1R - 380

REPORT

DATE:

5-29-07

2002-10210 NM

RECEIVED JUN 25 2007

1R-380
Report
5-29-07

SOILS CLOSURE REPORT
8" MOORE TO JAL #1
LEA COUNTY, NEW MEXICO
NMOCD REF. # 1R-0380
SRS #2002-10270

SE1/4 of the NW ¼ of Section 16, Township 17 South, Range 37 East

Prepared for:

PLAINS PIPELINE, L.P.
333 Clay Street
Suite 1600
Houston, Texas 77002

Prepared by:

Talon/LPE
Marc Stroope
318 E. Taylor St.
Hobbs, New Mexico 88240

Distribution:
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May 29, 2007

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8" Moore to Jal #1
Soils Closure Report

Plains Pipeline, L.P.
Houston, Texas

Talon/LPE PROJECT NO. PLAINS007SPL

Prepared by:

Marc Stroope
Senior Project Manager

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Talon/LPE
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May 2007

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NMOCD - New Mexico Oil Conservation Division
SLO – New Mexico State Land Office

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Appendices

1.0 INTRODUCTION AND OBJECTIVES

1.1 Objectives and Site Location

Talon/LPE was retained by Plains Pipeline, L.P. (Plains) to conduct a soils investigation at the 8" Moore to Jal #1 crude oil pipeline release site in Lea County, New Mexico. The purpose of this investigation was to delineate and remediate hydrocarbon impacted soils at this location.

The 8" Moore to Jal #1 release site is located approximately 9.1 miles southeast of Lovington in Lea County, New Mexico. The GPS coordinates for the site are 32°50'12.36"N latitude and 103°15'26.234"W longitude. 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. A topographic map is provided as Figure 1 in Appendix A.

1.2 Site Background

In October 2002, a release of approximately two hundred (200) barrels of crude oil occurred at the site due to corrosion (internal and/or external) of the pipeline. Approximately eight thousand (8,000) square feet 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.

1.3 Regulatory Framework

The NMOCD has developed guidance for all federal, state, and fee lands in New Mexico for remediating contaminants resulting from leaks, spills, and releases of oilfield wastes or products. This guidance assigns ranking scores to sites based on depth to groundwater, distance from water supply sources, and distance to surface water bodies, and provides remediation/clean-up targets for benzene, Total BTEX (benzene, toluene, ethylbenzene, and xylenes), and total petroleum hydrocarbons (TPH). Based on site visits and a review of aerial photographs, the 8" Moore to Jal #1 site is located in a rural area with no permanent residence or surface water within a 1,000 foot radius of the release point. According to information available from the New Mexico Office of the State Engineer, the nearest water well is not within 1000 feet of the site. Based on groundwater elevation data, the approximate depth to water at the site is 66 feet below ground surface (bgs).

According to NMOCD guidance, and based on depth to groundwater, distance from water supply sources, and distance to surface water bodies the site ranking for this site is ten (10). The ranking process is summarized below:

Criteria:	Site Condition:	Ranking Score:
Depth to Groundwater	66 feet	10
<1,000 Feet to Water Source?	No	0
<200 Feet to Private Domestic Water Source?	No	0
Distance to Surface Water Body	>1,000 feet	0
Total Ranking:		10

Based on the calculated rating, the applicable remediation guidelines for this site are as follows:

Benzene	**10 ppm**
Total BTEX	**50 ppm**
TPH	**1,000 ppm**

2.0 FIELD ACTIVITIES

The following sections present a summary of the investigation activities conducted at the 8" Moore to Jal #1 site. The focus of the investigation was the excavation and remediation of hydrocarbon impacted soils exceeding applicable NMOCD delineation/remediation limits.

