tion :	and C	orrecti	ve Actior	n					
O	PERATOR	ł					\boxtimes	Initial Report	🗌 Fir	al Report				
Name of Company	1						Contact							
EOTT		- <u></u> .					Frank Hernandez							
Address PO Box 1660 580 ⁴	5 East High	way 80 Midl	and Texa	is 79702			1 elephone No. 915.638.3799							
Facility Name	<u>Lust mgn</u>	<u>muj oo muu</u>	<u></u>				Facility	/ Туре						
8" Moore to Jal #2					8" Stee	l Pipeline	<u> </u>							
			· ·=								<u> </u>			
Surface Owner					Miner	ral Owne	r			Lease N	0.			
State of New Mexi			. <u> </u>		L									
			[]	LOCA	TION	OF REL	EASE	East from the	East/West L					
Unit Letter	Section	T17S	Range	Feet from	m the	North/S	outh Line	reet from the	East/west L	Lat 32	Lea 49' 56 61"N			
10		11/5	R37E							Lon. 10	3 15'			
L			L	L	_					08.47"V	/			
				NAT	URE O	FRELE	ASE							
Type of Release							Volume of	Release		Volume Reco	overed			
Crude Oil Source of Release				··· _ ···-			25 bbls b Date and F	arrels	ence	0 bbls barro	ur of			
8" Steel Pipeline							EOTT		Alee .	Discovery				
									10-22-02 @	7:00 PM				
Was Immediate Noti	ce Given?	⊠ Yes Γ		Not Rea	mired		lf YES, IC Larry John	whom?						
By Whom?	··· <u></u>						Date and L	lour						
Pat McCasland, EPI							10-23-02 (@ 7:00 AM						
Was a Watercourse I	Reached? [Yes 🛛 N	10				If YES, Vo	olume Impactin	g the Waterc	ourse.				
							NA							
If a Watercourse was	s Impacted, I	Describe Fully.	+											
Describe Cause of Pi	roblem and H	Remedial Actio	n Taken.*					amiantian Car			4-4			
disposed of.	e will be det	ineated to deter	mine the	vertical a	na noriz	ontai exte	nts of cont	amination. Col	ntaminated so	bii will be bien	ded on site or			
								·····						
Describe Area Affec	ted and Clea	nup Action Tal	cen.*	41	1 1		outouto of		Contoniust					
site or disposed of. R	emedial Go	als: TPH 8015r	n = 100 m	g/Kg, Be	nzene =	10 mg/Kg	s, and BTE	X, i.e., the mas	s sum of Ber	zene, Ethvl Be	enzene.			
Toluene, and Xylene	s = 50 mg/K	g.		0 0,		0.0				· ·	,			
L hereby certify that t	the informati	ion given above	is true or	d comple	te to the	best of n	w knowled	lae and underst	and that nurs	uant to NMOC	D rules and			
regulations all operat	tors are requi	ired to report a	nd/or file of	certain rel	lease not	tifications	and perfor	m corrective ac	ctions for rele	ases which ma	y endanger			
public health or the e	nvironment.	The acceptant	ce of a C-l	141 report	t by the	NMOCD	marked as	"Final Report"	does not reli	eve the operate	or of liability			
should their operatio	ns have faile	d to adequately	investiga	te and rer	mediate	contamina	tion that p	ose a threat to g	ground water	, surface water	, human			
other federal, state, o	r local laws	and/or regulation	ons.		-14116p		lot reneve	ine operator or	responsionit	y toi compitan	ce with any			
Signature:						_	(DIL CONS	ERVATI	ON DIVIS	SION			
Printed Name: Frank	< Hernandez						Approve	d by District S	unervisor					
								District 0						
Title: District Enviro	onmental Suj	pervisor					Approva	al Date:		Expiration I	Date:			
Date: October 23,	2003	Phor	e: 915.63	8.3799			Conditio	ons of Approva	1:					

 Date:
 October 23, 2003

 * Attach Additional Sheets If Necessary



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON Governor Joanna Prukop Cabinet Secretary Mark E. Fesmire, P.E. Director Oil Conservation Division

April 12, 2006

Ms. Camille Reynolds Plains All American 3112 West Highway 82 Lovington, NM 88260

RE: 1005 Annual Groundwater Monitoring Report Plains Pipeline, L.P. 8" Moore to Jal #2 Site NW/4 SE/4 of Section 16, Township 17 South, Range 37 East Eea County, New Mexico Ref. #2002-10273 NMOCD File Number 1R-0381

Dear Ms. Reynolds:

The New Mexico Oil Conservation Division has received and reviewed the above report submitted on behalf of Plains Pipeline, L.P. (Plains) by Talon/LPE. This report is accepted and approved with the following understandings and conditions:

- 1. Plains will continue to gauge the monitor wells bi-weekly to record water and PSH levels and recover PSH from the groundwater monitoring wells that are impacted with PSH.
- 2. Plains will sample the groundwater monitoring well network quarterly and submit the samples for quantification of BTEX. The samples will be analyzed for PAH annually.
- 3. Plains will install six additional groundwater-monitoring wells at the site to further delineate the lateral extent of groundwater impacts. Prior to installation, Plains will submit a plan describing the locations of these wells.
- 4. Plains will install a continuous recovery unit utilizing a pneumatic pump devoted to each well containing PSH.

NMOCD approval does not relieve Plains of liability should its operations at this site prove to have been harmful to public health or the environment. Nor does it relieve Plains of its responsibility to comply with the rules and regulations of any other governmental agency.

Plains 8" Moore to Jal #2 2005 Annual Report Approval April 12, 2006 Page 2 of 2

If you have any questions, contact me at (505) 476-3492 or ed.martin@state.nm.us

NEW MEXICO OIL CONSERVATION DIVISION

& Marton

Edwin E. Martin Environmental Bureau

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Copy: NMOCD, Hobbs Jason Graham, Talon/LPE



March 29, 2006

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

Re: Plains All American – Annual Monitoring Reports 2 Sites in Lea County, New Mexico

Dear Mr. Martin:

Plains All American is an operator of crude oil pipelines and terminal facilities in the state of New Mexico. Plains All American actively monitors certain historical release sites exhibiting groundwater impacts, consistent with assessments and work plans developed in consultation with the New Mexico Oil Conservation Division (NMOCD). In accordance with the rules and regulations of the NMOCD, Plains All American hereby submits our Annual Monitoring reports for the following sites:

8" Moore to Jal #1 8" Moore to Jal #2 Section 16, Township 17 South, Range 37 East, Lea County Section 16, Township 17 South, Range 37 East, Lea County

TalonLPE prepared these documents and has vouched for their accuracy and completeness, and on behalf of Plains All American, I have personally reviewed the documents and interviewed TalonLPE in order to verify the accuracy and completeness of these documents. It is based upon these inquiries and reviews that Plains All American submits the enclosed Annual Monitoring Reports for the above facilities.

If you have any questions or require further information, please contact me at (505) 441-0965.

Sincerely,

amile Keynolds

Camille Reynolds Remediation Coordinator Plains All American

CC: Larry Johnson, NMOCD, Hobbs, NM

Enclosures



March 22, 2006

Mr. Edwin E. Martin New Mexico Oil Conservation Division Environmental Bureau 1220 South St. Francis Drive Santa Fe, New Mexico 87505



Re: Annual Groundwater Monitoring Report Plains Pipeline, L.P.
8" Moore to Jal #2 (Rcf #2002-10273) NW/4 of the SE/4 of Section 16, Township 17 South, Range 37 East Lea County, New Mexico NMOCD Ref. 1R-0381

Mr. Martin:

The 8" Moore to Jal #2 release site is located approximately 9.5 miles southeast of Lovington in Lea County, New Mexico. The release occurred on property owned by the State of New Mexico and is utilized as pasture land. The site is located in a rural area within the West Lovington Oil Field, with no residences or surface water within a 1,000-foot radius of the facility.

In October 2002, a release of approximately twenty-five (25) barrels of crude oil occurred at the site due to corrosion (internal and/or external) of the pipeline. Approximately six thousand (6,000) square feet (ft^2) of surface area was impacted by the release. Surficial soil saturated by the release was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm for treatment.

The details of the annual groundwater monitoring, phase separated hydrocarbon recovery activities, sampling activities, analytical results, and remediation work plan are described in the attached 2005 Annual Groundwater Monitoring Report. If you have any questions feel free to contact me at (505) 441-4835 or by E-mail at jgraham@talonlpe.com. Thank you very much.

TALON/LBE Jason M. Graham Project Manager

Cc: Camille Reynolds, Plains All American Pipeline, L.P. Jeff Dann, Plains All American Pipeline, L.P.

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8" Moore to Jal #2 Annual Groundwater Monitoring Report

Plains Ref: 2002-10273 NW¼ of the SE¼ of Section 16, Township 17 South, Range 37 East Lea County, New Mexico

~9.5 Miles Southeast (136°) of Lovington, Lea County, New Mexico Latitude: N32° 49' 56.6" Longitude: W103° 15' 8.31"

March 2006

Prepared For:



333 Clay Street, Suite 600 Houston, TX 77002

Prepared By: TalonLPE 318 East Taylor Street Hobbs, New Mexico 88240

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Distribution List

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SI	IS		c		r	com
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Mailing Address	1220 South St. Francis Drive Santa Fe, NM 87505	1625 French Dr. Hobbs, NM 88231	3112 West U.S. Hwy 82 Lovington, NM 88260	P. O. Box 4648 Houston, TX 77210-4648	P. O. Box 3119 Midland, TX 79702-3119	318 East Taylor Street Hobbs, New Mexico 88240
Company or Agency	NMOCD	NMOCD	Plains All American Pipeline	Plains All American Pipeline	Plains All American Pipeline	Talon/LPE
Title	Environmental Engineer	Environmental Engineer	Remediation Coordinator	Senior Environmental Specialist	Environmental Specialist	
Name	Ed Martin	Larry Johnson	Camille Reynolds	Jeff Dann	Daniel Bryant	File

NMOCD - New Mexico Oil Conservation Division

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ANNUAL GROUNDWATER MONITORING REPORT

Introduction

The 8" Moore to Jal #2 release site is located approximately 9.5 miles southeast of Lovington in Lea County, New Mexico, at an elevation of approximately 3,770 feet above mean sea level (reference Figures 1 and 2). The release occurred on property owned by the State of New Mexico and is utilized as pasture land. The site is located in a rural area within the West Lovington oil field, with no residences or surface water within a 1,000-foot radius of the facility.

In October 2002, a release of approximately 25 barrels of crude oil, of which there was no recovery, occurred at the site due to corrosion (internal and/or external) of the pipeline. Approximately 8,000 square feet (ft^2) of surface area was impacted by the release. Surface soil saturated by the release was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm for treatment.

In an effort to delineate the extent of impacted soil at the site, three soil borings were advanced at the site to depths ranging from 20 to 40 feet below ground surface (bgs) in November 2002. Field analyses of soil samples collected at discreet intervals indicated organic vapor concentrations exceeded 100 parts per million (ppm) at least to a depth of 40 feet bgs in soil boring BH-3.

Excavation activities commenced at the site in June 2003 in order to remove soil impacted above the New Mexico Oil Conservation Division (NMOCD) remedial thresholds. Approximately 1,220 cubic yards of soil were excavated and run through a shaker to separate the rock from the soil. After the soil and rock had been separated, the soil (approximately 575 cubic yards) was spread out into a land treatment area and the rock was stockpiled on site (reference *Figure 3*). Upon the completion of excavation activities, composite samples were collected from the north sidewall, south sidewall, east sidewall and bottom of the excavation to document the successful removal of soil impacted above NMOCD remedial thresholds. Field analyses of these samples indicated organic vapor concentrations of <10.0 ppm for all samples. Laboratory analyses confirmed all analytes were below the NMOCD remedial thresholds, with the exception of the sample collected from the north sidewall. On June 3, 2005, TalonLPE collected a confirmation sample from the west wall, since one was previously uncollected. The samples WW-N and WW-S were determined to be below regulatory limits (reference *Table 5*).

Groundwater Monitoring Well Installation

Based on field analyses of samples collected from the soil borings advanced during initial delineation activities, the NMOCD requested that a groundwater monitoring well be installed to determine if groundwater had been impacted by the release. One groundwater monitoring well, MW-1 was installed at the site in July 2004. This groundwater monitoring well was installed adjacent to the pipeline near the point of release (reference *Figure 3*) to a depth of 85 feet below ground surface (bgs) and screened from 65 to 85 feet bgs (reference *Appendix C*).

Due to the presence of phase separated hydrocarbons (PSH) in MW-1, three additional groundwater monitoring wells (MW-2, MW-3 and MW-4) were installed at the site in October 2004. These wells were installed to delineate the lateral extent of PSH and/or dissolved phase impacts to the groundwater.

Groundwater monitoring well MW-2 was installed approximately 106 feet north-northwest of groundwater monitoring well MW-1 (reference *Figure 3*) to a depth of 82.5 feet bgs and screened from 62.5 to 82.5 feet bgs (reference *Appendix C*). Groundwater monitoring well MW-3 was installed approximately 85 feet east-southeast of groundwater monitoring well MW-1 (reference *Figure 3*) to a depth of 83 feet bgs and screened from 63 to 83 feet bgs (reference *Appendix C*). Groundwater monitoring well MW-1 (reference *Figure 3*) to a depth of 83 feet bgs and screened from 63 to 83 feet bgs (reference *Appendix C*). Groundwater monitoring well MW-4 was installed approximately 90 feet south-southeast of groundwater monitoring well MW-1 (reference *Figure 3*) to a depth of 87 feet bgs and screened from 67 to 87 feet bgs (reference *Appendix C*).

Groundwater Gradient and PSH Thickness

The monitoring wells were gauged prior to determine the depth to groundwater and the thickness of any PSH. Groundwater gradient appears to be in a southerly direction as indicated in *Figures* 4a - 4d. Except for minor fluctuations, groundwater levels and gradient have remained relatively constant. PSH levels in groundwater monitoring well MW-1 have remained consistent with an approximate thickness of six to seven feet. No measurable PSH was recorded from groundwater monitoring well MW-2 and MW-4. From January 2005 to September 2005, there was no measurable PSH in groundwater monitoring well MW-3, however, from September 2005 through December 2005, PSH was recorded in MW-3 and levels have risen from two-hundredths of a foot to seven-tenths of a foot. The PSH plume has remained stable, with the exception of MW-3 throughout the four quarters of 2005. A summary of groundwater elevations and PSH thickness is included in *Tables 1 and 2* and illustrated in *Figures 4a - 4f* and 5a - 5d.

PSH Recovery

Recovery of the PSH in the vicinity of groundwater monitoring well MW-1 was accomplished via hand bailing by EPI during the first four months of 2005. TalonLPE took over the project in May of 2005 and with the use of a portable submersible pump enhanced recovery was achieved. The first quarter of 2005 had total recovery of 112.00 gallons of PSH. It is suggested this amount was low due to hand bailing. The second quarter of 2005 saw a slight decrease in PSH recovery for April and May with 106 gallons of PSH recovered. However, recovery significantly increased in June, due to enhanced recovery techniques. The third quarter had the largest recovery period for all of 2005, with a total PSH recovery of 261.00 gallons. The last quarter of 2005 had a total recovery of 228.00 gallons of PSH. A total of 707.00 gallons (16.8 barrels) of PSH were recovered during Fiscal Year 2005 (reference Table 1 and 2). Recovered PSH was placed into the Plains Lovington Station sump, WHich DwmPs into the PLAins PiPELiNE System.

Groundwater Sampling

Groundwater monitoring wells MW-2, MW-3 and MW-4 were sampled on March 18, 2005, June 14, 2005, September 30, 2005 and December 30, 2005 with the samples being submitted for quantification of benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8260b and poly-aromatic hydrocarbons (PAH) using EPA Methods 610 & 8270C.

All wells were purged a minimum of three well volumes or dry prior to sampling. Groundwater samples were collected utilizing dedicated or disposable sample bailers. Samples were then placed on ice and shipped to an independent laboratory under chain-of-custody for analyses.

Groundwater Analytical Results

Analytical results for the samples collected from groundwater monitoring well MW-2 on March 18, 2005 indicated benzene concentrations of 0.0404 mg/L, toluene concentrations of 0.0251 mg/L, ethylbenzene concentrations of 0.00231 mg/L and total xylene concentrations of 0.00744mg/L. Samples collected from MW-2 on June 14, 2005 indicated benzene concentrations of 0.00109 mg/L, toluene concentrations of less than 0.001 mg/L, ethylbenzene concentrations of less than 0.001 mg/L and total xylene concentrations of less than 0.002mg/L. Samples collected from MW-2 on September 30, 2005 indicated benzene concentrations of 0.0428 mg/L, toluene concentrations of 0.0392 mg/L, ethylbenzene concentrations of 0.00561 mg/L and total xylene concentrations of 0.01265 mg/L. Samples collected from MW-2 on December 30, 2005 indicated benzene concentrations of less than 0.001 mg/L, toluene concentrations of less than 0.001 mg/L, ethylbenzene concentrations of less than 0.001 mg/L and total xylene concentrations of less than 0.001 mg/L. Analytical results for PAH analysis taken on December 30, 2005 were reported as non-detectable (ND) at or above each analytes respective Minimum Detectable Limit (MDL). Benzene was the only analyte reported above the New Mexico Water Quality Control Commission (NMWQCC) groundwater standard of 0.010 mg/L, during the first and third quarters only reference Table 3 and 4.

Analytical results for the sample collected from groundwater monitoring well MW-3 on March 18, 2005 indicated benzene concentrations of 1.23 mg/L, toluene concentrations of 0.338 mg/L, ethylbenzene concentrations of 0.0206 mg/L and total xylene concentrations of 0.251 mg/L. Samples collected from MW-3 on June 14, 2005 indicated benzene concentrations of 11.0 mg/L, toluene concentrations of 2.34 mg/L, ethylbenzene concentrations of 0.792 mg/L and total xylene concentrations of 1.65 mg/L. No groundwater samples were collected during the final two quarters of 2005 due to the presence of PSH. Benzene was the only analyte reported above the NMWQCC groundwater standard of .010 mg/L, during the first quarter. Benzene, toluene, ethylbenzene and total xylene were all above the NMWQCC groundwater standards of .010 mg/L for ethylbenzene and 0.620 mg/L for toluene, 0.750 mg/L for toluene, 0.750 mg/L for ethylbenzene and 0.620 mg/L for total xylenes respectively, during the second quarter *reference Table 3 and 4*.

Analytical results for the sample collected from groundwater monitoring well MW-4 on March 18, 2005 indicated benzene concentrations of 5.23 mg/L, toluene concentrations of 0.989 mg/L, ethylbenzene concentrations of 0.259 mg/L and total xylene concentrations of 0.468 mg/L. Samples collected from MW-4 on June 14, 2005 indicated benzene concentrations of 8.290 mg/L, toluene concentrations of 0.827 mg/L, ethylbenzene concentrations of 0.308.00 mg/L and total xylene concentrations of 0.3139 mg/L.



2005 indicated benzene concentrations of 5.36 mg/L, toluene concentrations of 0.148 mg/L, ethylbenzene concentrations of 0.153 mg/L and total xylene concentrations of less than 0.20 mg/L. Samples collected from MW-4 on December 30, 2005 indicated benzene concentrations of 0.00449 mg/L, toluene concentrations of less than 0.00005 mg/L, ethylbenzene concentrations of less than 0.00005 mg/L and total xylene concentrations of less than 0.00005 mg/L. Analytical results for PAH analysis taken on December 30, 2005 were reported at 0.0199 mg/L. Benzene and toluene were the only analytes reported above the NMWQCC groundwater standard of 0.01 mg/L and 0.75 μ g/L respectively, during the first and second quarters. Benzene was above the standard during the third quarter. All parameters were below standards during the fourth quarter *reference Table 3 and 4*.

A summary of the groundwater analytical results are included in *Table 3* and *Table 4* and copies of analytical results and chain-of-custody forms are included in *Appendix A*.

Recommendations

Based on field monitoring and laboratory analytical results collected during 2005, the following activities are recommended for the site:

- 1) Continue to gauge the monitor wells on a bi-weekly basis to record water and PSH levels and recover PSH from the groundwater monitoring wells impacted with PSH.
- 2) Sample the groundwater monitoring well network on a quarterly basis and submit the samples for quantification of BTEX. The samples should be analyzed annually for the presence of PAH.
- 3) Install six additional groundwater monitoring wells at the site to further delineate the lateral extent of groundwater impacts (reference *Figure 6*).
- 4) Upon the installation of the proposed monitoring wells, emphasizing on the complete delineation of the site, evaluate the site-specific conditions and design and install a continuous recovery unit utilizing a pneumatic pump devoted to each PSH containing well.

Signatures

Written By:

Jason M. Graham. B.S Project Manager Talon/LPE

Reviewed By:

1a 2

Terry James B.S., M.S. Semor Project Manager Talon/LPE

PLAINS ALE AMERICAN

FIGURES

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TABLES

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Summary of PSH Thickness & Gauging Moasurements Table 1

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TALON

Summary of PSH Thickness & Gauging Measurements Table 1

Cummulativa Rocovary (galtons) 725 30 746 90 753 75 753 75 764 90 714 25 714 25 714 25 803.25 814.75 825.25 845.75 846.00 711.25 10131 V V V V V Total Volume Recovery 9.25 10.25 10.25 11.20 11.20 10.24 10.25 10.25 10.26 NAME AND A CONTRACT OF A CONTRACT 10.75 1926 1926 10.25 VAN ANA ANA Cummulative Recovery (13.00 (13.00 (13.00 (14.00 (14.00 (14.00 (14.00 (14.00 (14.00 (14.00 (15.00 (15.00 (16.05 (16.05 (16.05 (16.05) (17.05) Water 8888 8883 888 8888 990 Volumo Recovery (gallons) Water 8888 0.25 Cummutativo (gailons) 712.40 721.20 72 /03.50 PSH Cum Recovery (PSH Valume Recovered (milone) 10.00 PSH THICKNESS (ft) 8 8 8 0,00 8888 000 6 10 00.00 0.000 Corrected Retailve Top Groundwater Elevation (Foet)* 3687 44 3667 44 3667 43 3667 54 3667 55 3667 55 3667 55 3667 55 3667 55 3667 55 0694 (2) 0694 (2) 1603 (Dupth to Walnr Balow Top of Casing (Foot) 79.11 79.11 79.11 79.11 79.13 79.13 79.13 79.13 79.13 79.13 79.13 79.13 79.13 79.13 79.13 79.13 79.13 79.13 79.14 8 8 F 10971 1971 1411 11 50 144 130 Dapth to PSH Balow Top of Caalnn (Feot) Habiliur Top of Caning Elevation (Fool)* 011 / 19/10 012 / 19/10 012 / 19/10 012 / 19/10 012 / 19/10 012 / 19/10 012 / 19/10 012 / 19/10 012 / 19/10 012 / 19/10 012 / 19/10 012 / 19/10 N01/11 01/11 01/11 01/11 3771.04 3771.04 3771.04 3771.04 3771.04 3771.04 3771.04 3771.04 MU 1/16 37/1.04 37/1.04 37/1.04 37/1.04 011/10 01/11 37/108 37/108 37/108 37/108 37/108 37/108 37/108 37/104 3771.04 3771.04 3771.04 3771.04 3771.04 3771.04 1111 04 PU 1776 01/1.005 01/1.005 01/1.005 01/1.005 01/1.005 02/1.005 02/1.005 02/1.005 01/1.005 01/0.005 01/ 11/11/05 11/11/05 11/12/015 11/22/015 11/22/015 11/10/05 12/10/05 12/10/05 12/10/05 DATE GAUGED 07/24/05 07/24/05 08/02/05 08/04/05 01/06/05 CINCOME CINCO 0407/6415 0407/6415 0407/1/05 040715/05 040715/05 040715/05 040715/05 11/09/01 12//30/05 SILE-200 Plates All American Pipolete, F. 8" Moore to Jat #2 2002-10273 (1, uoo) 1-WM MW-2

11:50

Page 2 of 5

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Summary of PSH Thickness & Cauging Measuroments

Platr, Al Athenrar Physics 8" Munte to Jal #2 - 2005-10	1.P 273				Table 1					and a second		
		But she Tan	Death to PSH	Doub to Water	Corrected Bul stine	HEd	aminu H28		Water	Cummulation	Tobat	Cummitative
1		Casing Elevation	Bulow Top of	Below Top of	Top Groundwater	THICKNESS	Recovered	PSH Cummutative	Recovery	Recovery	Volume	Recovery
MELL ID	DATE GAUGED	11-001	Catalog (Fort)	Cusan((Font)	r Invation (rant)	E	(duoinals)	Kanonery (gallong)	(suone)	fauoneßi	касочину	fauoließi
MVV-Z (CON'I)	60/02/00	31/104			25 10.90	00.0	VN	VIN	0.00	000	VN	VIN
	5082200	37/1.04	212	11 32	20 1/1-00-	0.00	VIN	VILV	0.00	0.00		VIN
	50/1.7/00	3771.04		11.16	10,000	980	VN	VIN		000	VN	VIN
	10/04/05	3771.04	N D.	14.11	3013.47	0.00	N/A	AUA	0.00	0.00	VIN	VIN
	10/01/02	3//1.04	N IJ.	0171	31/13 44	0 (M)	N/A	AIA AIA	0.00	0.00	VN	VIN
	40/11/01	3171.04	N 1.	11 60	PF CLOE	0.011	VIN	VIN	0.00	0.00	VN	VIN
	10/13/05	3771.04	n z	17.61	3693-43	000	VN	VIN	0.00	0.00	VN	VN
	10/11/05	37/1.04	CI N	19.77	CP CLOSE	000	ViN	VIN	0.0	0.00	VN N	AIN
	10/2/1/05	3771.04	112	(1)	HE CLAR	000	VIN	VIN	0.00	000		VIN
	CO/0.201	AU. 1777	110	5111	OF LUDE.	000	VIN	VIN	800	000	VN	VIN
	11/01/04	3//1.04	N D.	697/1	SC LEIN:	000	VIN	VIN	0.00	0.00	NN	VIN
	11/04/05	37/1.04	(i v	6977	eff. (1998)	0 00	NIA	VIN	0.00	0.00	V/V	VIN
	11/09/055	3771.04	, CI N	6.7.77	16.6985	0 00	VIN	VIN	0.00	0.00	NIA	VIN
	11/11/05	3771.04	NI).	E/ 1/	16.0308	0 00	NIN	VIN	0.00	0.00	N/A	VN
	11/16/05	3471.04	ÜN	11:11	34(U). /6	990	VIN	VIN	0.00	0.00	VIN	ViN
	11/18/05	3//1.04	C Z	11.11	3603.26	000	VN	VIN	0.00	0.10	VN	VN
	11/27/05	3771.04		11.11	17.01002	000	VIN	VIN	0.00	0000	N/N	VN
	CDV01711	3111.04	TIN.	··· //	W-471002		N/M	VIN	0,110	0.00	VIN	VIN
	12/06/0021	1/1/10	11N	17.00	30.1.099	0.00	VIN	VIN	000	010		VIN
	12/14/05	3771.04	N D.	11.83	1770408	0.00	VN	VIN	0.00	0.00	VN	VIA
	12/16(05)	3771.04	N IJ.	1/.81	34(93.23	00.0	N/A	VN	0.00	0.00	VIN	VIN
	12/21/05	3771.04	N I.).	11.81	3000.23	0 00	N/N	VIN	0.00	0.00	AVA	ViN
	90/62/21	3771.04	N 1).	11.865	-01-101-10	0.010	VIN	VIN	0.00	00,0	VN	NIA
	12/21/05	\$0.1718.	N U.	CN.11	01 CG98	000	VN	VIN	0.00	0.00	VIN	VIN
	12//20/05	3771.04	N I).	1.11	CE CLINE	0.00	VN	VIN	0.00	0.00	VN	VN
E-VVI	0 1/06/02	Mi 1//E	(IN)	(8).44	05.6995	100	VN	VIN	000	0.00	VN.	VIN
	CON51711	3111214	N IN	10.40	06.4.50%		VIN	VIN		00.0	VNV	VIN
	120/02/11	PG 1772		(0.40	ALCON.	000	VIN	VIN	0.00	0.00	VIN	VIN
	02/02/05/	MI 1//E	N U.	(H.A5	360.009	0.00	V/N	VIN	0.00	0.00	ViN	VIA
	02/09/05	31/1.94	N D.	/8.67	ZF EUOR	000	NIA	VIN	0.00	0.00	V/N	NIA
	02/16/05	Ph 1/12	(I N	(H.A8	369346	0.00	NIA	NIA	0.00	0.00	VN	V/A
	02/24/05	3771.04	N 1).	8P.47	3603.46	0.00	VIN	VIN	0.00	0.00	VIN	ViN
	03/03/05	MI 1/1X	N I.	78.54	30513-40	0.00	V/N	NIN	0.00	0.00	VIA	VIN
	03/11/05	56.172	N 1).	(0.53	14 17 1997	000	VIN	VIN	0.00	0.00	VN	VN
	0.0711000	PI: 1775	112	19,87	WE LIGH.	000	VIN	VIN	000	0.00	VIN	VIN
	04/07/050	311.04	N D.	14:54	016136	000	VN	VN	0 01	0.00	VIN	V.N
	05/18/05	MI 1718	C1 N	01-07	A3 5741.	00.0	N/A	VIN	0.00	0.00	VIN	VN
	0142,405	377194	NU.	01-07	3042.54	00.0	V/N	VIN	0.00	0.00	V/N	VIN
	00/10/00	H-1715	N I.	/A.t.di	97 EP4E	D() (I	V/V	VIN	0.00	0.00	V/V	N/A
	06/0.005	3771.94	N1).	(1).02	UC ENDE	000	VN .	VN	0.00	0.00	AVA	VIN
	0/20/90	H-177E	ND.	1111	12 81/16	1919	N/N	VIN	000	000	VN.	ViN
	6001/00	H. 1778	112	/8/60	10 STAL	0.00	VIN	VIN	000	0.00	VN	VN VN
	0001-0002	PH: 1775	UN N	1910	10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	100	VIN	VIN				VN
	COLUMN COLUMN	NO 1771	(IN	78.66	30713.28	0.00	NA	VN	000	0.00	VIN	VIN
	06727055	1//1 94	(IN	/8.66	2023.28	0.00	NA	NA	0.00	0 (0	VIN	VIN
	(10452/40)	97/154	(IN	/8.64	3693-30	0.00	N/A	NIA	0 00	0.00	VN	VIA
	01/01/01	3/71.94	CI N	18.67	7.5 KIME	0.00	VIN	N/A	0.00	0.00	NIA	VIN
	0//06/01	PG 177E	ÎZ	78.68	3693.26	000	VN	VN	000	0.00	VN	NIA
	01/094005	161/16		/// //	PERCENT.	0.00	VN	V/N	000	000	VN	VIN
	CINAMU	1111			EC Y MADE	000	VN	VIN	000	0,00	V/V	VIN
	0//19/01:	3//194	r1.N	11/3	30.03.24	0.00	VIN	VN	0.00	0.00	VIN	VIN
	01/21/01	3771.94	CI.N	/H /5	26-33-19	0.00	NIA	VIN	000	0.00	VIN	ViN
	07/2/2015	NO 11/1:	(I'N	/8 /8	2003.16	0.00	VIN	N/A	000	000	NIA	NIA
	07/28/01:5	3771 SM I	1 (1N	/13 /14	3603.60	0 10	NIA	N/A	0.00	000	VIN	NIA

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Summary of PSH Thickness & Gauging Menaurements Table 1

Cummulativo Rocovery (galloni) lelo I Total Volume Recovery Cummulative Recovery (gallons) Widter 8888 00.0 888888 338 8888 88888888 81 Waler Volumo Recovery (galtone) 88888 800 888 888 000 000 888 000 888 000 PSH Cummulative Recovery (guillens) 0.000 PSH Volumn Recovered (() Allens) ¥899999999 8888888 PSH THICKNESS (R) 000000 0.00 8888 88888 000 222 도 은 은 트 이 이 이 이 1 1 1 1 1 0.43 00.0 010 0.63 0.0 000 Conructed Relative Top Scoundwater Libor Scoundwater Libor Scoundwater 2003, 14 2003, 14 2003, 13 2003, 14 2003, 13 2003, 14 2003, 13 2003, 14 2003, 14 2003, 14 2003, 14 2003, 14 2003, 14 2002 1002 55 1002 55 1002 55 1002 44 1002 45 1002 19 1002 19 1002 19 1002 19 1002 08 11.815 12 11.815 12 11.815 12 11.815 12 11.815 12 11.815 12 11.815 13 11.815 37/13 29 37/13 25 37/13 25 37/13 27 37/13 27 37/13 27 37/13 27 37/13 27 37/13 27 Dopth to Water Below Top of Casing (Feet) /H /B <u>1999</u> 78.80 78.80 78.81 78.85 78.75 77.75 77.75 77.75 77.75 77.75 77.75 77.75 77.75 77.75 77.75 77.75 20.01 20.02 20.02 79-75 79-75 79-86 112 Depth to PSH Bolow Top of Casing (Fool) N.U. Relative Top of Cashng I lovation (Foot)* 3/11.94 3/11.1 407/12/10 40/10/10 40/10/10 40/10/10 40/10/10 40/1 400.700 11.02.400 11.02.400 11.02.400 11.000 10.0000 10.0000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.00000 10.0000 10.0000 10.00000 10.0000 10.0000 10.0000 1 06/24/05 06/24/05 06/30/05 DATE GAUGLD 04/11/0000 04/11/000 04/11/000 04/11/000 2714/05 2714/05 2727/05 2727/05 2727/05 90/11/1 90/11/1 72005 730005 730005 706005 01/2/005 1/069071 40/90/10 90/01/10 CONCOMO Philics Alf Armunan Physican, U. P. R⁺ Monee to Jul*0*2 - 2002;10273 MW-3 (con't) WELL ID MW-4

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Summary of PSH Thickness & Gauging Measurements

Cummulative Recovery (galions) 10131 ٩Ň V V V V V X X X X VNN VNN VNN ş Total Volume Recovery Cummilative Recovery (g:Mone) NKL11 NKL11 n 00 11:15 1 11111 MHL 11 HILLI HILLI HILLI W.Mor 220 000 000 000 1.1511 NRUT 0.00 20000 001 MAL-1 MAL-1 MAL-1 MAL-1 MRI-1 MAL-1 MAL-1 M41-1 1141-1 1141-1 HI. 1111 E MRL. I MRL. I MRL. I Volumb Volumb Racovery (guiltons) 0.00 0.000 0.000 0.00 8 8 8 8888 88888 0.00 00.00 0.0 8888 PSH Cummulative Recevery (gations) PSH Volume Recovered (gallone) PSH THICKNESS 20000 0100 0100 0000 88888 8888 0.00 888 0.0000 Ξ 9 Corrected Relative Top Groundwater Elevation (Feet)* Table 1 1602.01 3602.77 3602.77 3602.77 3602.77 3602.66 3602.66 3602.64 3602.64 3602.64 30/0/60 30/0/00 30/0/60 30/0/11 Depth to Water Below Top of Casing (Fent) 999 999 999 999 999 2222 80 14 80 16 80 21 2222 10 13 00.20 00.20 00.22 Depth to PSH Below Top of Casing (f cel) n' Z SSZZZ Relutive Top of Castrig Elovation (Foet)* 3772.00 3772.00 3772.00 21/2/1 3/72 86 3/72 86 3/72 86 3/77 86 3772-86 3772-86 3772-86 3772-86 3772 86 3772 86 3772 86 3772 86 3172 Rb 3172 Bb 3172 Bb 3772-106 37772-106 37772-106 37772-106 3772,86 3/77.06 3/72.06 37/72.06 31/72 Bb 31/77 Bb 31/77 Bb 4075 4075 3772 RG 3777 RG 3777 RG 1 ŝ 0872718 Зf; 823 1112 218 12 111 DATE GAUGED 166/2005 06/22005 07/2005 07/11005 07/11005 07/11005 07/21005 07/21005 07/21005 07/21005 07/21005 07/21005 07/21005 019/027/05 018/028/05 018/028/05 018/11/05 018/11/05 018/11/05 018/11/05 018/24/05 018/24/05 08/30/05 01/01/05 01/06/05 40/17/01 10/9/2/01 10/0/2/01 1104055 1110055 1100055 1100055 1100055 1100055 1100055 1100055 11000055 10 00/13/05 10/16/04 Plains All Amorican Pipolino, L. P. B. Moore to Jel #2 - 2002-10273 MW-4 (con't) WELL ID

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TALON 318 East Taylor Street, Hobbs, New Mexico 88240