2.1 Soil Investigation Activities

In an effort to delineate the extent of impacted soil at the site, soil boring and sampling activities were performed by Environmental Plus, Inc. (EPI) at the site to depths ranging from five (5) to sixty (60) feet bgs in October 2002. Field photo-ionization detector (PID) measurements were collected at discrete intervals. The field PID measurements indicated organic vapor concentrations exceeded 100 parts per million (ppm) to a depth of at least fifty-five (55) feet bgs in soil boring BH-1 and to a depth of twelve (12) feet in soil boring BH-4 (reference Table 1).

EPI commenced excavation activities at the site in June 2003 to remove soil impacted above the NMOCD remedial threshold limits. Surficial soil saturated by the release was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm for treatment. Subsequently, approximately 2,800 cubic yards of soil were excavated and processed through a screener to separate the rock from the soil. After the soil and rock had been separated, approximately 950 cubic yards of the excavated soil was placed into two (2) land treatment areas (Blending Cell "A" and Blending Cell "B") and the rock was stockpiled on site. The land treatment areas were turned to aerate the soils and accelerate TPH (total petroleum hydrocarbon) degradation.

On November 25, 2003, composite samples were collected from the north (NSW), south (SSW), east (ESW) and west (WSW) sidewalls, as well as the bottom of the excavation (BH), to evaluate the removal of soil impacted above NMOCD remedial thresholds. Laboratory analyses of the samples collected on November 25, 2003 indicated soils impacted above the NMOCD remedial thresholds remained in all sampling locales, with the exception of the west sidewall (reference Table 2).

On January 17, 2006, after additional over-excavation activities were completed on the north, south and east sidewalls, grab samples were collected from the excavation floor, north sidewall (NEW-004 and NWW-005), south sidewall (SEW-001 and SWW-006), and east sidewall (EW-002 and EW-003) as referenced in Figure 1. Each of the grab samples taken from the sidewalls exhibited benzene, Total BTEX, and TPH below NMOCD remedial threshold limits (reference Table 2). Twelve grab samples, consisting of six on each side of the pipeline (EFW-007, EFW-008, EFW-009, EFW-010, EFW-011, EFW-012, EFE-013, EFE-014, EFE-015, EFE-016, EFE-017, and EFE-018), were collected from the excavation floor to obtain a more complete evaluation of the concentration distribution at the base of the excavation. Each of the excavation floor samples exhibited concentrations below the NMOCD remedial threshold limits for benzene and Total BTEX, while TPH concentrations were above NMOCD remedial threshold limits (reference Table 2).

On September 20, 2006, remediation confirmation samples were collected from the land treatment areas (NW-A, NE-A, SW-A, SE-A, NW-B, NE-B, SW-B, and SE-B) and sampling results indicated hydrocarbon levels in the land treatment area soil were below NMOCD remedial threshold limits (reference Figure 1 and Table 2).

On January 30, 2007, a total of two (2) confirmation samples were collected from the northeast wall (NE WALL) and the southeast wall (SE WALL). The laboratory results from the final confirmation samples indicated benzene, Total BTEX, and TPH concentrations below the applicable NMOCD remedial threshold limits (reference Figure 1 and Table 2).

2.2 Excavation Lining and Backfill Activities

On July 18, 2006, Plains began removal of the portion of the pipeline running through the excavation and capped each end. Caps were welded in place on July 31, 2006. On February 15, 2007, Talon/LPE began the approved NMOCD backfilling activities (Soil Remediation Work Plan, June 2005) by placing approximately six (6) inches of sand on the floor of the excavation area in preparation for the installation of a 20 mil poly liner. On February 21, 2007, the 20 mil liner was placed in the excavation. A clay barrier was placed around the base of monitoring wells MW-1 and MW-1A to provide a seal between the wells' casing and the installed liner. A second six inch bed of sand was placed over the 20 mil liner and the excavation was backfilled with remediated soils from the blending area. A back hoe was utilized to restore the site to natural grade.