Phone: 505/393-4261, FAX: 505/393-4658

Plains All American Pipeline, L.P. 8" Moore to Jal #2 - 2002-10273

Quarterly Summary of Hydrocarbon Recovery Table 2

	Monthly		
	Hydrocarbons	Monthly Water	Monthly Total
	Recovered	Recovered	Fluids Recovered
Date	(galtons)	(gallons)	(gallons)
January 2005	38	0	38
February 2005	37	0	37
March 2005	37	0	37
Quarterly Total	112	0	112
April 2005	8.0	0	8.0
May 2005	30.0	1.25	31.3
June 2005	68.00	2.25	70.3
Quarterly Total	106.0	3.5	109.5
Fotal Six Months	218	3.5	221.5
July 2005	83.00	1.75	84.8
August 2005	00.06	2.25	92.3
September 2005	88.00	2.25	90.3
Quarterly Total	261.00	6.3	267.3
October 2005	77.00	2.25	79.25
November 2005	72.00	2.50	74.50
December 2005	79.00	3.00	82.00
Quarterly Total	228.00	7.75	235.75
Fotal Six Months	489.00	14.00	503.00
Total FY 2005	707.00	17.50	724.50

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Phone: 505/393-4261, FAX: 505/393-4658

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Table 3

Plains All American Pipeline, LP. - 8" Moore #2 - Ref #2002-10273

Monitor Well	Date	Benzene	Tolucne	Ethylbenzene	m,p-Nylenes	o-Nylene	Total Xylenes	Chloride	Total Dissolved Solids	TPH (as Dicsel)	TPH (as Gasoline)	Total TPH
INTERNET		(mg/l.)	(.fl/gm)	(ng/L.)	(.1\c)m)	(.I\2m)	(.Il/gm)	(mg/L.)	(mg/L)	(.1/2(m)	(mg/L)	(mg/1.)
	18-Mar-05	Not Sampled di	ue to the Presen	ce of Phase Sep	arated Hydroc	carbons	A State of the	No. 1	State of the second	Carlo and	a course of	and the second
1.1111	14-Jun-05	Not Sampled di	ue to the Presen	ice of Phase Sep	arated Hydroc	carbons		LUK - MAG	Rent Show	「「「「「「「」」」	N. M. C. Martin	10 m
1-M IN:	30-Sep-05	Not Sampled d	ue to the Presen	ce of Phase Sep	arated Hydroc	carbons	No. of Lot of Lo		A CALLER OF	State - State	State of the state	and the second
	30-Dec-05	Not Sampled di	ue to the Presen	ice of Phase Sep	arated Hydrox	carbons	State Barn		The second	で、「いい」		
	18-Mar-05	0.0404	0.0251	0.0023	0.0051	0.0024	0.0074	NA	NA	NA	NA	NA
C MIN	14-Jun-05	0.0011	<.001	< 001	<,001	<.001	<,002	NA	NA	NA	NA	NA
T-M M	30-Sep-05	0.0428	0.0392	0.0056	0.0090	0.0037	0.0127	NA	NA	NA	NA	NA
	30-Dec-05	<0.001	<0.001	<0.001	<0.001	<0.001	<.002	NA	NA	NA	NA	NA
	18-Mar-05	1.2300	0.3380	0.0260	0.1190	0.1320	0.2510	NA	NA	NA	NA	NA
2 JULY	14-Jun-05	11.0000	2.3400	0.7920	1.1800	0.4700	1.6500	NA	NA	NA	NA	NA
E-MINI	30-Sep-05	Not Sampled di	ac to the Presen	ce of Phase Sep	arated Hydroc	carbons	Section 20	10 10 10 10 10 10 10 10 10 10 10 10 10 1	ALL HARAN	日の語		a distant
	30-Dec-05	Not Sampled di	ue to the Presen	ce of Phase Sep	arated Hydroc	carbons	Salar Salar	のないである	State State	San Chillin	Southern States	Di Di Lines
	18-Mar-05	5.2300	0.9890	0.2590	0.2640	0.2040	0.4680	NA	NA	NA	NA	NA
N 100 M	14-Jun-05	8.2900	0.8270	0.3080	0.2150	0.0989	0.3139	NA	NA	NA	NA	NA
6 M [N]	30-Sep-05	5,3600	0.1480	0.1530	<0.10	<0.10	<0.20	NA	NA	NA	NA	NA
	30-Dec-05	0.0045	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA	NA	NA
NAIOCD R	emedial Thresholds	0.01	0.75	0.75			0.62	0.25	-			1
0.1.1.1.1.1.	1	Color MA DAVIA B.	a limit Thank	Alle and When Can	almule for Ita	Walter Walter	lu					

Ked, polded withes dre in excess of the watch, i seconduction

If the cell is blank, then that parameter was not analyzed

* N.4 - Not Analyzed

Talourd.PE 310 Last Tained. 16005, New Kristo 10740 14nono 405,090, 4501, 1 AX: 509,4303 4650 TALON

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SUMMARY OF GROUNDWATER POLY-AROMATIC HYDROCARBONS (PAII) ANALATICAL RESULTS Table 4

Plaius All American Pipeline, I.P. - 8" Moore #2 - Ref #2002-10273

÷.						
Benzolg.h. perylene	(mp/1.)		0000		< (1 (HOH) +	
Dibenz[a,h]- unthracene	(mult)		· 0.0002		- 0 0002	
Indeno 1,2,4- cdl-pyrene	(much.)		1100.0.+		100.0+	
Benzalal- pyrene	ine la		·-0 0002		+ 0 (NO2	0.0017
Benzelj.kj- Buuranthene	(med.)		2000 O		- 0.0005	
llenzo(b)- fluoranthene	inci i	un	1100.0 -	6113	<0.0013	
(hywne	i beef()	ted Hydrocarbs	112	ied Hydrocarts	<0.000 · 0	ale on the same of
Benzo a]- authraceue	tore*1.3	of Phase Separa	1100.0	of Phase Separa	1100.0 -	
Pyrene	1001	o the Presence o	<000 a ·	o the Presence	<0.0005	
Fluendheac	ξωτ. ¹ .}	Vitalyzed due to	- 0.005	vudvred due ti	- 0,0005	
Anthracene	tu:11	Nut ,	<000 0 ·	. In Nut	- 0.0005	· · · · · ·
Phenanthread	Incel 1		50000		5080.0 •	
Flourence	tong-f 1		- 0:0005		<000.0~	1
Acenapticue	terri.		5000 ft •		-0.0005	
Accuaptly lead	1 [1201]		10000		0.0005	
Napthalene	(mr1)		\$000'0 -		6610.0	1110
Dute		20-126-05	30.15cc 05	40-Dec-05	0.0-0-04	edui The-Indd
Monitor Well	Las ation	NW-1	2.333	EWN	1	NAKA D Ren

APPENDICES

APPENDIX A

1st QUARTER GROUNDWATER LABORATORY ANALYTICAL RESULTS

AND

CHAIN-OF-CUSTODY FORMS

						3512	2 Montopolis	Drive, Aus	stin, TX	78744 &	
						2209 (512) N. Padre Isl) 385-5886	and Dr., (• FA)	Corpus Ch X (512) 3	nristi, TX 385-7411	78408
Client: Environmental Plus, Inc.						Report#/Lab ID#	t: 164959	Repor	t Date: 0	3/29/05	
Address: 2100 Ave. O						Sample Name: 200	2-10273 8"M#2031805]	MW2			
Eunice,	NM 88231					Sample Matrix:	water				
						Date Received:	03/22/2005	Time:	06:30		
Phone: (505) 394-3481 FAX: (505)	394-2601					Date Sampled:	03/18/2005	Time:	11:32		
REPORT OF ANALYSIS							QUALITY	ASSURAL	NCE DAT	[A 1	
Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	ł				03/23/05	8260b(5030/5035)		1		1	1
Benzene	40.4	µg/L	1	∀	03/23/05	8260b		2.4	93.5	91.9	90.4
Ethylbenzene	2.31	µg/L	1	7	03/23/05	8260b	1	ε	101.2	93	98.4
m,p-Xylenes	5.06	µg/L	7	4	03/23/05	8260b		2.5	96.5	90.6	95.1
o-Xylene	2.38	µg/L	1	7	03/23/05	8260b	1	2.8	108.1	100.3	103.5
Toluene	25.1	µg/L	1	4	03/23/05	8260b	-	1.9	7.66	103.3	98.7
This analytical report is respectfully submitted by Ana have been carefully reviewed and, to the best of my knn are consistent with AnalySys, Inc.'s Quality Assurance Copyright 2003, AnalySys, Inc., Austin, TX. All righ publication may be reproduced or transmitted in any fo express written consent of AnalySys, Inc.	ySys, Inc. The evolution of the analysis, the analy whedge, the analy Quality Control Vouting ts reserved. No time or by any met Respectfully S Respectfully S Dale Wagr	nclosed results vitical results Program. © part of this ans without the ubmitted,	1. Quali of the re recover express (RQL), typicall dilution associat recover than adv	ty assurance da lative percent (ed from a spike ed as the percer typically at or / denote USEP, s. 7. Data Que ed method blam ed method blam isory limit. M	ta is for the s; \Re) difference R sample. It (\Re) recover above the Pra above the Pra procedures. A procedures. A so an $J = k(s)$. S & S1 ory limit. S3 =Matrix inter	ample batch which includ between duplicate measu 4. Calibration Verificatio y of analyte from a knowi crical Quantitation Limit Less than ("<") values re analyte potentially prese =MS and/or MSD and PL ference.	led this sample. rements. 3. Reco n (CCV) and Lab a standard or mat (PQL) of the ana flect nominal qua nt between the PC rry exceed adviso. S recoveries exco	2. Precision overy (Recoronatory Com oratory Com cix. 5. Rep cix. 5. Rep cix. 5. Rep division lim futation li	n (PREC) is v.) is the per trol Sample orting Quan od. 6. Met uits adjusted MDL. B = Ai MDL. B = Ai MDL. B = Ai MDL. Cost dige	the absolut the absolut (LCS) resu (LCS) resu thod numbe for any req for any r	e value analyte dits are nits srs uired cted in (PDS) (gher

Page#: 1

Drive, Austin, TX 78744 & land Dr., Corpus Christi, TX 78408 • FAX (512) 385-7411	Report#/Lab ID#: 164959 Sample Matrix: water
3512 Montopolis 2209 N. Padre Isl (512) 385-5886	V2
	oject ID: 2002-10273 imple Name: 8"M#2031805MV
	S.
The section of the se	nt: Environmental Plus, Inc. 1: Iain Olness
U	Clie Attn

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REPORT OF SURROGATE RECOVERY				
Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	124	74-124	1
Toluene-d8	8260b	97.1	89-115	-

 Toluene-d8
 8260b

 Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

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					I		Mentenelis				
						2209 (512	Moncopous 1 N. Padre Isl) 385-5886	and Dr., C FAX	un, 1A orpus Ch ((512) 3	/0/44 & risti, TX 185-7411	78408
Client: Environmental Plus, Inc. Attn: Iain Olness						Report#/Lab ID# Project ID: 200	: 164960 2-10273	Report	Date: 0	3/29/05	
Address: 2100 Ave. O						Sample Name: 8	"M#2031805]	MW3			
Eunice,	NM 88231					Sample Matrix:	water				
						Date Received:	03/22/2005	Time: (06:30		_
Phone: (505) 394-3481 FAX: (505)	394-2601					Date Sampled:	03/18/2005	Time:	10:39		
REPORT OF ANALYSIS							OUALITY /	SSURAN	ICE DAT	<u>A</u> 1	
Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ² F	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	1				03/28/05	8260b(5030/5035)			1		
Benzene	1230	µg/L	10	<10	03/28/05	8260b	•	2.4	93.5	91.9	90.4
Ethylbenzene	20.6	µg/L	10	<10	03/28/05	8260b		ŝ	101.2	93	98.4
m,p-Xylenes	119	µg/L	20	Ş	03/28/05	8260b		2.5	96.5	90.6	95.1
o-Xylene	132	µg/L	10	<10	03/28/05	8260b	1	2.8	108.1	100.3	103.5
Toluene	338	μg/L	10	<10	03/28/05	8260b		1.9	99.7	103.3	98.7
This analytical report is respectfully submitted by Anal have been carefully reviewed and, to the best of my kno are consistent with AnalySys, Inc.'s Quality Assurance Copyright 2003, AnalySys, Inc., Austin, TX. All righ publication may be reproduced or transmitted in any foi express written consent of AnalySys, Inc.	NSys, Inc. The e wledge, the analy Quality Control S reserved. No J m or by any mea Respectfully S Respectfully S Dale Wagr	nclosed results rtical results Program. © part of this ms without the ubmitted,	1. Qualin of the re recovere expresse (RQL), typically dilutions associate recovery than adv	ty assurance da lative percent (ed from a spike ed as the percer typically at or denote USEP s. 7. Data Qu s. 7. Data Qu et method blar et et de dalar et et de dalar v exceeds advis risory limit. M	ata is for the s %) difference d sample. It (%) recover above the Prir above the	ample batch which includ between duplicate measuu 4. Calibration Verificatio. y of analyte from a known citical Quantitation Limit Less than ("<") values re analyte potentially presei =MS and/or MSD recove =MS and/or MSD and PD ference.	ed this sample. ements. 3. Reco n (CCV) and Lab n standard or matu (PQL) of the ana flect nominal qua it between the PC ry exceed advision S recoveries exco	2. Precision very (Recov oratory Contro ix. 5. Repo lytical metho lytical metho fl. and the M 2L and the M 2L and the M 2L and the M 2L and visory 1	(PREC) is 1) is the perr rol Sample rol Sample dant 6. Met adjusted 1. B =Aı Post dige: Post dige: limits. P =I	the absolute cent (%) of (LCS) resu titation Lim hod numbe for any requ for any requ for any requestion spike Precision hi	value analyte analyte its are its rs rs fpDS) gher

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Page#: 1

3512 Montopolis Drive, Austin, TX 78744 & 2209 N. Padre Island Dr., Corpus Christi, TX 78408 (512) 385-5886 • FAX (512) 385-7411 Report#/Lab ID#: 164960 Sample Matrix: water Sample Name: 8"M#2031805MW3 Project ID: 2002-10273 Environmental Plus, Inc. Iain Olness Client: Attn:

Recovery Limits Data Qualifiers ł ł 89-115 74-124 Recovery 116 106 Method 8260b 8260b REPORT OF SURROGATE RECOVERY Surrogate Compound 1,2-Dichloroethane-d4 Toluene-d8

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

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							3512 2209 (512)	Montopolis] N. Padre Isl 385-5886	Drive, Au and Dr., • FA	stin, TX Corpus Cl X (512)	78744 <i>8</i> hristi, TX 385-7411	r 78408
Client:	Environmental Plus, Inc.						Report#/Lab ID#	t: 164961	Repor	rt Date: (33/29/05	
Attn:	Iain Olness						Project ID: 200	2-10273	ſ			
Address	:: 2100 Ave. O						Sample Name: 8	3"M#2031805	MW4			
	Eunice,	NM 88231					Sample Matrix:	water				
							Date Received:	03/22/2005	Time:	06:30		
Phone:	(505) 394-3481 FAX: (505)	394-2601					Date Sampled:	03/18/2005	Time:	09:16		
REPOR'	T OF ANALYSIS							OUALITY	ASSURA	NCE DA'	<u>TA</u> 1]
Paramet	ter	Result	Units	RQL ⁵	Blank	Date	Method 6	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile (organics-8260b/BTEX	1		1		03/28/05	8260b(5030/5035)				1	-
Benzene		5230	µg/L	100	<100	03/28/05	8260b	:	2.4	93.5	91.9	90.4
Ethylben.	zene	259	µg/L	100	<100	03/28/05	· 8260b	1	ŝ	101.2	93	98.4
m,p-Xyle	thes	264	µg/L	200	∕200	03/28/05	8260b	1	2.5	96.5	90.6	95.1
o-Xylene		204	µg/L	100	<100	03/28/05	8260b	1	2.8	108.1	100.3	103.5
Toluene		989	µg/L	100	<100	03/28/05	8260b	1	1.9	69.7	103.3	98.7
This analy have been are consis Copyright publicatio express w	vitical report is respectfully submitted by Anal carefully reviewed and, to the best of my kno tent with AnalySys, Inc.'s Quality Assurance t 2003, AnalySys, Inc., Austin, TX. All right n may be reproduced or transmitted in any fou ritten consent of AnalySys, Inc.	ySys, Inc. The evolution of the analysis, Inc. The evolution of the analysis o	nclosed results vitical results Program. © part of this ans without the itbmitted, her	1. Quali of the re recover (RQL), typically dilution associat than add	ty assurance da lative percent (ed from a spike ed as the percer typically at or typically at	(%) difference (%) difference d sample. It (%) recover above the Pra above the Pra abo	ample batch which includ between duplicate measuu 4. Calibration Verification y of analyte from a knowr ctical Quantitation Limit Less than ("<") values re analyte potentially presen =MS and/or MSD recove =MS and/or MSD and PD ference.	ed this sample. tements. 3. Reconstruction of CCV) and Lab a standard or mata (PQL) of the ana flect nominal qua the tween the PC ry exceed adviso. S recoveries exco	2. Precision overy (Reco oratory Cor tix. 5. Rep ilytical meth mitiation lim ntitation lim L and the 1 L and the 1 L and the 1 Seed advisory	n (PREC) is w.) is the pe atrol Sample atrol Sample atrol Sample out. 6. Me mDL. B = A MDL. B = A 2 = Post digg	the absolut crent (%) of trent (%) of the function Lin antitation Lin any req for any req for any red for any red	e value analyte ils are nits srs cted in (PDS) igher

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Client: Attn:	Environmental Pl Iain Olness	lus, Inc.		Proje	ct ID: 20 ole Name:	02-10273 8"M#2031	805MW4		Re Sa	sport#/Lab mple Mat	ID#: 16- rix: water	1961

REPORT OF SURROGATE RECOVERY				
Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	102	74-124	-
Toluene-d8	8260b	109	89-115	1

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

AnalySys Inc. 4221 Freidrich Lane, Suite

Island Dr., Corpus Christi, TX 78408

2209 N. Padre I		
0, Austin, TX 78744	4766	
nne, Suite 19(4X: 512-447-4	

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	nental Plus,	SS	(1558	ew Mexico	3481 / 505-3	American	: #2	73	aonzales		ġ												13/12/10 5	111/15	Sample Yes
512-447-4766	Environn	lain Olne	P.O. BOX	Eunice N	505-394-	Plains All	8" Moore	2002-102	Manuel G		SAMPLEI	1#2031805MW2	1#2031805MW3	1#2031805MW4											
2-444-5896 FAX:	mpany Name	Project Manager	viling Address	ty, State, Zip	Phone#/Fax#	ient Company	cility Name	oject Reference	I Sampler Name		LAB I.D.	1649591 ^{8"M}	16496028"M	16496138"N	4	5	9	7	8	6	10		poter Relinguished:	inquished by:	ivered by:

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Chain of Custody Form

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APPENDIX B

2nd QUARTER GROUNDWATER LABORATORY ANALYTICAL RESULTS

AND

CHAIN-OF-CUSTODY FORMS

Analytical Report

Prepared for: Camille Reynolds

Plains All American EH & S 1301 S. County Road 1150 Midland, TX 79706-4476

Project: 8 inch Moore #2 Project Number: 2002-10273 Location: None Given

Lab Order Number: 5F14005

Report Date: 06/20/05

ſ	Plains All American EH & S	Project:	8 inch Moore #2	Fax: (432) 687-4914
	1301 S. County Road 1150	Project Number:	2002-10273	Reported:
	Midland TX, 79706-4476	Project Manager:	Camille Reynolds	06/20/05 13:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	5F14005-01	Water	06/14/05 14:20	06/14/05 16:27
MW-3	5F14005-02	Water	06/14/05 14:00	06/14/05 16:27
MW-4	5F14005-03	Water	06/14/05 13:40	06/14/05 16:27

Plains All American EH & S		F	roject: 8 i	nch Moore	#2			Fax: (432)) 687-4914
1301 S. County Road 1150		Project N	umber: 20	02-10273				Repo	orted:
Midland TX, 79706-4476		Project Ma	inager: Ca	mille Reyno	olds			06/20/0	5 13:44
,		Or	ganics b	y GC					
		Environn	nental L	ab of Te	exas				
Analute	Desult	Reporting	Unite	D'I d'a		Durand	• • • • •		
MW-2 (5E14005 01) Water			Omis	Dilution	Batch	Prepared	Analyzed		INOLE
WW-2 (5F 14005-01) Water									÷
Benzene	0.00109	0.00100	mg/L	1	EF51701	06/17/05	06/17/05	EPA 8021B	
Toluene	ND	0.00100			"	"	"		
Ethylbenzene	ND	0.00100		"	"	"	"	"	
Xylene (p/m)	ND	0.00100			"		"		
Xylene (6)	ND	0.00100							
Surrogate: a,a,a-Trifluorotoluene		112 %	80-1	120	11	"	"	n	
Surrogate: 4-Bromofluorobenzene		83.5 %	80-1	120	"	"	"	"	
MW-3 (5F14005-02) Water									
Benzene	11.0	0.0200	mg/L	20	EF51701	06/17/05	06/20/05	EPA 8021B	
Toluene	2.34	0.0200	u	"	"	"	н	н	
Ethylbenzene	0.792	0.0200	"	"	"	n	N	H	
Xylene (p/m)	1.18	0.0200	"	"	n	"	"	и	
Xylene (0)	0.471	0.0200	19	н	n 	11	**	"	
Surrogate: a,a,a-Trifluorotoluene		110 %	80-1	20	"	"	"	n	
Surrogate: 4-Bromofluorobenzene		93.0 %	80-1	20	n	"	"	"	
MW-4 (5F14005-03) Water									
Benzene	8.29	0.0200	mg/L	20	EF51701	06/17/05	06/20/05	EPA 8021B	
Toluene	0.827	0.0200	"	"	и	"	"	11	
Ethylbenzene	0.308	0.0200	"	н	и	н	n	11	
Xylene (p/m)	0.215	0.0200	n	"	"	н	"	n	
Xylene (o)	0.0989	0.0200	"	1 1		"	"	**	
Surrogate: a,a,a-Trifluorotoluene		118 %	80-1	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.5 %	80-1	20	"	"	"	17	

Plains All American EH & S		Pr	roject: 8 i	nch Moore #2	2				Fax: (432)	687-4914
1301 S. County Road 1150		Project Nu	mber: 20	02-10273					Repo	rted:
Midland TX, 79706-4476		Project Mar	nager: Ca	mille Reynol	ds				06/20/0	5 13:44
	O	rganics by	GC - Q	uality Co	ontrol					
		Environm	iental I	ab of Tex	kas					
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF51701 - EPA 5030C (GC)										
Blank (EF51701-BLK1)				Prepared &	Analyzed:	06/17/05				
Benzene	ND	0.00100	mg/L							
Foluene	ND	0.00100	u							
Ethylbenzene	ND	0.00100	u							
Xylene (p/m)	ND	0.00100	n							
Xylene (0)	ND	0.00100	u							
Surrogate: a,a,a-Trifluorotoluene	21.5		ug/l	20.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	16.4		"	20.0		82.0	80-120			
LCS (EF51701-BS1)				Prepared &	Analyzed:	06/17/05				
Benzene	98.2		ug/l	100		98.2	80-120			
Toluene	99.0		"	100		99.0	80-120			
Ethylbenzene	89.8		"	100		89.8	80-120			
Xylene (p/m)	177		"	200		88.5	80-120			
Xylene (o)	82.1		"	100		82.1	80-120			
Surrogate: a,a,a-Trifluorotoluene	18.2		"	20.0		91.0	80-120			
Surrogate: 4-Bromofluorobenzene	19.0		"	20.0		95.0	80-120			
LCS Dup (EF51701-BSD1)				Prepared &	Analyzed:	06/17/05				
Benzene	112		ug/l	100		112	80-120	13.1	20	
Foluene	113		"	100		113	80-120	13.2	20	
Ethylbenzene	103		"	100		103	80-120	13.7	20	
Xylene (p/m)	199		"	200		99.5	80-120	11.7	20	
Xylene (0)	94.3		ч	100		94.3	80-120	13.8	20	
Surrogate: a,a,a-Trifluorotoluene	20.1		<i>"</i>	20.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	17.2		11	20.0		86.0	80-120			
Calibration Check (EF51701-CCV1)				Prepared &	Analyzed:	06/17/05				
Benzene	112		ug/l	100		112	80-120			
Foluene	112		"	100		112	80-120			
Ethylbenzene	108			100		108	80-120			
Xylene (p/m)	201			200		100	80-120			
Xylene (0)	93.6			100		93.6	80-120			
Surrogate: a,a,a-Trifluorotoluene	20.7	·	"	20.0		104	80-120		<u> </u>	
Surrogate: 4-Bromofluorobenzene	21.1		"	20.0		106	80-120			

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 3 of 5
Plains All American EH & S	Project: 8 inch Moore #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10273	Reported:
Midland TX, 79706-4476	Project Manager: Camille Reynolds	06/20/05 13:44

Organics by GC - Quality Control

Environmental Lab of Texas

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EF51701 - EPA 5030C (GC)

Matrix Spike (EF51701-MS1)	Source: 51	Source: 5F17006-01			Prepared & Analyzed: 06/17/05			
Benzene	103	ug/l	100	ND	103	80-120		
Toluene	114	"	100	ND	114	80-120		
Ethylbenzene	105	n	100	ND	105	80-120		
Xylene (p/m)	203	"	200	ND	102	80-120		
Xylene (o)	91.9	"	100	ND	91.9	80-120		
Surrogate: a,a,a-Trifluorotoluene	20.6		20.0		103	80-120		
Surrogate: 4-Bromofluorobenzene	20.0	"	20.0		100	80-120		

Environmental Lab of Texas

Plains All American EH & S 1301 S. County Road 1150 Midland TX, 79706-4476		Project: Project Number: Project Manager:	8 inch Moore #2 2002-10273 Camille Reynolds	Fax: (432) 687-49 Reported: 06/20/05 13:44		
		Notes and De	finitions			
DET	Analyte DETECTED					
ND	Analyte NOT DETECTED at or above the reporting	limit				
NR	Not Reported					
dry	Sample results reported on a dry weight basis					
RPD	Relative Percent Difference					
LCS	Laboratory Control Spike					
MS	Matrix Spike					
Dup	Duplicate					

Report Approved By:

Raland K Jusits

6/20/2005

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer Jeanne Mc Murrey, Inorg. Tech Director LaTasha Cornish, Chemist Sandra Sanchez, Lab Tech.

Date:

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If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas



Jun. 14 2005 03:12PM P2

FAX NO. :915522180

* . ..

- FROM : LLAND PERMIAN ENVIRONMENTAL

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

	Client:	Lano-Permian
	Date/Time:	ulitos 16:27
	Order #:	5F1400
	Initials:	CK-

Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	<u>4.0</u> C
Shipping container/cooler in good condition?	1 CES	No	
Custody Seals intact on shipping container/cooler?	AB8	No	Not present
Custody Seals intact on sample bottles?	TES	No	Not present
Chain of custody present?	24000	No	
Sample Instructions complete on Chain of Custody?	Cress	No	
Chain of Custody signed when relinquished and received?	Des	No	
Chain of custody agrees with sample label(s)	ATES	No	
Container labels legible and intact?	Jes	No	
Sample Matrix and properties same as on chain of custody?	YES	No	
Samples in proper container/bottle?	(কিন্তু)	No	
Samples properly preserved?	(Xes)	No	
Sample bottles intact?	XED	No	
Preservations documented on Chain of Custody?	RES 1	No	
Containers documented on Chain of Custody?	(2453)	No	
Sufficient sample amount for indicated test?	12633	No	
All samples received within sufficient hold time?	(TE)	No	
VOC samples have zero headspace?	(Yes)	No	Not Applicable

Other observations:

Variance Documentation:

Contact Person: -____ Date/Time: _____ Contacted by: _____ Regarding:

Corrective Action Taken:

APPENDIX C

- - - --

3rd QUARTER GROUNDWATER LABORATORY ANALYTICAL RESULTS

AND

CHAIN-OF-CUSTODY FORMS



Analytical Report

Prepared for:

Camille Reynolds Plains All American EH & S 1301 S. County Road 1150 Midland, TX 79706-4476

Project: 8 inch Moore to Jal #2 Project Number: 2002-10273 Location: Lovington, NM

Lab Order Number: 5J03004

Report Date: 10/13/05

Plains All American EH	S Projec	t: 8 inch Moore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 11:	Project Number	r: 2002-10273	Reported:
Midland TX, 79706-4470	Project Manager	r: Camille Reynolds	10/13/05 11:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-02	5J03004-01	Water	09/30/05 15:20	09/30/05 17:20
MW-04	5J03004-02	Water	09/30/05 15:00	09/30/05 17:20

Plains All American EH & S	Project:	8 inch Moore to Jal #2
1301 S. County Road 1150	Project Number:	2002-10273
Midland TX, 79706-4476	Project Manager:	Camille Reynolds

Fax: (432) 687-4914

Reported: 10/13/05 11:10

Volatile Organic Compounds by EPA Method 8260B

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-02 (5J03004-01) Water									
Benzene	42.8	1.00	ug/l	1	EJ51204	10/11/05	10/11/05	EPA 8260B	
Toluene	39.2	1.00	"	и	"	"	и	"	
Ethylbenzene	5.61	1.00	н	н	"	"	н		
Xylene (p/m)	8.97	1.00	"	11	"	"	"		
Xylene (o)	3.68	1.00	n			v	"	"	
Surrogate: Dibromofluoromethane		102 %	68-1	29	"	"	"	"	•••
Surrogate: 1,2-Dichloroethane-d4		91.0 %	72-1	32	"	"	"	"	
Surrogate: Toluene-d8		94.6 %	74-1	18	"	"	n	"	
Surrogate: 4-Bromofluorobenzene		93.4 %	65-1	40	"	"	n	"	
MW-04 (5J03004-02) Water									
Benzene	5360	100	ug/l	100	EJ51204	10/11/05	10/12/05	EPA 8260B	
Toluene	148	100	n	"	"		"	н	
Ethylbenzene	153	100	"	"	"	n	n	n	
Xylene (p/m)	ND	100	11	"	"	"	н	n	
Xylene (o)	ND	100	11	*	и	"	n		
Surrogate: Dibromofluoromethane		110 %	68-1	29	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		96.2 %	72-1	32	"	"	"	"	
Surrogate: Toluene-d8		97.8 %	74-1	18	"	"	n	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	65-1	40	"	"	n	"	

Environmental Lab of Texas

Plains All American EH & S	Project: 8 inch Moore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10273	Reported:
Midland TX, 79706-4476	Project Manager: Camille Reynolds	10/13/05 11:10

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EJ51204 - EPA 5030C (GCMS)										
Blank (EJ51204-BLK1)				Prepared &	Analyzed:	10/11/05				
Benzene	ND	1.00	ug/l							
Toluene	ND	1.00	н							
Ethylbenzene	ND	1.00	**							
Xylene (p/m)	ND	1.00	н							
Xylene (o)	ND	1.00	н							
Surrogate: Dibromofluoromethane	52.1		<i>"</i>	50.0		104	68-129			
Surrogate: 1,2-Dichloroethane-d4	44.5		"	50.0		89.0	72-132			
Surrogate: Toluene-d8	45.3		n	50.0		90.6	74-118			
Surrogate: 4-Bromofluorobenzene	46.9		n	50.0		93.8	65-140			
LCS (EJ51204-BS1)				Prepared: 1	0/11/05 Ar	alyzed: 10	/12/05			
Benzene	48.6	1.00	ug/l	50.0		97.2	70-130			
Toluene	45.0	1.00	"	50.0		90.0	70-130			
Ethylbenzene	44.2	1.00	н	50.0		88.4	70-130			
Xylene (p/m)	72.6	1.00	n	100		72.6	70-130			
Xylene (0)	43.0	1.00	n	50.0		86.0	70-130			
Surrogate: Dibromofluoromethane	49.7		"	50.0		99.4	68-129			
Surrogate: 1,2-Dichloroethane-d4	47.7		"	50.0		95.4	72-132			
Surrogate: Toluene-d8	45.4		H	50.0		90.8	74-118			
Surrogate: 4-Bromofluorobenzene	44.8		"	50.0		89.6	65-140			
Calibration Check (EJ51204-CCV1)				Prepared &	Analyzed:	10/11/05				
Toluene	41.9		ug/1	50.0		83.8	70-130			
Ethylbenzene	39.4		"	50.0		78.8	70-130			
Surrogate: Dibromofluoromethane	52.2		"	50.0		104	68-129			
Surrogate: 1,2-Dichloroethane-d4	46.8		"	50.0		93.6	72-132			
Surrogate: Toluene-d8	47.4		"	50.0		94.8	74-118			
Surrogate: 4-Bromofluorobenzene	48.0		n	50.0		96.0	65-140			

Environmental Lab of Texas

.

Plains All American EH & S	Project: 8 inch Moore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10273	Reported:
Midland TX, 79706-4476	Project Manager: Camille Reynolds	10/13/05 11:10

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Environmental Lab of Texas

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EJ51204 - EPA 5030C (GCMS)

Matrix Spike (EJ51204-MS1)	Sourc	e: 5J10006-()1	Prepared &	& Analyzed:	10/11/05				
Benzene	47.3	1.00	ug/l	50.0	ND	94.6	70-130			
Toluene	44.8	1.00	11	50.0	ND	89.6	70-130			
Ethylbenzene	46.2	1.00	u	50.0	1.12	90.2	70-130			
Xylene (p/m)	75.8	1.00	н	100	ND	75.8	70-130			
Xylene (0)	41.8	1.00	"	50.0	0.600	82.4	70-130			
Surrogate: Dibromofluoromethane	46.8		"	50.0		93.6	68-129			
Surrogate: 1,2-Dichloroethane-d4	46.4		п	50.0		92.8	72-132			
Surrogate: Toluene-d8	46.9		"	50.0		93.8	74-118			
Surrogate: 4-Bromofluorobenzene	48.5		и	50.0		97.0	65-140			
Matrix Spike Dup (EJ51204-MSD1)	Sourc	e: 5J10006-0	1	Prepared &	Analyzed:	10/11/05				
Benzene	47.4	1.00	ug/l	50.0	ND	94.8	70-130	0.211	20	
Toluene	44.7	1.00	"	50.0	ND	89.4	70-130	0.223	20	
Ethylbenzene	46.0	1.00	"	50.0	1.12	89.8	70-130	0.434	20	
Xylene (p/m)	76.2	1.00	ч	100	ND	76.2	70-130	0.526	20	
Xylene (0)	42.5	1.00		50.0	0.600	83.8	70-130	1.66	20	
Surrogate: Dibromofluoromethane	46.9		"	50.0		93.8	68-129			
Surrogate: 1,2-Dichloroethane-d4	46.0		"	50.0		92.0	72-132			
Surrogate: Toluene-d8	45.8		"	50.0		91.6	74-118			
Surrogate: 4-Bromofluorobenzene	47.3		"	50.0		94.6	65-140			

Environmental Lab of Texas

Plains All American EH & S 1301 S. County Road 1150 Midland TX, 79706-4476		Project: Project Number: Project Manager:	8 inch Moore to Jal #2 2002-10273 Camille Reynolds	Fax: (432) 687-491 Reported: 10/13/05 11:10		
		Notes and De	finitions			
DET	Analyte DETECTED					
ND	Analyte NOT DETECTED at or above the reporting limi	L				
NR	Not Reported					
dry	Sample results reported on a dry weight basis					
RPD	Relative Percent Difference					
LCS	Laboratory Control Spike					
MS	Matrix Spike					
Dun	Duplicate					

Report Approved By:

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer Jeanne Mc Murrey, Inorg. Tech Director James L. Hawkins, Chemist/Geologist Sandra Sanchez, Lab Tech.

Date:

10/13/2005

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

Ciliz & Kune

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas



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

Client: Plains P/L				
Date/Time: 09-30-65 @1720				
Order #: 5303004				
Initials: JMM				
Sample Receip	t Checkli	st		
Temperature of container/cooler?	(Tes)	No	4,5 C]
Shipping container/cooler in good condition?	(Yes)	No		
Custody Seals intact on shipping container/cooler?	Yes	No	Atol present	Hand delive
Custody Seals intact on sample bottles?	Yes	No	Not present	by sample
Chain of custody present?	(Yes)	No		
Sample Instructions complete on Chain of Custody?	(YES)	No		
Chain of Custody signed when relinquished and received?	(Mes)	No		
Chain of custody agrees with sample label(s)	(Yes)	No		
Container labels legible and intact?	(Ces)	No	**************************************	
Sample Matrix and properties same as on chain of custody?	Yes	No		
Samples in proper container/pottle?	Ves	No		
Samples properly preserved?	Tres	No		
Sample bottles intact?	Ves	No	·····	
Preservations documented on Chain of Custody?	(Yes)	No		
Containers documented on Chain of Custody?	(Yee)	No	······	
Sufficient sample amount for indicated test?	Yes	No		
All samples received within sufficient hold time?	(Yes)	No		
VOC samples have zero headspace?	(Yes)	No	Not Applicable	}
* Client used custody seals for labels	<u>\$</u>			
Contact Person: Date/Time: Regarding:	mentatio	n:	Contacted by: _	
			۵٬۵۵۵ که بازی از دور بر دور بر دور بر دور بر دور بر دور بر در دور بر در بر در در بر در بر بر بر در در در بر در بر بر بر بر بر بر بر بر از در بر از د در بر در بر بر در بر در بر در بر در بر بر بر بر بر بر بر از در بر	۵٬۰۰۰ کې د دې د د د د د د د د د د د د د د د د
Corrective Action Taken:				

				میرد به ماند که این می شود به میرد بین میرد بین به در مراجع میرد این میرد این میرد بین میروی میرو بین میرو بین میرو این میرو این میرو این میرو این میرو این می
and the second			* :	

Hand delivercol present by sampler

APPENDIX D

4th QUARTER GROUNDWATER LABORATORY ANALYTICAL RESULTS

AND

CHAIN-OF-CUSTODY FORMS



Analytical Report

<u>Prepared for:</u> Camille Reynolds

Plains All American EH & S 1301 S. County Road 1150 Midland, TX 79706-4476

Project: 8 inch Moore to Jal #2 Project Number: 2002-10273 Location: None Given

Lab Order Number: 5L30007

Report Date: 01/10/06

Plains All American EH & S	Project: 8 inch Moore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10273	Reported:
Midland TX, 79706-4476	Project Manager: Camille Reynolds	01/10/06 17:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-02	5L30007-01	Water	12/30/05 11:55	12/30/05 15:16
MW-04	5L30007-02	Water	12/30/05 11:25	12/30/05 15:16
NW	5L30007-03	Soil	12/30/05 11:05	12/30/05 15:16
SW	5L30007-04	Soil	12/30/05 11:03	12/30/05 15:16
NE	5L30007-05	Soil	12/30/05 11:07	12/30/05 15:16
SE	5L30007-06	Soil	12/30/05 11:00	12/30/05 15:16

Plains All American EH & S			Project: 8 in	ich Moore	to Jal #2			Fax: (432)	687-4914
1301 S. County Road 1150		Project 1	Number: 200	2-10273				Repor	ted:
Midland TX, 79706-4476		Project M	lanager: Car	mille Reynd	olds			01/10/06	5 17:09
		0	rganics b	y GC					
		Environ	mental L	ab of Te	exas				_
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-02 (5L30007-01) Water									
Benzene	ND	0.00100	mg/L	1	EA60408	01/04/06	01/09/06	EPA 8021B	
Toluene	J [0.000447]	0.00100		"		н	н		
Ethylbenzene	ND	0.00100	н	"	14	"		*	
Xylene (p/m)	ND	0.00100	н	u	u	n	н	11	
Xylene (o)	J [0.000252]	0.00100	н	н		n	"	11	
Surrogate: a,a,a-Trifluorotoluene		95.5 %	80-1	20	п	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	80-1	20	"	"	"	"	
MW-04 (5L30007-02) Water									
Benzene	4.49	0.0500	mg/L	50	EA60408	01/04/06	01/09/06	EPA 8021B	-
Toluene	J [0.0255]	0.0500	n	н	۳	"	"	n	
Ethylbenzene	J [0.0199]	0.0500	11	н	"	n	n	*1	
Xylene (p/m)	J [0.0274]	0.0500	11	**	"	Ħ	"	"	
Xylene (o)	ND	0.0500	"	"	"	11	n 	17	
Surrogate: a,a,a-Trifluorotoluene		105 %	80-1.	20	"	n	n	"	
Surrogate: 4-Bromofluorobenzene		92.8 %	80-1.	20	"	"	n	"	
NW (5L30007-03) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL53011	12/30/05	12/31/05	EPA 8015M	
Diesel Range Organics >C12-C35	186	10.0	"	"	н	n	н	"	
Total Hydrocarbon C6-C35	186	10.0		H	"	H	n 	н	
Surrogate: 1-Chlorooctane		104 %	70-1.	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		106 %	70-1	30	"	"	"	"	
SW (5L30007-04) Soil							**		
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL53011	12/30/05	12/31/05	EPA 8015M	
Diesel Range Organics >C12-C35	146	10.0	"	"	"	u	и	H	
Total Hydrocarbon C6-C35	146	10.0	H	"	"	11	"	**	
Surrogate: 1-Chlorooctane		110 %	70-1.	30	"	#	"	"	
Surragate: 1-Chlorooctadecane		112 %	70-1.	30	"	"	"	"	

Plains All American EH & S	Project:	8 inch Moore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number:	2002-10273	Reported:
Midland TX, 79706-4476	Project Manager:	Camille Reynolds	01/10/06 17:09

Organics by GC

Environmental Lab of Texas

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
NE (5L30007-05) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL53011	12/30/05	12/31/05	EPA 8015M	
Diesel Range Organics >C12-C35	103	10.0	**	*		н	**	н	
Total Hydrocarbon C6-C35	103	10.0	"	"	"	u	н		
Surrogate: 1-Chlorooctane		103 %	70-1	30	"	n	"	"	
Surrogate: 1-Chlorooctadecane		104 %	70-1	30	"	Ħ	"	n	
SE (5L30007-06) Soil									

Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	I	EL53011	12/30/05	12/31/05	EPA 8015M	
Diesel Range Organics >C12-C35	167	10.0		н	"	"	и		
Total Hydrocarbon C6-C35	167	10.0		н	"	"	n	u	
Surrogate: 1-Chlorooctane		107 %	70-130	0	"	u	"	"	
Surrogate: 1-Chlorooctadecane		110 %	70-130	0	"	n	"	"	

Environmental Lab of Texas

1301 S. County Road 1150	Project Number: 2002-10273	Reported:
Midland TX, 79706-4476	Project Manager: Camille Reynolds	01/10/06 17:09
Plains All American EH & S	Project: 8 inch Moore to Jal #2	Fax: (432) 687-4914

		Lab of Te	exas						
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NW (5L30007-03) Soil									
% Moisture	8.7	0.1	%	1	EA60310	12/30/05	01/03/06	% calculation	
SW (5L30007-04) Soil	· · · ·								
% Moisture	8.0	0.1	%	1	EA60310	12/30/05	01/03/06	% calculation	
NE (5L30007-05) Soil									
% Moisture	6.3	0.1	%	1	EA60310	12/30/05	01/03/06	% calculation	
SE (5L30007-06) Soil						_			
% Moisture	4.0	0.1	%	i	EA60310	12/30/05	01/03/06	% calculation	

Plains All American EH & S	Projec	: 8 inch Moore to Jal #2	Fax: (432) 687-4914	
1301 S. County Road 1150	Project Number	: 2002-10273	Reported:	
Midland TX, 79706-4476	Project Manager	: Camille Reynolds	01/10/06 17:09	

PAH compounds by Semivolatile GCMS

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-02 (5L30007-01) Water									
Naphthalene	ND	5.00	ug/l	1	EA60904	01/05/06	01/05/06	8270C	
Acenaphthylene	ND	5.00	"	н	u	W	*	**	
Acenaphthene	ND	5.00	u	н	"	u	"		
Fluorene	ND	5.00	"	"	"	и	11	**	
Phenanthrene	ND	5.00	н		11	'n	**	u	
Anthracene	ND	5.00	н	"	и	Ħ	u	"	
Fluoranthene	ND	5.00	"	u	"	W	u	"	
Pyrene	ND	5.00	"	"	н	"	н	н	
Benzo (a) anthracene	ND	1.30	"	"	н			"	
Chrysene	ND	5.00	11	"	н		11	"	
Indeno (1,2,3-cd) pyrene	ND	1.30	u	"	"	н	Ħ	W	
Benzo (b) fluoranthene	ND	1.30	"	"	*	"	۳	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	н	W	
Benzo (a) pyrene	ND	0.200		11	"	"	u	w	
Dibenzo (a,h) anthracene	ND	0.200	"	*1	"	H	u	n	
Benzo (g,h,i) perylene	ND	5.00	"	**			"	n	
Surrogate: Nitrobenzene-d5		44.4 %	35-1	14	·		"	n	•··· ••••• ••••••••••••••••••••••••••••
Surrogate: 2-Fluorobiphenyl		53.0 %	43-1	16	"	"	"	"	
Surrogate: p-Terphenyl-d14		55.6 %	33-1	41	"	11	"	n	
MW-04 (5L30007-02) Water									
Naphthalene	19.9	5.00	ug/l	1	EA60904	01/05/06	01/05/06	8270C	
Acenaphthylene	ND	5.00			"	H	и	и	
Acenaphthene	ND	5.00	н	м	"	ч	н	н	
Fluorene	J [0.600]	5.00	"	"		n	н	**	J
Phenanthrene	J [0.400]	5.00	"	"	н	n	"	**	J
Anthracene	ND	5.00	"	"		н	и	"	
Fluoranthene	ND	5.00	"	"	11	и	W	н	
Pyrene	ND	5.00	"	ч	"	"	'n	**	
Benzo (a) anthracene	ND	1.30	"	н	n	u	"	10	
Chrysene	ND	5.00	"		"	н	'n		
Indeno (1,2,3-cd) pyrene	ND	1.30	н	н	u	м	"	"	
Benzo (b) fluoranthene	ND	1.30	"	н	н	u	n	n	
Benzo (k) fluoranthene	ND	5.00	"	"	н	u	н	и	
Benzo (a) pyrene	ND	0.200	11		н	"	"	и	
Dibenzo (a,h) anthracene	ND	0.200	и	u	н	u	"	11	
Benzo (g,h,i) perylene	ND	5.00	18	u 	11	11	"	II	
Surrogate: Nitrobenzene-d5		50.2 %	35-1	14	"	"	"	"	

Environmental Lab of Texas

Plains All American EH & S		Project:	Fax: (432) 687-4				
1301 S. County Road 1150			Reported	ed:			
Midland TX, 79706-4476			01/10/06 17:0				
	PAH co	mpounds by	y Semivolatile C	GCMS			
	Ε	nvironment	al Lab of Texas				

MW-04 (5L30007-02) Water						
Surrogate: 2-Fluorobiphenyl	60.2 %	43-116	EA60904	01/05/06	01/05/06	8270C
Surrogate: p-Terphenyl-d14	61.5 %	33-141	"	n	n	"

Plains All American EH & S		P	roject: 8	inch Moore to	Jal #2				Fax: (432)	687-4914
1301 S. County Road 1150		Project Nu	mber: 20	002-10273					Repo	orted:
Midland TX, 79706-4476		Project Ma	nager: Ca	amille Reynol	ds				01/10/0	6 17:09
	0	rganics by	GC - (Quality Co	ontrol					
		Environm	iental l	Lab of Tex	ras					
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA60408 - EPA 5030C (GC)										
Blank (EA60408-BLK1)				Prepared: 0	01/04/06 A	nalyzed: 01	/09/06			
Benzene	ND	0.00100	mg/L							
Tolucne	ND	0.00100	u							
Ethylbenzene	ND	0.00100	н							
Xylene (p/m)	ND	0.00100	и							
Xylene (0)	ND	0.00100	n							
Surrogate: a,a,a-Trifluorotoluene	34.9		ug/l	40.0		87.2	80-120			
Surrogate: 4-Bromofluorobenzene	36.2		"	40.0		90.5	80-120			
LCS (EA60408-BS1)				Prepared: 0	1/04/06 Ai	nalyzed: 01	/09/06			
Benzene	0.0528	0.00100	mg/L	0.0500		106	80-120			
Toluene	0.0586	0.00100	н	0.0500		117	80-120			
Ethylbenzene	0.0586	0.00100	n	0.0500		117	80-120			
Xylene (p/m)	0.119	0.00100		0.100		119	80-120			
Xylene (0)	0.0591	0.00100	**	0.0500		118	80-120			
Surrogate: a,a,a-Trifluorotoluene	41.3		ug/l	40.0		103	80-120			
Surrogate: 4-Bromofluorobenzene	38.0		"	40.0		95.0	80-120			
Calibration Check (EA60408-CCV1)				Prepared: 0	1/04/06 A1	nalyzed: 01	/09/06			
Benzene	54.1		ug/l	50.0		108	80-120			
Toluene	59.8			50.0		120	80-120			
Ethylbenzene	59.5		н	50.0		119	80-120			
Xylene (p/m)	120			100		120	80-120			
Xylene (0)	57.0		**	50.0		114	80-120			
Surrogate: a,a,a-Trifluorotoluene	40.2		"	40.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	36.6		"	40.0		91.5	80-120			
Matrix Spike (EA60408-MS1)	Sou	rce: 6A05002-	01	Prepared: 0	1/04/06 At	nalyzed: 01	/09/06			
Benzene	0.0516	0.00100	mg/L	0.0500	ND	103	80-120			
Toluene	0.0572	0.00100	"	0.0500	ND	114	80-120			
Ethylbenzene	0.0587	0.00100		0.0500	ND	117	80-120			
Xylene (p/m)	0.119	0.00100		0.100	ND	119	80-120			
Xylene (o)	0.0588	0.00100	н	0.0500	ND	118	80-120			
Surrogate: a,a,a-Trifluorotoluene	39.9		ug/l	40.0		99.8	80-120			-
Surrogate: 4-Bromofluorobenzene	41.4		"	40.0		104	80-120			

Plains All American EH & S		1	Project: 8 in	nch Moore to	Jal #2				Fax: (432)) 687-4914
1301 S. County Road 1150		Project N	umber: 200	02-10273					Repo	rted:
Midland TX, 79706-4476		Project M	anager: Ca	mille Reynol	ds				01/10/0	6 17:09
				mality C	tual				******	
	U.	Environi	y GC - Q mental L	ab of Tex	xas					
Analyte	Result	Reporting	Units	Spike	Source	%REC	%REC	RPD	RPD Limit	Notes
Potch EA60408 - EBA 5020C (CC)										
Matrix Snike Dun (FA 60408-MSD1)	Sou	rce. 640500		Prenared: (01/04/06 A	nalvzed: 01	/09/06			
Benzene	0.0525	0.00100	mg/L	0.0500	ND	105	80-120	1.92	20	
Toluene	0.0575	0.00100	G	0.0500	ND	115	80-120	0.873	20	
Ethylbenzene	0.0573	0.00100	н	0.0500	ND	115	80-120	1.72	20	
Xvlene (p/m)	0.119	0.00100		0.100	ND	119	80-120	0.00	20	
Xylene (o)	0.0590	0.00100	н	0.0500	ND	118	80-120	0.00	20	
Surrogate: a.a.a-Trifluorotoluene	39.6		ug/l	40.0		99.0	80-120		······································	
Surrogate: 4-Bromofluorohenzene	36.8		"	40.0		92.0	80-120			
Blank (EL53011-BLK1)				Prepared: 1	2/30/05 A	nalyzed: 12	/31/05			
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	'n							
Total Hydrocarbon C6-C35	ND	10.0	11							
Surrogate: 1-Chlorooctane	50.7		mg/kg	50.0		101	70-130			
Surrogate: 1-Chlorooctadecane	50.9		"	50.0		102	70-130			
LCS (EL53011-BS1)				Prepared: 1	2/30/05 A	nalyzed: 12	/31/05			
Gasoline Range Organics C6-C12	456	10.0	mg/kg wet	500		91.2	75-125			
Diesel Range Organics >C12-C35	528	10.0	16	500		106	75-125			
Total Hydrocarbon C6-C35	984	10.0	**	1000		98.4	75-125			
Surrogate: 1-Chlorooctane	58.8		mg/kg	50.0		118	70-130			
Surrogate: 1-Chlorooctadecane	54.4		"	50.0		109	70-130			
Calibration Check (EL53011-CCV1)				Prepared: 1	2/30/05 A	nalyzed: 12	/31/05			
Gasoline Range Organics C6-C12	502		mg/kg	500		100	80-120			
Diesel Range Organics >C12-C35	533			500		107	80-120			
Fotal Hydrocarbon C6-C35	1040		*	1000		104	80-120			
Surrogate: 1-Chlorooctane	55.2		"	50.0		110	70-130			
Surrogate: 1-Chlorooctadecane	54.0		n	50.0		108	70-130			

Plains All American EH & S	Project: 8 inch Moore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10273	Reported:
Midland TX, 79706-4476	Project Manager: Camille Reynolds	01/10/06 17:09

Organics by GC - Quality Control

Environmental Lab of Texas

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EL53011 - Solvent Extraction (GC)

Matrix Spike (EL53011-MS1)	Sourc	e: 5L30007	7-03	Prepared: 1	2/30/05 A	nalyzed: 1	2/31/05			
Gasoline Range Organics C6-C12	512	10.0	mg/kg dry	548	ND	93.4	75-125			
Diesel Range Organics >C12-C35	718	10.0	н	548	186	97.1	75-125			
Total Hydrocarbon C6-C35	1230	10.0	н	1100	186	94.9	75-125			
Surrogate: 1-Chlorooctane	57.7		mg/kg	50.0		115	70-130			
Surrogate: 1-Chlorooctadecane	53.4		"	50.0		107	70-130			
Matrix Spike Dup (EL53011-MSD1)	Sourc	e: 5L30007	-03	Prepared: 1	2/30/05 A	nalyzed: 1	2/31/05			
Gasoline Range Organics C6-C12	503	10.0	mg/kg dry	548	ND	91.8	75-125	1.77	20	
Diesel Range Organics >C12-C35	721	10.0	ч	548	186	97.6	75-125	0.417	20	
Total Hydrocarbon C6-C35	1220	10.0	и	1100	186	94.0	75-125	0.816	20	
Surrogate: 1-Chlorooctane	56.7		mg/kg	50.0		113	70-130			
Surrogate: 1-Chlorooctadecane	52.8		"	50.0		106	70-130			

Environmental Lab of Texas

	Plains All American EH & S	Project: 8 inch Moore to Jal #2	Fax: (432) 687-4914
Į	1301 S. County Road 1150	Project Number: 2002-10273	Reported:
1	Midland TX, 79706-4476	Project Manager: Camille Reynolds	01/10/06 17:09

General Chemistry Parameters by EPA / Standard Methods - Quality Control

		Environme	ntal l	Lab of Tex	as					
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EA60310 - General Preparation (Prep)										
Blank (EA60310-BLK1)				Prepared: 1	2/30/05	Analyzed: 01	/03/06			
% Solids	100		%							
Duplicate (EA60310-DUP1)	Sou	rce: 5L30001-01	l	Prepared: 12	2/30/05	Analyzed: 01	/03/06			
% Solids	92.4		%		91.7			0.760	20	
Duplicate (EA60310-DUP2)	Sou	irce: 5L30007-03	6	Prepared: 12	2/30/05	Analyzed: 01	/03/06			
% Solids	92.0		%		91.3			0.764	20	

Environmental Lab of Texas

Plains All American EH & S	Project:	8 inch Moore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number:	2002-10273	Reported:
Midland TX, 79706-4476	Project Manager:	Camille Reynolds	01/10/06 17:09