3.0 CONCLUSIONS

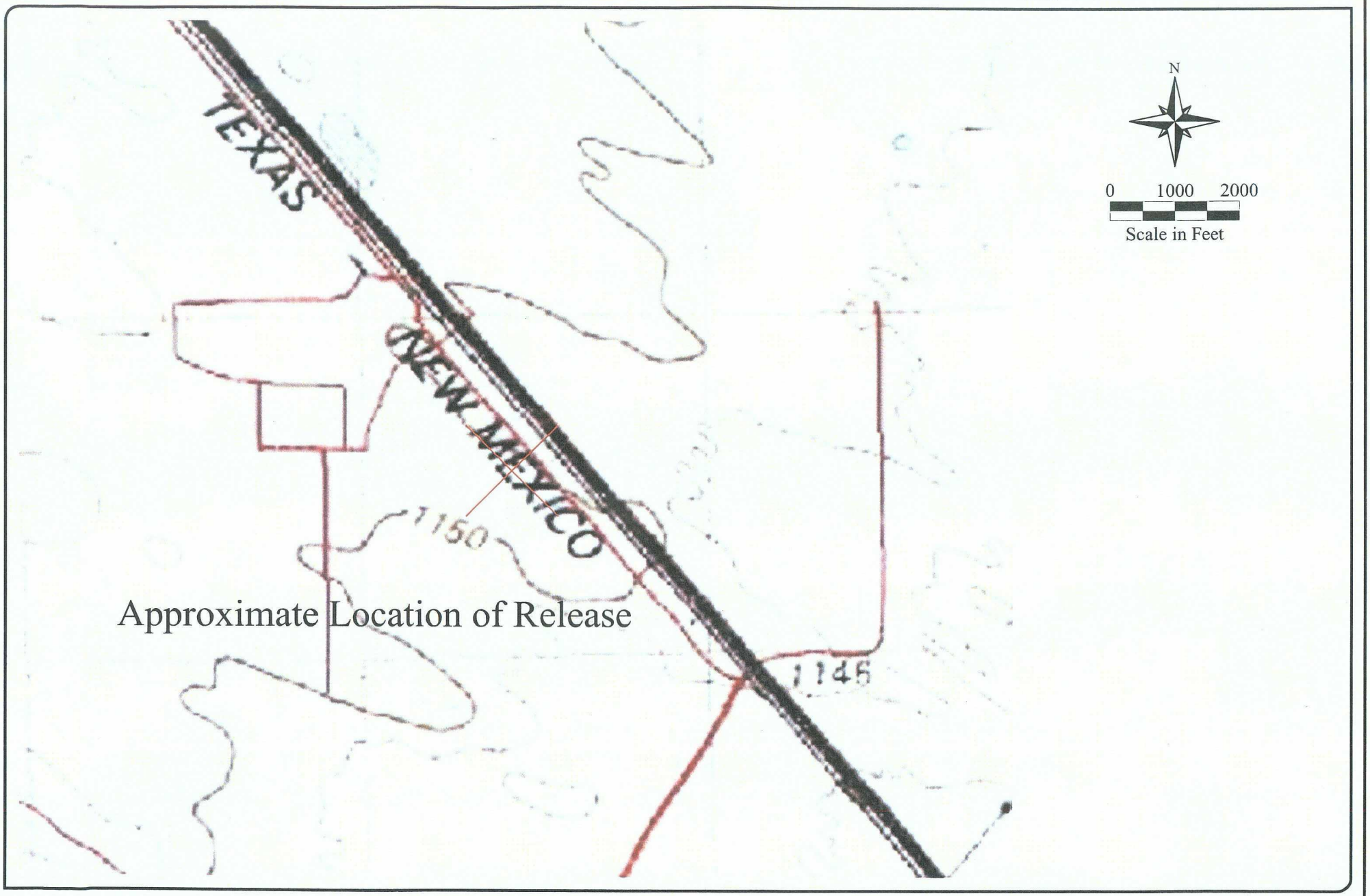
3.1 Recommendations

Based upon the findings of this investigation, Talon/LPE makes no further recommendations for future actions related to this release. Talon/LPE proposes that this report be the final action in regards to the soil investigation and remediation activities at the site and recommends that Plains submit a copy of this report to the NMOCD and request that this report be the final document and action in regard to soil activities related to this release and that the NMOCD issue a letter to Plains requiring no further action.

Appendix A

Drawings

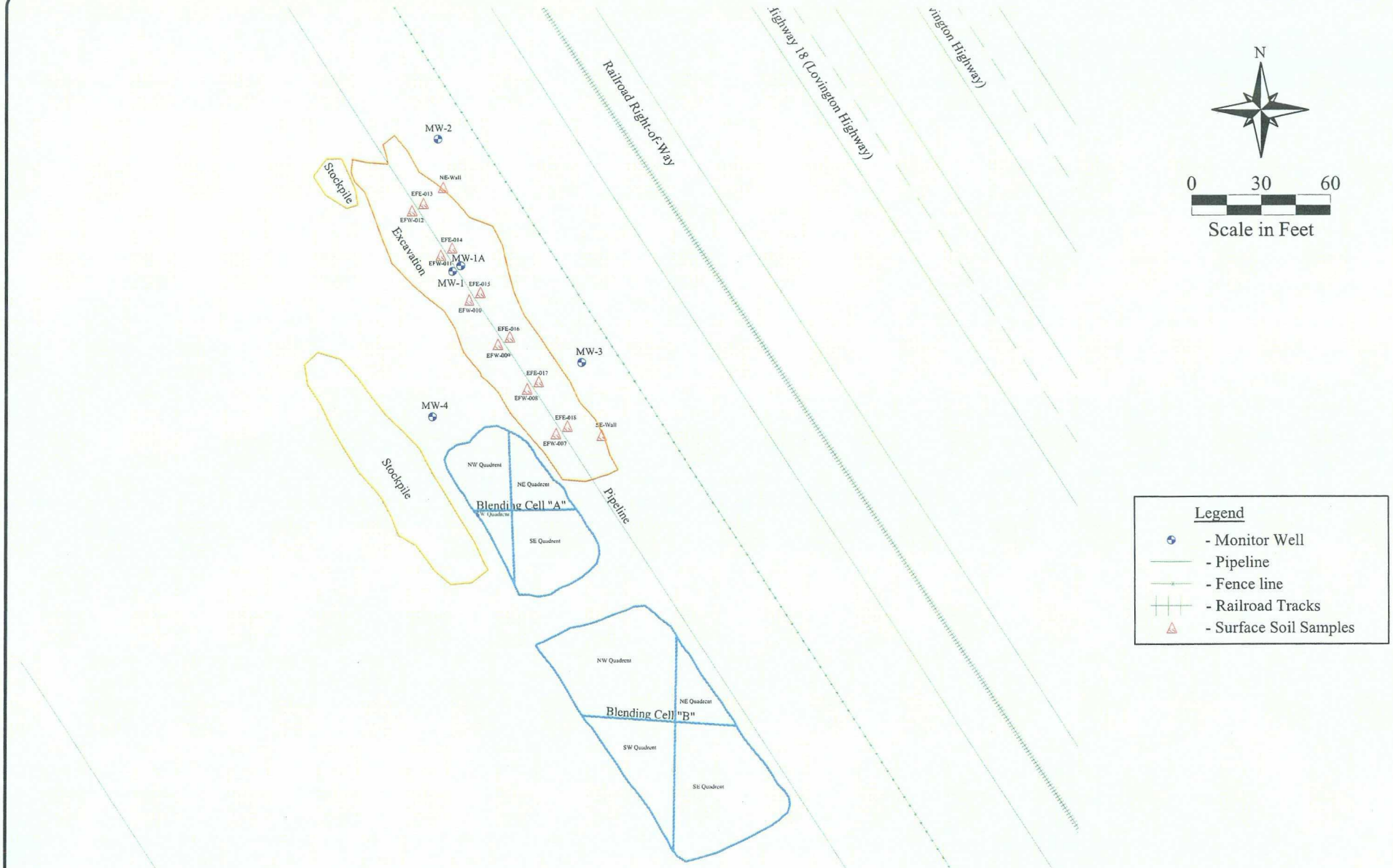
Figure 1 – Topographic Map
Figure 2 – Site Map With Confirmation Sampling Locations