PAH compounds by Semivolatile GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA60904 - EPA 3510C										
Blank (EA60904-BLK1)				Prepared &	Analyzed:	01/05/06				
Naphthalene	ND	5.00	ug/l				·····			
Acenaphthylene	ND	5.00	'n							
Acenaphthene	ND	5.00	Ħ							
Fluorenc	ND	5.00	"							
Phenanthrene	ND	5.00	н							
Anthracene	ND	5.00	"							
Fluoranthene	ND	5.00	н							
Pyrene	ND	5.00	**							
Benzo (a) anthracene	ND	1.30	**							
Chrysene	ND	5.00	"							
Indeno (1,2,3-cd) pyrene	ND	1.30	"							
Benzo (b) fluoranthene	ND	1.30	н							
Benzo (k) fluoranthene	ND	5.00	н							
Benzo (a) pyrene	ND	0.200	н							
Dibenzo (a,h) anthracene	ND	0.200								
Benzo (g,h,i) perylene	ND	5.00								
Surrogate: Nitrobenzene-d5	39.1			80.0		48.9	35-114			<u> </u>
Surrogate: 2-Fluorobiphenvl	39.0		"	80.0		48.8	43-116			
Surrogate: p-Terphenyl-d14	57.4		"	80.0		71.8	33-141			
I CS (EA 60004-BS1)				Prenared &	Analyzed	01/05/06				
Nanhthalene	A2 5	5.00		100	. Analyzed.	42.5	21-133		• •••••	
Agenophthylene	42.5	5.00	ug/1	100		44.0	33-145			
Anthroppin	44.0	5.00		100		49.6	27 122			
Fluorenthene	43.0	5.00	н	100		45.0	26-137			
Purena	43.2	5.00		100		54.6	20-1J7 52-115			
Penzo (a) anthracene	51.3	1 30	н	100		513	33-143			
	51.5	5.00	н	100		51.5	17 169			
Indene (1,2,3,ed) nyrana	37.0	1 20	н	100		37.0	5 171			
Banzo (h) fluoranthene	د. <i>ا</i> د ۲ د ا	1.50		100		57.5	24-150			
Benzo (b) fluoranthene	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	5.00		100		23.0 49 7	11-142			
	40.1 10 C	0.00	н	100		40.7	17 142			
Denzo (a) pyrene	48.0	0.200	и	100		40.0 50 4	5 227			
$B_{100} = 120 (a,h)$ and $a_{10} = 100 (a,h)$	20.4 39 6	0.200 5.00		100		39.6	5-227			
							3-217			
Surrogate: Nitrobenzene-as	42.3			80.0		52.9	30-114			
Surrogate: 2-Fluorobiphenyl	45.4			80.0		26.8	43-116			
Surrogate: p-Terphenyl-d14	57.2		"	80.0		71.5	33-141			

Environmental Lab of Texas

Plains All American EH & S	Project: 8 inch Moore to Jal #2	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10273	Reported:
Midland TX, 79706-4476	Project Manager: Camille Reynolds	01/10/06 17:09

PAH compounds by Semivolatile GCMS - Quality Control

Environmental	Lab	of]	Fexas
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			Reporting		Spike	Source		%REC		RPD	
I	Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EA60904 - EPA 3510C

LCS Dup (EA60904-BSD1)			Prepared & Analyzed: 01/05/06							
Naphthalene	42.6	5.00	ug/l	100	42.6	21-133	0.235	30.1		
Acenaphthylene	44.0	5.00	"	100	44.0	33-145	0.00	40.2		
Phenanthrene	53.1	5.00		100	53.1	54-120	0.377	20.6		
Anthracene	48.5	5.00		100	48.5	27-133	0.206	32		
Fluoranthene	44.8	5.00	*	100	44.8	26-137	0.889	32.8		
Pyrene	55.6	5.00	**	100	55.6	52-115	1.81	25.2		
Benzo (a) anthracene	51.1	1.30	"	100	51.1	33-143	0.391	27.6		
Chrysene	51.1	5.00	u	100	51.1	17-168	0.974	48.3		
Indeno (1,2,3-cd) pyrene	36.2	1.30	н	100	36.2	5-171	2.99	44.6		
Benzo (b) fluoranthene	48.2	1.30	н	100	48.2	24-159	14.6	38.8		
Benzo (k) fluoranthene	57.3	5.00		100	57.3	11-162	16.2	32.3		
Benzo (a) pyrene	48.7	0.200	"	100	48.7	17-163	0.206	39		
Dibenzo (a,h) anthracene	48.7	0.200	"	100	48.7	5-227	3.43	70		
Benzo (g,h,i) perylene	39.3	5.00	и	100	39.3	5-219	0.760	58.9		
Surrogate: Nitrobenzene-d5	42.2	·	"	80.0	52.8	35-114				
Surrogate: 2-Fluorobiphenyl	45.2		"	80.0	56.5	43-116				
Surrogate: p-Terphenyl-d14	57.9		"	80.0	72.4	33-141				
Calibration Check (EA60904-CCV1)				Prepared: 01/05/	06 Analyzed: 01	/06/06				
Acenaphthene	48.1		ug/l	50.0	96.2	70-130			_	
Fluoranthene	46.8		н	50.0	93.6	70-130				
Benzo (a) pyrene	47.5		н	50.0	95.0	70-130				

Benzo (a) pyrene	47.5		50.0	95.0	/0-130	
Surrogate: Nitrobenzene-d5	68.3		80.0	85.4	35-114	
Surrogate: 2-Fluorobiphenyl	67.0	"	80.0	83.8	43-116	
Surrogate: p-Terphenyl-d14	50.3	n	80.0	62.9	33-141	

Environmental Lab of Texas

Plains All 1301 S. C Midland 1	l American EH & S County Road 1150 FX, 79706-4476	Project: Project Number: Project Manager:	Fax: (432) 687-4914 Reported: 01/10/06 17:09		
		Notes and Def	finitions		
J	Detected but below the Reporting I	Limit; therefore, result is an estimated	concentration (CLP J-Flag).		
DET	Analyte DETECTED				
ND	Analyte NOT DETECTED at or above	the reporting limit			
NR	Not Reported				
dry	Sample results reported on a dry weigh	t basis			
RPD	Relative Percent Difference				
LCS	Laboratory Control Spike				
MS	Matrix Spike				
Dup	Duplicate				

Report Approved By:

Raland K Julits Date:

1/10/2006

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer Jeanne Mc Murrey, Inorg. Tech Director LaTasha Cornish, Chemist Sandra Sanchez, Lab Tech.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas



-2

ironmental Lab of Texas F Variance / Corrective Action Report – Sample Log-In

Client:	Plains	
Date/Time:	12/30/05	3:20
Order #:	5L300017	
Initials:	CK	

Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	5.5 C
Shipping container/cooler in good condition?	(TES	No	
Custody Seals intact on shipping container/cooler?	Yes	No	Not present
Custody Seals intact on sample bottles?	1 CB	No	Not present
Chain of custody present?	Tes	No	
Sample Instructions complete on Chain of Custody?	1 des	No	
Chain of Custody signed when relinquished and received?	VE8	No	
Chain of custody agrees with sample label(s)	Es	No	
Container labels legible and intact?	(es	No	
Sample Matrix and properties same as on chain of custody?	Yes	No	
Samples in proper container/bottle?	1 Yes	No	•
Samples properly preserved?	Ceş	No	
Sample bottles intact?	Yes	No	
Preservations documented on Chain of Custody?	Yes	No	
Containers documented on Chain of Custody?	Yes	No	
Sufficient sample amount for indicated test?	YES	No	
All samples received within sufficient hold time?	C	No	
VOC samples have zero headspace?	1 Xes	No	Not Applicable

.

Other observations:

Variance Documentation:

.

 Variance Documentation:

 Contact Person: -_____ Date/Time: ______ Contacted by: ______
Regarding: _____ _____ Corrective Action Taken: · _____

APPENDIX E

SOIL BORING LOGS

AND

WELL CONSTRUCTION DIAGRAMS

						Log	Of Test Borings (NOTE - Page 1 o
(Project Number: Plains All American Pipeline — 2002—10273
		L NVIR STATE	ONMEN	TAL P_1	LUS, IN ARM AND	IC.	Project Name: 8—Inch Moore to Jal #2
		E		NTAL SERV	ICES		Location: UL—J of Section 16, Township 17 South, Range 37 East
			505-	-394-3461			Boring Number: MW-1 Surface Elevation: 3,763.01'
a# ne#	e a	20	e	sb	<u>ې ۵</u>		Start Date: 07/27/04 Time: 0900
d Ti	Type	cove	istur	PID	S.C.	epth feet	Completion Date: 07/27/04 Time: 1550
ang	S	ar. Bri	Ň	Å,			Description
						\vdash	
						\vdash	
						<u> </u>	CALICHE, White to Tan, Soft to Indurated
						F	
						_	
						<u> </u>	
	· · · · · · · · · · · · · · · · · · ·		· · · ·			<u> </u> 1	
0910	SS	12	Dry	906	-	F	Hydrocarbon odor
						↓ 1	5
0911	Cuttings	NA	Dry	592	-	—	Hydrocarbon odor
						┢	
						\vdash	
						F,	
0917	22	24	Damo	721			Hydrocarbon odor
			bump	, 2,			
						F	
						<u> </u>	
						<u></u> 2	5
0918	Cuttings	NA	Damp	427	SP	<u> </u>	with some trace SILT, CLAY and PEBBLES
							Hydrocarbon odor
						<u> </u>	0
0928	SS	24	Damp	733	SP	F	Hydrocarbon odor
		*					
						 -	
			1			\vdash	

						Log	Of Test Borings (NOTE - Page 2 of
		_		_			Project Number: Plains All American Pipeline - 2002-10273
				ITAL P	LUS, IN	IC.	Project Name: 8—Inch Moore to Jal #2
		E	NURONME	NTAL SERV	ICES		Location: UL-J of Section 16, Township 17 South, Range 37 East
]		505	-394-3481			Boring Number: MW-1 Surface Elevation: 3,763.01'
a#⊭ T	e	2	Ð	sb	ഗ്ര		Start Date: 07/27/04 Time: 0900
d Tir		cove	istur	PID	S.C.	epth feet)	Completion Date: 07/27/04 Time: 1550
u n N N N N N	۰. م	a, j	Ŷ	Å,	30		Description
0929	Cuttings	NA	Dry	386	SP	\vdash	Hydrocarbon odor
						+	
						F	· · · · · · · · · · · · · · · · · · ·
							10
0037	22	24	Dry	588	۹D		
0307	33	27	019		51	<u> </u>	Hydrocarbon odor
						<u> </u>	
						<u> </u>	
0938	Cuttings	NA	Dry	301	SP	\vdash	Hydrocarbon odor
						<u>ا</u>	50
0949	SS	24	Dry	431	SP		Hydrocarbon odor -
						-	-
						-	· · · ·
						5	5
1002	Cuttings	N۵	Dry	599	SP		
	Cuttings			555		<u> </u>	Hydrocarbon odor
						 	
							-
						e 6	°
1012	SS	24	Dry	660	SP		Hydrocarbon odor
						L	
						L 6	5 .
1019	Cuttings	NA	Dry	799	SP	F	Hydrocarbon odor
						 	-
						-	
						- ,	-
							·

						Log	g Of Test Borings (NOTE - Page 3	of			
							Project Number: Plains All American Pipeline - 2002-10273				
				TAL P	LUS, N	C.	Project Name: 8—Inch Moore to Jal #2				
ENVIRONMENTAL SERVICES EUNICE, NM							Location: UL-J of Section 16, Township 17 South, Range 37 East				
]		505	-394-3481			Boring Number: MW-1 Surface Elevation: 3,763.01'				
#∎ ₽	<u> </u>	ر سرح	e	sb	o io		Start Date: 07/27/04 Time: 0900				
iii pie	dubi	cove	oistur	PID PDm Ppm	.S.C.)epth feet	Completion Date: <u>07/27/04</u> Time: <u>1550</u>				
о п С		Å.	ž	ă -	,		Description				
1033	ss	24	Damp	390	SP		Hydrocarbon odor				
			ļ	ļ		7	_ 75	-			
1037 (Cuttings	NA	Damp	566	SP		Hydrocarbon odor				
								-			
							7	-			
						- -X	80	•			
10:55	SS	24	Damp	11.2	SP		Hydrocarbon odor	-			
		21					nyarocarbon dabi	-			
								-			
							25	-			
							End of Boring at 83'				
						_		-			
					•			-			
								-			
						9	_ 90	-			
						_		-			
								-			
								-			
						9	_ 95	-			
								-			
								-			
								-			
						1(_100	-			
						_		-			
	Wat	er Leve	l el Measu	urements	s (feet)						
Date	Tim	e So D	epth	Casing Depth	Cave—ir Depth	י W L	Water Level Deal of the transformed and the tr				
07/27/0	04 -		-	_	-		Backfill Method: MW-2 Installed				



						Log	Of Test Borings (NOTE - Page 1 o	f				
							Project Number: Plains All American Pipeline — 2002—10273					
				ITAL P	LUS, N	IC.	Project Name: 8—Inch Moore to Jal #2					
		E	NURONME	NTAL SERV	ICES		Location: UL—J of Section 16, Township 17 South, Range 37 East					
			505	-394-3481		Γ	Boring Number: MW-2 Surface Elevation: 3,768.10'					
u# ⊓	e	25	ø	s	(i) To		Start Date: 10/25/04 Time: 0830					
d Tir	Type	ches	istur	PID ppm m	S S S	epth feet)	Completion Date: <u>10/25/04</u> Time: <u>1300</u>					
Sar anc	ഗ്	, n č	Moi	Re. L	<u>, v</u> ,		Description					
-						<u> </u>	0.5' Sandy Topsoil					
						-						
						<u> </u>	CALICHE, White to Tan, Soft to Indurated					
						5						
						_						
					·	10	0					
						-						
0921	cs	36	Dry	23.8	-	 						
						15	5					
						<u> </u>						
0028	6	48	Dev	58.8	_	 						
0920	03			50.0		<u> </u>						
						- 20	0					
0931	cs	60	Dry	20.6	-	<u> </u>						
						 						
						2:	5 Tan to Red Prown Soft Fine to Medium Crained Stall					
						<u> </u>	with some trace SILT, CLAY and PEBBLES					
0938	cs	60	Dry	26.3	SP							
						Ľ						
						30	0					
						<u> </u>						
0046	00	40	Devi	57.0	50	—						
0946	LS	40	Ury	55.8	57	<u> </u>						
							5					
				1 1		<u>ب</u> ا						
		<u>_</u>				Log	Of Test Borings (NOTE - Page 2					
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	——–––––––––––––––––––––––––––––––––––––	E	<u></u>				Project Number: Plains All American Pipeline - 2002-10273					
		E NVIR STATE	ONMEN	D LAND F	LUS, IN ARM AND	IC.	Project Name: 8—Inch Moore to Jal #2					
		E	INVIRONMEI EUI	NTAL SERV NICE, NM 394-3481	ICES		Location: UL-J of Section 16, Township 17 South, Range 37 East					
[<u> </u>	ſ			-334-3407			Boring Number: MW-2 Surface Elevation: 3,768.10'					
Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>10/25/04</u> Time: <u>0830</u> Completion Date: <u>10/25/04</u> Time: <u>1300</u> Description					
						\vdash	Calipho Ergamonto Procent					
0954	CS	53	Dry	102	SP	<u> </u>						
						 						
						'						
1005	CS	60	Damp	40.3	SP							
						·	-5					
1010	cs	55	Damp	109	SP							
		[_ :	50					
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1018	cs	48	Damp	114	SP	—						
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1027	CS	48	Damp	102	SP							
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1048	CS	60	vamp	98.3	54	<u> </u>						
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						Log C	f Test Borings	(NOTE - Page 3 of
		-		-		F	Project Number: Plains All America	on Pipeline - 2002-10273
				ITAL P	LUS, N ARM AND	IC. F	roject Name: 8—Inch Moore to Ja	I #2
		E	NVIRONM	ENTAL SERV JNICE, NM	ICES	L	ocation: UL-J of Section 16, Town	nship 17 South, Range 37 East
			. 50	5 394 3481		E	oring Number: MW-2	Surface Elevation: 3,768.10'
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10/25/0	4 –		epth —	Depth 	Depth —		Backfill Method: MW-2 Inst	talled
10/29/0	4 -				_	76.	57 Field Representative: JR	



						Log	Of Test Borings (NOTE - Page 1 of
	·						Project Number: Plains All American Pipeline - 2002-10273
				ITAL P	LUS,	۹C. [Project Name: 8—Inch Moore to Jal #2
		E		INTAL SERV	ICES	ſ	Location: UL-J of Section 16, Township 17 South, Range 37 East
			505	-394-3481		F	Boring Number: MW-3 Surface Elevation: 3,769.15'
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n Tin Tin	Type	ches,	stur	PID	S.C.S	epth eet)	Completion Date: <u>10/26/04</u> Time: <u>1500</u>
ang	ຜ.	, ing Bring	Moi	Re (Ω. Ω	0.E	Description
						<u> </u>	0.5' Sandy Topsoil
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1040	cs	36	Drv	23.2	_	\vdash	
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1053	cs	60	Dry	50.1	-		
						2	5
						<u> </u>	Tan to Red Brown, Soft, Fine to Medium—Grained SAND with some trace SILT. CLAY and PERRIES
1104	<u> </u>	40	D	30.0	60	┣-	
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						Log	Of Test Borings	(NOTE - Page 2 of
							Project Number: Plains All America	an Pipeline - 2002-10273
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		E		NTAL SERV	ICES		Location: UL-J of Section 16, Tow	nship 17 South, Range 37 East
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	-					Log ()f Test Borings	(NOTE - Page 3 of 3
							Project Number: Plains All American	Pipeline - 2002-10273
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		STATE	E APPRON	/ED LAND F/ ENTAL SERV	ARM AND		ocation: UL—J of Section 16, Townsh	nip 17 South, Range 37 East
			50	5-394-3481		E	Boring Number: MW-3 SL	urface Elevation: 3,769.15'
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Date	wa	ier Leve	<u>ы меаз</u> Imple	Casing	Cave-i	n Wal	er Drilling Method: Air Rotary 10.25	," OD
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10/29/0	4 –		-			78.	18 Field Representative: JR	



						Log	Of Test Borings (NOTE - Page 1 of
							Project Number: Plains All American Pipeline — 2002—10273
		ENVIR	ONMEN	ITAL P	LUS, IN	vc.	Project Name: 8—Inch Moore to Jal #2
		E	NVIRONME EL	ED LAND F ENTAL SERV JNICE, NM	ACES		Location: UL-J of Section 16, Township 17 South, Range 37 East
			505	-3943481			Boring Number: MW-4 Surface Elevation: 3,770.00'
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nple Tin	Type	ches	stur	Did Did Did Did	S.C.	epth eet)	Completion Date: <u>10/26/04</u> Time: <u>0955</u>
Sar	Ϋ́.	Ű, R	Ň	Re	<u> </u>		Description
						<u> </u>	0.5' Sandy Topsoil
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	r					\vdash	CALICHE, White to Tan, Soft to Indurated
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			_			Log(Of Test Borings (NOTE - Page 2 of 3
ſ		—		D.			Project Number: Plains All American Pipeline — 2002—10273
		E NVIR STATE	ONMEN	TAL PI	LUS, IN RM AND	1C.	Project Name: 8—Inch Moore to Jal #2
		E	INVIRONME EU 505	NTAL SERVI NICE, NM - 394-3481	CES	L	Location: UL—J of Section 16, Township 17 South, Range 37 East
L						[E	Boring Number: MW-4 Surface Elevation: 3,770.00'
a"≋ a	e e	s) c	2	sb	S. D		Start Date: <u>10/25/04</u> Time: <u>1400</u>
E P	Type Type	eco v	oistu	PID eadir (ppn	J.S.C Symt	Dept (feet	Completion Date: <u>10/26/04</u> Time: <u>0955</u>
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					Lo	og O	f Test Borings	(NOTE — Page 3 of 3
						Р	roject Number: Plains All American Pi	peline - 2002-10273
		Envif	RONMEN	ITAL P	LUS, INC.	PI	oject Name: 8—Inch Moore to Jal #2	<u></u>
		SIAI	E APPROV ENVIRONMI	ENTAL SERV	ARM AND ACES	Lo	ocation: UL—J of Section 16, Township	17 South, Range 37 East
L			50	53943481		В	oring Number: MW-4 Surf	ace Elevation: 3,770.00'
a≉≉ e	۵	2		s	10-2		Start Date: 10/25/04 Time: 14	100
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0/26/0	4 _	3	epth -	Depth —	Depth —	Leve	Backfill Method: MW-4 Installed	l
0/29/0	4 -					79.2	2 Field Representative: JR	



APPENDIX D

INFORMATIONAL COPIES OF

SITE INFORMATION AND METRICS FORM

AND

INITIAL C-141

			LAR (OCD)	· /* 1
FOTT av	T. C	Incident Date:	NMOCD Not	
EUTI Site	Information and Metrics	10-22-02 @ 5:00 Pm	10-23-02 (d)	100 AM
STIE: 8 MO	OTE to Jal #2	Assigned SI	te Kelefence #, _20	02-10273
Company: E				
Street Address	SOS Test History	2	······································	
Mailing Addre	SS: 5805 East Highway 80	J		
City, State, Zi	p: Midland, Texas 7970.	2		
Representative	3: Frank Hernandez	~~		
Representative	3 Telephone: 915.638.37	99		
Telephone:	1 1011 > 20111	D	1411. 0111	
Fluid volume	released (DDIS): 25 DDIS	NMOCD verbally within 24 hrs an	d submit form C.141 will	S thin 15 days
	Ai	so applies to unauthorized releases	>500 mcf Natural Gas)	ann 15 tays.
	5-25 bbls: Submit form C-14	1 within 15 days (Also applies t' u	mauthorized releases of	50-500 mcf Natural Gas)
Leak, Spill, or	Pit (LSP) Name: 8" Mod	ore to Jal #2		
Source of cont	tamination: 8" Steel Pipelin	ne		
Land Owner, i	.e., BLM. ST, Fee, Other: S	State of New Mexico		
LSP Dimensic	ons ~160' x 40'			
LSP Area:	5,794 sqft ft ²			
Location of Re	eference Point (RP)	······		
Location dista	nce and direction from RP			
Latitude: 3	12 49' 56.61"N			
Longitude: 1	03 15' 08.47"W			
Elevation abov	ve mean sea level:			
Feet from Sou	th Section Line			
Feet from Wes	st Section Line			
Location- Unit	t or $\frac{1}{4}$: NW ¹ / ₄ of the SE ¹	4 Unit Lette	er: J	
Location-Sect	tion: 16			
Location-Tow	vnship: T17S			
Location-Ran	ge: R37E		····	
	1 1 11 1000 1			
Surface water	body within 1000 radius of	of site: none		
Surface water	body within 1000 radius of	ol site:		
Domestic wate	sr wells within 1000 radius	s of site: none		
Domestic wate	sr wells within 1000 radius	s of site:		
Agricultural w	ater wells within 1000 rad	ius of site: none		
Agricultural w	ater wells within 1000 rad	dus of site:		
Public water s	upply wells within 1000 Ha	dius of site: none		
Public water s	upply wells within 1000 ha	$\frac{10103}{100}$ $\frac{1000}{100}$		
Depth from la	nd surface to ground water	(DG) ~00 bgs	· · · · · · · · · · · · · · · · · · ·	
Depth to grow	$\frac{1}{2} \frac{1}{2} \frac{1}$			
	id water (DG - DC - DIGV	V) = 0	ation Anon	1 Distance to Surface Water Dedu
I. L	V <50 fast: 20 points	2. Weinlead Protect	ction Area	5. Distance to Surface Water Body
If Depth to GV	$\sqrt{-50}$ to 00 fast: 10 points	private domestic water source	$r_{c,01}$, ~ 200 from $r_{c,01}$	200 100 horizontal feat: 10 points
	v 50 to 99 teet. To points	If \$1000° from motor accura	200, 20 points	200-100 nonzontan teet. TV pour
If Depth to GV	V >100 feet: 0 points	n -1000 Hom water source	ree: 0 nointe	>1000 horizontal feet: 0 points
Ground water	$S_{CDP2} = 20$	Wallhoad Drotaction Area	$\frac{100.0 \text{ points}}{\text{Score}=0}$	Surface Water Score - A
Site David Waler	$\frac{20}{2+3} = 20$	menneua r rolection Area		Surjuce mater score - 0
ыне <i>капк</i> (1+2	$\frac{2+3}{2} = \frac{20}{2}$	to Doulting Group and A	mtable Conserver	tions
Dorometor		w Kanking Score and Acce	o Concentrat	
Pangona ¹	10	10-1	7	10
DCHIZCHC		10 pp	<u>20</u>	10 ppm
BTEVI		· · · ·		
BTEX ^I	50 ppm	20 pp		5000 ppm

Sectenergy

District I 1625 N. French	Dr., Hobbs, NI	M 88240	1	Stat Energy Min	te of Ne erals and	w Mexi I Natural	co Resources			Form C-14 Revised October 10, 200
1301 W. Grand <u>District III</u> 1000 Rio Brazos <u>District IV</u> 1220 S. St. France	Avenue, Artesi Road, Aztec, cis Dr., Santa I	ia, NM 88210 NM 87410 Fe, NM 87505		Oil Co 1220 Sar	onservat South St nta Fe. N	tion Div t. Franci JM 875	ision s Dr. 05		Submit : Distric	2 Copies to appropriat of Office in accordanc with Rule 116 on bac side of form
		R	lelease	Notifica	tion a	nd Coi	rective /	Action		
C		00		1.0011100				nitial Danam	• 🗖 v:	ol Domont
Name of Con EOTT	npany:				<u></u>	Contac Frank I	et: Hernandez		<u>, []</u> F11.	
Address: PO Box 1660) 5805 East	Highway 80 N	/lidland, '	Texas 79702		Teleph 915.63	one No.: 8.3799	· · · · · · · · · · · · · · · · · · ·		
Facility Nam 8" Moore to .	ne: Jal #2					Facilit 8" Stee	y Type: l Pipeline			
Surface Own State of New	ner: Mexico			Mine	eral Own	er:			Lease 1	No.:
				LOCAT	TION O	FREL	EASE			
U nit Letter J	Section 16	Township T17S	Range R37E	Feet from the	North/Se	outh Line	Feet from the	East/West Line	Count Lat. 3 Lon. 1	7: Lea 2 49' 56.61"N 03 15' 08.47"W
	-	_i	.	NATI	IRE OF	RELE	ASE	-		
Type of Relea	se					Volume of	Release		Volume Re	covered els
Source of Rela 8" Steel Pipelin	ease 1e					Date and I EOTT	Hour of Occu	rrence	Date and H 10-22-02 @	our of Discovery 7:00 PM
Was Immedia	te Notice Gi	ven? 🛛 Yes	5 🗌 No	🗌 Not Req	uired	If YES, To Larry John	o Whom? Ison			
By Whom? Pat McCasland	LEPI					Date and 1 10-23-02 (d	H our Ø 7:00 AM			
Was a Waterc	ourse Reach	ned? 🗌 Yes	🛛 No			IF YES, VO NA	plume Impact	ting the Wate	ercourse:	
lf a Watercou Describe Cau	rse was Imp se of Problem	acted, Describ n and Remedia	e Fully:* d Action	NA Taken:*8" Ste	el Pipeline	e. Site will	be delineated	to determine	the vertical ar	id horizontal extents
Describe Area contamination. BTEX, i.e., the	Affected an Contaminat mass sum of	nated soil will b id Cleanup Act ted soil will be b f Benzene, Ethy	tion Take blended or Benzene	on site or disp n :*5,794 sqft - site or dispos , Toluene, and	-160' x 40' ed of. Ren Xylenes =	Site will b nedial Goal = 50 mg/Kg	be delineated to ls: TPH 8015n g.	o determine ti n = 100 mg/K	he vertical and g, Benzene =	horizontal extents of 10 mg/Kg, and
I hereby certify regulations all public health o should their op health or the er	v that the info operators are r the environ erations have wironment.	primation given a required to rep- ment. The acce e failed to adequ In addition, NM	above is tru- ort and/or ptance of lately inve IOCD acco	ue and comple file certain rel a C-141 report stigate and rer eptance of a C	te to the b ease notifi t by the NI nediate co -141 repor	est of my k cations and MOCD ma ntaminatio t does not	nowledge and perform con rked as "Final n that pose a t relieve the ope	l understand t rective actions Report" does hreat to grour erator of respo	hat pursuant to s for releases v not relieve th id water, surfa onsibility for c	o NMOCD rules and which may endanger e operator of liability ce water, human ompliance with any
Signature:	iaie, 01 100al	iaws anu/or reg	ulations.				OIL CO	NSERVA	TION DI	VISION
Printed Name	: Frank Herr	nandez				Арргоу	ed by District	t Supervisor:		
Title: District	Environmen	tal Supervisor				Approv	al Date:		Expiration	Date:
						1				

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NEW MEXICO ENERGY, MICERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON Governor Joanna Prukop Cabinet Secretary Mark E. Fesmire, P.E. Director Oil Conservation Division

October 16, 2005

Ms. Camille Reynolds Plains All American Pipeline, L.P. 3112 West U.S. Highway 82 Lovington, NM 88260

Re: Soil Remediation Work Plan
 Plains Pipeline, L.P. 8" Moore to Jal #2 Site (Ref. # 2002-10273)
 Located in the NW/4 SE/4 of Section 16, Township 17 South, Range 37 East
 Lea County, New Mexico
 NMOCD Ref. 1R-0381

Dear Ms. Reynolds:

The New Mexico Oil Conservation Division (NMOCD) has received and reviewed the work plan (plan) shown above submitted, on behalf of Plains All American Pipeline, L.P. (Plains), by Llano-Permian Environmental dated June 24, 2005. The work plan is approved with the following understandings and conditions:

- 1. The descriptions of activities contained in the section of the plan entitled "Sampling Activities" are acceptable to the NMOCD. All sample analyses results will be submitted to the NMOCD in a future report prior to backfilling activities.
- 2. Also included in this future report will be sampling results for the stockpiled soils that are to be used as backfill as well as the results from the modeling proposed in the section of the plan entitled "Modeling Activities".
- 3. Activities described in the section of the plan entitled "Restoration Activities" will be expanded upon in a future report.
- 4. Aeration of the stockpiled soils will continue in the interim.

If you have any questions, contact me at (505) 476-3492 or ed.martin@state.nm.us

NEW MEXICO OIL CONSERVATION DIVISION

Ed Martin

Edwin E. Martin Environmental Bureau

Cc: Larry Johnson, NMOCD, Hobbs



AMARILLO, TX 921 North Bivins

Amarillo, TX 79107 806-467-0607 FAX: 806-467-0622

AUSTIN, TX

13009 Dessau Road Suite A Austin, TX 78754 512-989-3428 FAX: 512-989-3487

MIDLAND, TX #9 East Industrial Loop Midland, TX 79701 432-522-2133

FAX: 432-522-2180

NEW BRAUNFELS, TX

707 N. Walnut Ave., Suite 208 New Braunfels, TX 78130 210-579-0235 FAX: 210-568-2191

TULSA, OK

1439 East 41st Street Tulsa, OK 74105 918-742-0871 FAX: 918-742-0876

HOBBS, NM

318 East Taylor Street Hobbs, NM 88240 505-393-4261 FAX: 505-393-4658

<u>Environment di</u> <u>Chemists</u> <u>Chemists</u> Corrective devia <u>Project Acaders</u> <u>Engineers</u> <u>Geologists</u> <u>Scientists</u> Toll Free: 866-742-0742 www.llano-permian.com June 24, 2005

Mr. Edwin E. Martin New Mexico Oil Conservation Division Environmental Bureau 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Re: Soil Remediation Work Plan Plains Pipeline, L.P.
8" Moore to Jal #2 (Rcf #2002-10273) NW/4 of the SE/4 of Section 16, Township 17 South, Range 37 East Lea County, New Mexico NMOCD Ref. 1R-0381

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Mr. Martin:

The 8" Moore to Jal #2 release site is located approximately 9.5 miles southeast of Lovington in Lea County, New Mexico, at an elevation of approximately 3,770 feet above mean sea level. The release occurred on property owned by the State of New Mexico and is utilized as pasture land. The site is located in a rural area within the West Lovington Oil Field, with no residences or surface water within a 1,000-foot radius of the facility.

In October 2002, a release of approximately 25 barrels of crude oil, of which there was no recovery, occurred at the site due to corrosion (internal and/or external) of the pipeline. Approximately 6,000 square feet (ft^2) of surface area was impacted by the release. Surficial soil saturated by the release was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm for treatment.

The details of the soil remediation and sampling activities are described in the attached Soil Remediation Work Plan. If you have any questions feel free to contact me at (505) 441-4835 or by E-mail at lsanchez@llano-permian.com. Thank you very much.

LLANO-PERMIAN ENVIRONMENTAL

Louis B. Sanchez Project Manager

Cc: Camille Reynolds, Plains All American Pipeline, L.P. Jeff Dann, Plains All American Pipeline, L.P.



AMARILLO, TX

921 North Bivins Amarillo, TX 79107 806-467-0607 FAX: 806-467-0622

<u>AUSTIN, TX</u> 13009 Dessau Road Suite A Austin, TX 78754 512-989-3428 FAX: 512-989-3487

MIDLAND, TX #9 East Industrial Loop Midland, TX 79701 432-522-2133 FAX: 432-522-2180

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707 N. Walnut Ave., Suite 208 New Braunfels, TX 78130 210-579-0235 FAX: 210-568-2191

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<u>3. viro, n. 2016)</u> <u>Biologists</u> <u>Chamists</u> Corrective Actics <u>Project Mancesss</u> <u>Bugineers</u> <u>Geologists</u> <u>Scientists</u>

Toll Free: 866-742-0742

www.llano-permian.com

8" Moore to Jal #2 Soil Remediation Work Plan

Plains Ref: 2002-10273 NW¼ of the SE¼ of Section 16, Township 17 South, Range 37 East Lea County, New Mexico

~9.5 Miles Southeast (136°) of Lovington, Lea County, New Mexico Latitude: N32° 49' 56.6" Longitude: W103° 15' 8.31"

June 2005

Prepared For:



ATT ANE READ FIPELINE LE 333 Clay Street, Suite 600 Houston, TX 77002

Prepared By: Llano-Permian Environmental 318 East Taylor Street Hobbs, New Mexico 88240 **Distribution** List

1

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Company or Agency	NMOCD	NMOCD	Plains All American Pipeline	Plains All American Pipeline	Plains All American Pipeline	LPE
Title	Environmental Engineer	Environmental Engineer	Remediation Coordinator	Senior Environmental Specialist	Environmental Specialist	
Name	Ed Martin	Larry Johnson	Camille Reynolds	Jeff Dann	Daniel Bryant	File

NMOCD - New Mexico Oil Conservation Division LPE – Llano-Permian Environmental

SOILS REMEDIATION WORK PLAN

Introduction

The 8" Moore to Jal #2 release site is located approximately 9.5 miles southeast of Lovington in Lea County, New Mexico, at an elevation of approximately 3,770 feet above mean sea level. The release occurred on property owned by the State of New Mexico and is utilized as pasture land. The site is located in a rural area within the West Lovington Oil Field, with no residences or surface water within a 1,000-foot radius of the facility (Figure 1).

In October 2002, a release of approximately 25 barrels of crude oil, of which there was no recovery, occurred at the site due to corrosion (internal and/or external) of the pipeline. Approximately 6,000 square feet (ft^2) of surface area was impacted by the release. Surficial soil saturated by the release was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm for treatment.

In an effort to delineate the extent of impacted soil remaining at the site, delineation activities were performed by Environmental Plus, Inc. (EPI) at the site to depths ranging from 20 to 40 feet below ground surface (bgs) in November 2002. Only field analysis was performed on the soil delineation samples collected at discreet intervals. The field analysis indicated organic vapor concentrations exceeded 100 parts per million (ppm) to a depth of 40 feet bgs.

EPI commenced excavation activities at the site in June 2003 in order to remove soil impacted above the New Mexico Oil Conservation Division (NMOCD) remedial thresholds. Approximately 1,220 cubic yards of soil were excavated and run through a shaker to separate the rock from the soil. After the soil and rock had been separated, the soil (approximately 575 cubic yards) was spread out into two land treatment areas and the rock was stockpiled on site.

Upon the completion of site excavation activities in June 2003, composite samples were collected by EPI from the north, south and east sidewalls, as well as the floor of the excavation. Laboratory analysis of the samples confirmed all analytes were below the NMOCD remedial thresholds with the exception of Total Petroleum Hydrocarbons (TPH) in the north sidewall sample which was only slightly above the 100 mg/kg threshold (195 mg/kg – SW-846 Method 8015). In June 2005, two (2) confirmation grab samples were collected by Llano-Permian Environmental (LPE) from the west sidewall of the excavation. Laboratory analysis of these samples confirmed all analytes were below NMOCD remedial thresholds (Table 2).

EPI installed two (2) monitor wells in July of 2004, and three (3) monitoring wells in October of 2004 (Figure 2). Soil samples were collected from MW-1, 2, 3 and 4 at various horizons during the boring process of the well installation. No soil samples were collected during the boring of MW-1A due to its close proximity to MW-1. The majority of the samples collected exceeded the NMOCD thresholds for the various analytes. Field analysis of soil samples collected at discreet intervals indicated organic vapor concentrations exceeded 100 parts per million (ppm) at least to a depth of 77 feet bgs in soil boring MW-1 (Table 1).