TALON LPE

Date:	02/21/2007
Scale:	1" = 2000'
Drawn By:	WDR

8" Moore to Jal #1
9.2 Miles SE of Lovington, NM
Lea County, New Mexico
Figure 1 - Topographic Map - Lovington SE - 1985



TALON LPE

Date: 02/21/2007
Scale: 1" = 60'
Drawn By: WDR

8" Moore to Jal #1

9.2 Miles SE of Lovington, NM

Lea County, New Mexico

Figure 2 - Site Map with Confirmation Sampling Locations

APPENDIX B

Tables

Table 1 – Summary of PID Readings – Soil Borings
Table 2 – Summary of Analytical Data – Excavation Samples

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Table 1
Summary of PID Readings - Soil Borings
Plains Pipeline, L.P.
8" Moore to Jal #1
Lea County, NM SRS# 2002-10270
Talon/LPE Project Number PLAINS007SPL

Sample Designation	Date Sampled	Soil Boring	PID Readings
SE8M10232BH1 (5-7)	10/23/2002	BH-1	**695**
SE8M10232BH1 (10-12)			**505**
SE8M10232BH1 (15-17)			**306**
SE8M10232BH1 (20-22)			**1,350**
SE8M10232BH1 (25-27)			**1,223**
SE8M10232BH1 (30-32)			**682**
SE8M10232BH1 (35-37)			**510**
SE8M10232BH1 (40-42)			**1,583**
SE8M10232BH1 (45-47)			**384**
SE8M10232BH1 (50-52)			**589**
SE8M10232BH1 (55-57)			**485**
SE8M10232BH1 (60-62)			NA
SE8M102402BH2 (5-7)	10/24/2002	BH-2	1.6
SE8M102402BH2 (10-12)			2.9
SE8M102402BH2 (15-17)			3.1
SE8M102402BH3 (5-7)	10/24/2002	BH-3	1.6
SE8M102402BH3 (10-12)			2.9
SE8M102402BH3 (15-17)			1.3
SE8M102402BH4 (5-7)	10/24/2002	BH-4	46.4
SE8M102402BH4 (10-12)			**225**
SE8M1024BH4 (15-17)			3.3
SE8M102402BH4 (20-22)	10/24/2002	BH-4	NA
SE8M1024O2BH4 (25-27)			3.0
SE8M102402BH4 (30-32)			NA
SE8M102402BH4 (35-37)			1.7
SE8M102402BH4 (50-52)			NA
SE8M102502BH5 (5-7)	10/25/2002	BH-5	3.0
SE8M102502BH5 (10-12)			1.3
SE8M102502BH5 (15-17)			0.0
SE8M102502BH5 (25-27)			NA
SE8M102502BH5 (35-37)			NA
SE8M102502BH6 (5-7)	10/25/2002	BH-6	NA
SE8M102502BH6 (10-12)			NA
SE8M102502BH6 (15-17)			NA
NMOCD Remediation Guildelines			**100**

[1] ***Bolded*** *values are in excess of the NMOCD Remediation Thresholds*

TALONLPE

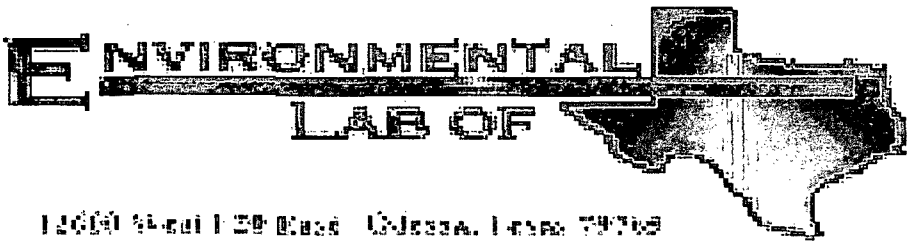
Table 2
Summary of Analytical Data - Excavation Samples
Plains Pipeline, L.P.
8" Moore to Jal #1
Lea County, NM SRS# 2002-10270
Talon/LPE Project Number PLAINS007SPL

Sample Designation	Date Sampled	Concentration					
		mg/Kg	mg/Kg				
		Total TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX
SE8M1112503WSW	11/25/2003	74.2	<0.025	<0.025	<0.025	0.040	0.040
SE8M1112503ESW	11/25/2003	**2,564**	0.082	0.679	0.558	1.563	2.88
SE8M1112503SSW	11/25/2003	144	<0.025	<0.025	<0.025	0.078	0.078
SE8M1112503NSW	11/25/2003	366	<0.025	0.179	0.197	0.807	1.18
SE8M1112503BH	11/25/2003	**9,415**	0.235	0.992	0.500	1.693	3.42
EFW-009	1/17/2006	**3,470**	<0.0250	<0.0250	0.0420	0.0742	0.1162
EFW-010	1/17/2006	**2,180**	<0.0250	<0.0250	0.0263	0.0689	0.0952
EFW-011	1/17/2006	**3,420**	<0.0250	<0.0250	0.0310	0.1052	0.1362
EFW-012	1/17/2006	**2,970**	<0.0250	<0.0250	0.141	0.452	0.593
EFE-013	1/17/2006	**6,880**	<0.0250	<0.0250	0.0400	0.0567	0.0967
EFE-014	1/17/2006	**5,350**	<0.0250	<0.0250	0.0311	0.0724	0.1035
EFE-015	1/17/2006	**4,230**	0.0274	0.0926	0.151	0.759	0.9100
EFE-016	1/17/2006	**7,400**	1.23	2.85	0.742	3.444	4.1860
EFE-017	1/17/2006	**8,140**	<0.0250	<0.0250	<0.0250	0.0487	0.0487
EFE-018	1/17/2006	**4,610**	<0.0250	<0.0250	0.0657	0.411	0.4767
SPN-019	1/17/2006	211	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
SEW-001	1/17/2006	119	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
EW-002	1/17/2006	<10	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
EW-003	1/17/2006	155	<0.0250	<0.0250	0.0291	0.0599	0.1890
NEW-004	1/17/2006	<10	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
NWW-005	1/17/2006	<10	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
SWW-006	1/17/2006	64.9	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
EFW-007	1/17/2006	**2,210**	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
EFW-008	1/17/2006	**5,740**	<0.0250	<0.0250	0.0535	0.2541	0.3076
NW-A	9/20/2006	306	BTEX not sampled				
NE-A	9/20/2006	450	BTEX not sampled				
SW-A	9/20/2006	217	BTEX not sampled				
SE-A	9/20/2006	258	BTEX not sampled				
NW-B	9/20/2006	147	BTEX not sampled				
NE-B	9/20/2006	210	BTEX not sampled				
SW-B	9/20/2006	225	BTEX not sampled				
SE-B	9/20/2006	186	BTEX not sampled				
NE Wall	1/30/2007	<50	<0.0100	0.0154	<0.0100	0.0847	0.1001
SE Wall	1/30/2007	<50	<0.0100	<0.0100	<0.0100	0.0447	0.0477
NMOCD Remediation Guildelines		**1,000**	**10**				**50**

[1] ***Bolded*** *values are in excess of the NMOCD Remediation Thresholds*

APPENDIX C

Laboratory Analytical Data Sheets and Chain of Custody Documentation



1089 West I-20 East Odessa, Texas 79765

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 #1

Project Number: 2002-10270

Location: 15 miles North of Hobbs, NM

Lab Order Number: 6A18005

Report Date: 03/30/07

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

Project: 8 inch Moore to Jal #1
Project Number: 2002-10270
Project Manager: Camille Reynolds