As a result of the presence of phase separated hydrocarbons (PSH) in MW-1, EPI performed PSH recovery activities from October of 2004 to April of 2005. In May of 2005, Llano-Permian Environmental (LPE) took over the PSH recovery activities. In an effort to accelerate the PSH recovery at the 8" Moore to Jal #2 site, LPE began bi-weekly PSH recovery upon commencement of the PSH recovery activities in May. Approximately fifteen (15) gallons of PSH has been recovered on a weekly basis since the middle of May 2005.

EPI sampled the land treatment areas on December 15, 2004, in conjunction with the weekly site visit. Sampling results indicated contaminant levels in the land treatment area soils were above the NMOCD remedial thresholds in two (2) of the four (4) quadrants in the land treatment area (Table 3). The land treatment areas have been turned to aerate the soils and accelerate the TPH degradation since the last sampling event and will continue until the implementation of the restoration activities that are generally described in this work plan in the "Restoration Activities" section. Additional sampling of the land treatment areas is slated for late June of 2005.

Excavation Activities

Due to the evidence of the composite and grab confirmation sampling in the excavation (Table 2), the north sidewall of the excavation will be cut back an additional one foot (1') (Figure 4). At that point a photo ionization detector (PID) will be used to determine if any portion of the north sidewall has remaining contaminated soil that should be excavated. If and when areas of concern are identified with the PID, they will be excavated until an acceptable PID reading (<100 ppm) is established in that area. The soils removed from the excavation will be placed in one of the land treatment areas. Large rocks removed from the north sidewall will be placed in the on-site rock stockpile.

When no areas of concern are detected with the PID on the excavated sidewalls, then grab confirmation samples will be collected as outlined in the "Sampling Activities" section of this work plan. No excavation will be performed on the excavation floor, the west sidewall, east sidewall or the south sidewall. Prior sampling activities have shown these areas of the excavation to be below the NMOCD TPH Remedial Threshold of 100 mg/kg (Table 2).

Sampling Activities

Confirmation grab samples will be collected on the north sidewall after the completion of the excavation activities (Figure 3). The confirmation samples on the north sidewall will be grab samples collected from two (2) locations following field screening with a PID. If no PID readings are detected the two (2) samples will be collected at the mid-point of the north excavation sidewall, halfway between the base and top of the excavation approximately three to four feet (3'-4') below ground surface. The two (2) samples will be twenty-five feet (25') apart and twenty-five feet' (25') from the east and west sidewalls respectively.

In addition, confirmation grab samples will be collected throughout the floor of the excavation to aid in delineating the horizontal extent of the petroleum impact. Sampling locations will be determined by field screening activities with a PID. The floor of the excavation will be broken into quadrants and the maximum PID from each quadrant will be sampled. If no PID readings are detected in a quadrant than the sample will be collected from the middle of that particular quadrant.

Each confirmation sample will be analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) by SW-846 method 8021, and total petroleum hydrocarbons (TPH) by SW-846 method 8015. Each sample will be collected using new disposable sampling equipment to prevent cross contamination. Any non-disposable sampling equipment will be stainless steel, and will be decontaminated using a phosphate free surfactant and de-ionized water before the collection of each sample.

This section is submitted as a finalized sampling plan following the excavation activities. This is contingent on the approval of the NMOCD. Any changes requested by the NMOCD will be incorporated into the sampling activities of this work plan prior to implementation.

Soil Disposal Activities

No disposal activities are proposed at this time. All onsite soils will be placed back in the excavation, on top of the twelve millimeter (12 mill) black-on-black rock grade polyethylene liner, as backfill. These activities are outlined in the "Restoration Activities" section of this work plan.

Modeling Activities

Prior to backfill activities, a soil migration model will be run to evaluate the migration characteristics of the soils underneath the proposed liner. The installation of the liner is described in the "Restoration Activities" section of this work plan for illustration purposes. Current, historical and the new data collected as part of this work plan will be utilized and evaluated in the model.

A seasonal compartment model which simulates long-term pollutant fate and migration in the unsaturated soil zone will be utilized to describe the following components of a site specific soil column which extends from the ground surface to the ground-water table.

- Pollutant concentrations and masses in the soil
- Pollutant migration to ground water.

The model will estimate all the above components on a monthly basis for 999 years of simulation time to perform a long-term leaching study. The following pollutant fate processes will be accounted for: Volatilization, Adsorption, Cation Exchange, Biodegradation, Hydrolysis and Complexation.

Restoration Activities

Prior to the initiation of the restoration activities, MW-1 will be extended to an elevation above the top of the excavation and the top of casing re-surveyed. With the monitoring well extended to a level accessible after backfilling activities, the bottom of the excavation will be filled with

an even six inch (6") layer of sand. A twelve millimeter (12 mill) black-on-black rock grade poly ethylene liner will then be placed on the sand covering the base of the excavation. A small hole will be cut through the liner to encompass MW-1 which will be left in the excavation. Clay packing material will be utilized to seal the opening in the poly around the monitor well casing. An additional six inch (6") layer of sand will be placed on top of the poly.

With the liner in place, backfill of the excavated materials will begin. A layer of the rock material will first be placed back in the excavation. Then a layer of the soils from the land treatment area will be placed on top of the first rock layer. The two layers will then be properly packed. This alternating of layers and packing activities will continue to the top of the excavation taking great care to insure the integrity of MW-1 and the pipeline. Only soils, no rock, will be place in the proximity of either the pipeline or MW-1. Clean back-fill soil will be used during the restoration activities as needed.

Conclusion

Prior to any site restoration activities, the results of the additional excavation activities and confirmation soil sampling activities, as well as the modeling exercise will be presented to the NMOCD. Upon the NMOCDs concurrence that all soils activities are complete, a more detailed site restoration plan will be prepared and submitted to the NMOCD. The restoration activities presented in this plan are for informational purposes only. Soil aeration activities in the land treatment areas will continue until such time that the restoration activities commence.

Signatures

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Written By:

Louis B. Sanchez Jr. B.S Project Manager Llano-Permian Environmental

Reviewed By:

1ac

Terry James B.S., M.S. Senior Project Manager Llano-Permian Environmental

Figures

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Tables

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Table 1



Llano-Permian Environmental 318 East Taylor Street, Hobbs, New Mexico 88240

210 East raylor Sures, ribubs, Ivew MEXICO 00240 Phone: 505/393-4261, FAX: 505/393-4658

SUMMARY OF ENVIRONMENTAL BORING RESULTS (SOIL)

Plains All American Pipeline, LP. - 8" Moore to Jal #2 - Ref #2002-10273

Conclusion of the second se	Sample	Soil	PID Reading:	Benzene	Toluene	Ethylbenzene	m,p- Yvlenes	o-Xylene	Total RTFX	TPH (as	TPH (as	Total TPH
Sample LD	Date	Boring	Bunnar				source fair			gasoline)	diesel)	
			(mdd)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
2002-10270 (10-12)			906	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (15-17)			592	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (20-22)		_	721	<i>L</i> *1€	155	77.9	98.9	48.0	41.7	5,660	3,930	0G7°6.
2002-10270 (25-27)			427	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (30-32)			733	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (35-37)			386	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (40-42)	11		588	الم 12	142	69.4	106	46.7	7E.?	7,300	4,860	2.200
2002-10270 (45-47)	-inf-/2	MW-1	301	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (50-52)	- >		431	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (55-57)			599	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (60-62)			660	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (65-67)			799	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10273 (70-72)			390	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10273 (75-77)			566	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10273 (80-82)			11.2	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-2 (10-15)	7€ Oct		23.8	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-2 (15-20)	04	MW-2	58.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (20-25)			30.6	NA	NA	NA	NA	NA	NA	NA	NA	NA

	_				_	_		_			_			_						_	_	1		-		_		_		-			
NA	NA	<10.0	NA	NA	NA	NA	NA	<10.0	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA
NA	NA	<10.0	NA	NA	NA	NA	NA	<10.0	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA
NA	NA	<10.0	NA	NA	NA	NA	NA	<10.0	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA	NA	NA	<10.0	NA	NA
NA	NA	<0.125	NA	NA	NA	NA	NA	<0.125	NA	NA	<0.125	NA	NA	NA	NA	<0.125	NA	NA	NA	NA	<0.125	NA	NA	NA	NA	<0.125	NA	NA	NA	NA	<0.125	NA	NA
NA	NA	<0.0250	NA	NA	NA	NA	NA	<0.0250	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA
NA	NA	<0.0250	NA	NA	NA	NA	NA	<0.0250	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA
NA	NA	<0.0250	NA	NA	NA	NA	NA	<0.0250	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA
NA	NA	<0.0250	NA	NA	NA	NA	NA	<0.0250	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA
NA	NA	<0.0250	NA	NA	NA	NA	NA	<0.0250	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA	NA	NA	<0.0250	NA	NA
26.3	53.8	102	40.3	109	114	102	110	98.3	62.4	23.2	77.4	50.1	38.6	66.1	68.7	42.8	67.7	62.2	78.3	56.9	53.3	70.6	40.5	6.99	47.6	71.2	54.7	79.8	76.2	75.3	90.9	56.8	63.4
	L			MW-2	Con't	L							L	L		MW-3					, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,												
				25-Oct-	04										+~() JC	-100-07	5										75 004	-120-00					
MW-2 (25-30)	MW-2 (30-35)	MW-2 (35-40)	MW-2 (40-45)	MW-2 (45-50)	MW-2 (50-55)	MW-2 (55-60)	MW-2 (60-65)	MW-2 (65-70)	MW-2 (70-75)	MW-3 (10-15)	MW-3 (15-20)	MW-3 (20-25)	MW-3 (25-30)	MW-3 (30-35)	MW-3 (35-40)	MW-3 (40-45)	MW-3 (45-50)	MW-3 (50-55)	MW-3 (55-60)	MW-3 (60-65)	MW-3 (65-70)	MW-3 (70-75)	MW-4 (10-15)	MW-4 (15-20)	MW-4 (20-25)	MW-4 (25-30)	MW-4 (30-35)	MW-4 (35-40)	MW-4 (40-45)	MW-4 (45-50)	MW-4 (50-55)	MW-4 (55-60)	MW-4 (60-65)

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NA
42.0
MW-4
25-Oct-
2-70)
MW-4 (6

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		1 11 111	0.71	551	UN		W	INA	INA	NA	NA	NA
MW-4 (70-75)	04	Con't	23.3	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
NMOCD Remedial Thru	sholds			10					50			100

¹Bolded values are in excess of the NMOCD Remediation Thresholds

²NA : Not Analyzed

³NS : Not Sampled ⁴ Detected, but below the Reporting Limit; therefore, result is an estimated concentration (CLP-J Flag).

Table 2



Llano-Permian Environmental

318 East Taylor Street, Hobbs, New Mexico 88240 Phone: 505/393-4261, FAX: 505/393-4658

SUMMARY OF EXCAVATION ANALYTICAL RESULTS (SOIL)

Plains All American Pipeline, LP. - 8" Moore to Jal #2 - Ref #2002-10273

Sample ID	Sample Date	Sample Location	Field PID Analysis	Benzene	Toluene	Ethylbenzene	m,p- Xylenes	0- Xylene	Total BTEX	TPH (as gasoline)	TPH (as diesel)	Total TPH
			(wdd)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
SEMR31302NSW	13-Mar-02	North Sidewall	NA	<25	937	3,590	4,410	2,140	11,077	224	545	769
SEMR31302RAMP	13-Mar-02	Ramp	NA	<25	<25	<25	<25	<25	<125	<10	<10	<10
SEMR51302SP	13-May-02	Stockpile	NA	₽	V	-∠	-1	۲	NA	NA	NA	NA
SEMR51702BCC3	17-May-02	Bottom -3'	NA	<25	<25	<25	<25	⊲25	<125	<10	<10	<10
SE103002StkPile	30-Oct-02	Stockpile	NA	0.002	0.006	0.003	0.007	0.004	0.022	NA	NA	NA
SLE8M2111203NSWC	12-Nov-03	North Sidewall Composite (3'-4')	3.2	<0.025	<0.025	<0.025	<0.025	<0.025	<0.125	<10.0	195	ু ⊌ ₹
SLE8M2111203SSWC	12-Nov-03	South Sidewall Composite (3'-4')	6.9	<0.025	<0.025	<0.025	<0.025	<0.025	<0.125	<10.0	<10.0	<10.0

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7	100			nc					IU			nedial 1 nresno	
	100			50					10		lde	nadial Threeho	NMOCD Ren
	<10.0	<10.0	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	NA	West Sidewall - South End Grab (3'-4')	3-Jun-05	WW-S-01
7	<10.0	<10.0	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	NA	West Sidewall - North End Grab (3'-4')	3-Jun-05	10-N-WW
~~~	<10.0	<10.0	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	9.7	Bottomhole Composite (4')	12-Nov-03	SLE8M2111203BHC
ri	<10.0	<10.0	<10.0	<0.125	<0.025	<0.025	<0.025	<0.025	<0.025	8.5	East Sidewall Composite (3'4')	12-Nov-03	SLE8M2111203ESWC

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Bolded values are in excess of the NMOCD Remediation Thresholds

²NA : Not Analyzed

³NS : Not Sampled

4 Detected, but below the Reporting Limit; therefore, result is an estimated concentration (CLP-J Flag).

Table 3



Llano-Permian Environmental

318 East Taylor Street, Hobbs, New Mexico 88240 Phone: 505/393-4261, FAX: 505/393-4658

SUMMARY OF LAND TREATMENT ANALYTICAL RESULTS (SOIL)

Plains All American Pipeline, LP. - 8" Moore to Jal #2 - Ref #2002-10273

						Å		Total	HdT	HdT	Total	
Sample ID	Sample Date	Sample Location	Benzene	Toluene	Ethylbenzene	Xylenes	o-Xylene	BTEX	(as gasoline)	(as diesel)	HdT	
			(mg/Kg)	(mg/Kg)	(mg/Kg)	(ng/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	
MN	15-Dec- 04	Northwest Quadrant of Cell	ΝA	ΝA	NA	ΥN	ΥN	ΝA	<\$	282	ŝ.	
SW	15-Dec- 04	Southwest Quadrant of Cell	NA	NA	NA	NA	NA	NA	Ś	464	2957 7	
NE	15-Dec- 04	Northeast Quadrant of Cell	NA	NA	NA	W	ΥN	AN	\$	31.2	31.2	
SE	15-Dec- 04	Southeast Quadrant of Cell	NA	NA	NA	NA	AN	NA	Ŷ	18.1	18.1	
NMOCD Remet	lial Thresho	olds	10					50			100	

 $^{I,P,0[i]:gc}$ values are in excess of the NMOCD Remediation Thresholds

²NA : Not Analyzed

³NS : Not Sampled

4 Detected, but below the Reporting Limit; therefore, result is an estimated concentration (CLP-J Flag).


District I 1625 N. French Dr., Ho District II 1301 W. Grand Avenue		State of New Mexico Energy Minerals and Natural Resources					Form C-141 Revised October 10, 2003					
District III 1000 Rio Brazos Road, <u>District IV</u> 1220 S. St. Francis Dr.,			Oil Co 1220 S Sant	nserva outh S ta Fe, 1	ion Division S Francis Dr. JM 87505			ubmit 2 Copies to appropriat District Office in accordanc with Rule 116 on bac side of for				
		Rele	ase No	otifica	tion a	and C	orrect	ive Action	n			
OPERATOR Name of Company						Initial Report Final Report						
EOTT		Frank Hernandez										
Address PO Box 1660 5805 East Highway 80 Midland, Texas 79702							Telephone No. 915.638.3799					
Facility Name 8" Moore to Jal #2						Facility Type 8" Steel Pipeline						
Surface Owner					Miner	al Owne					Lease No)
State of New Mexico												
The last states	Section	Tourshin	Damaa	LOCA	TION O	OF REI	LEASE	East from the	East/West I	ina	Country	Loo
16	16	T17S	R37E	reet iro	an me	Noturs	outin Linte	reet nom the	East west L	Ane	Lat. 32 Lon. 10: 08.47"W	19' 56.61"N 3 15' 1
				NAT	URE O	F RELI	EASE					
Type of Release							Volume of Release				Volume Recovered	
Source of Release 8" Steel Pipeline							Date and Hour of Occurrence EOTT				Date and Hour of Discovery	
Was Immediate Notice Given?							If YES, To Whom? Larry Johnson					
By Whom? Pat McCasland EPI							Date and Hour 10-23-02 @ 7:00 AM					
Was a Watercourse Reached? Ves X No							If YES, Volume Impacting the Watercourse. NA					
If a Watercourse was NA	Impacted, I	Describe Fully.	*									
Describe Cause of Pr 8" Steel Pipeline Sit disposed of.	oblem and l e will be del	Remedial Actio ineated to deter	n Taken.* rmine the	vertical a	nd horize	ontal exte	ents of cont	tamination. Co	ontaminated s	soil v	vill be blend	ded on site
Describe Area Affect 5,794 sqft ~160' x 40 site or disposed of. R Toluene, and Xylene	ted and Clea ' Site will be emedial Go s = 50 mg/K	nup Action Tal e delineated to als: TPH 8015r g.	ken.* determine n = 100 m	the vertions of the vertion of the vertice of the the the test of test	cal and h enzene =	orizontal 10 mg/K	extents of g, and BTI	contamination. EX, i.e., the ma	. Contamina ss sum of Be	ted s	oil will be t e, Ethyl Be	olended on nzene,
I hereby certify that the regulations all operations all operations all operations all operations the environment of the enviro	he informat ors are requ nvironment ns have faile ment In ad	ion given above ired to report and The acceptance to adequately dition NMOCI	e is true ar nd/or file o ce of a C- / investiga	nd comple certain re 141 report the and re page of a C	ete to the lease not t by the l mediate	best of r ifications NMOCD contamin	ny knowled s and perfo marked as ation that p not relieve	dge and unders rm corrective a "Final Report" pose a threat to the operator of	tand that pur ctions for rel ' does not rel ground wate	suan lease lieve r, su	t to NMOC s which ma the operato rface water,	D rules and y endanger r of liabilit , human
other federal, state, o	r local laws	and/or regulati	ons.							., 10		
Signature:								OIL CONS	SERVAT	<u>10</u> 1	<u>N DIVIS</u>	<u>SION</u>
Printed Name: Frank Hernandez								Approved by District Supervisor:				
Title: District Environmental Supervisor							Approval Date:			Expiration Date:		
Date: October 23	2003	Phor	ne: 915.63	38.3799			Conditi	ons of Approve				Attached
Attach Additional	Sheets If N	lecessary	10. 915.05	53.3197			Conuiti	ona or Approva	±1.			

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