Fax: (432) 687-4914

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EFW-009	6A18005-01	Soil	01/17/06 13:20	01-18-2006 08:16
EFW-010	6A18005-02	Soil	01/17/06 13:30	01-18-2006 08:16
EFW-011	6A18005-03	Soil	01/17/06 13:45	01-18-2006 08:16
EFW-012	6A18005-04	Soil	01/17/06 13:50	01-18-2006 08:16
EFE-013	6A18005-05	Soil	01/17/06 14:05	01-18-2006 08:16
EFE-014	6A18005-06	Soil	01/17/06 14:15	01-18-2006 08:16
EFE-015	6A18005-07	Soil	01/17/06 14:25	01-18-2006 08:16
EFE-016	6A18005-08	Soil	01/17/06 14:35	01-18-2006 08:16
EFE-017	6A18005-09	Soil	01/17/06 14:45	01-18-2006 08:16
EFE-018	6A18005-10	Soil	01/17/06 14:55	01-18-2006 08:16
SPN-019	6A18005-11	Soil	01/17/06 10:35	01-18-2006 08:16
SEW-001	6A18005-12	Soil	01/17/06 11:30	01-18-2006 08:16
EW-002	6A18005-13	Soil	01/17/06 11:40	01-18-2006 08:16
EW-003	6A18005-14	Soil	01/17/06 11:50	01-18-2006 08:16
NEW-004	6A18005-15	Soil	01/17/06 12:00	01-18-2006 08:16
NWW-005	6A18005-16	Soil	01/17/06 12:10	01-18-2006 08:16
SWW-006	6A18005-17	Soil	01/17/06 12:25	01-18-2006 08:16
EFW-007	6A18005-18	Soil	01/17/06 13:00	01-18-2006 08:16
EFW-008	6A18005-19	Soil	01/17/06 13:15	01-18-2006 08:16

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

Project: 8 inch Moore to Jal #1
Project Number: 2002-10270
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
EFW-009 (6A18005-01) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	**J [0.0196]**	0.0250	"	"	"	"	"	"	J
Ethylbenzene	**0.0420**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.0742**	0.0250	"	"	"	"	"	"	
Xylene (o)	**J [0.0237]**	0.0250	"	"	"	"	"	"	J
Surrogate: a,a,a-Trifluorotoluene		*94.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.2 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**81.4**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**3390**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**3470**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*121 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*120 %*	*70-130*		"	"	"	"	
EFW-010 (6A18005-02) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	**0.0263**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.0689**	0.0250	"	"	"	"	"	"	
Xylene (o)	**ND**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*96.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.5 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**61.9**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**2120**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**2180**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*120 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*123 %*	*70-130*		"	"	"	"	
EFW-011 (6A18005-03) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	**J [0.0136]**	0.0250	"	"	"	"	"	"	J
Ethylbenzene	**0.0310**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.0689**	0.0250	"	"	"	"	"	"	
Xylene (o)	**0.0363**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*92.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.0 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**97.8**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**3320**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**3420**	10.0	"	"	"	"	"	"	

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

Project: 8 inch Moore to Jal #1
Project Number: 2002-10270
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
EFW-011 (6A18005-03) Soil									
Surrogate: 1-Chlorooctane		*109 %*	*70-130*		*EA61807*	*01/18/06*	*01/19/06*	*EPA 8015M*	
Surrogate: 1-Chlorooctadecane		*114 %*	*70-130*		"	"	"	"	
EFW-012 (6A18005-04) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	**J [0.0196]**	0.0250	"	"	"	"	"	"	J
Ethylbenzene	**0.141**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.324**	0.0250	"	"	"	"	"	"	
Xylene (o)	**0.128**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*99.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*115 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**150**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**2820**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**2970**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*122 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*129 %*	*70-130*		"	"	"	"	
EFE-013 (6A18005-05) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	**J [0.0187]**	0.0250	"	"	"	"	"	"	J
Ethylbenzene	**0.0400**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.0567**	0.0250	"	"	"	"	"	"	
Xylene (o)	**ND**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*94.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.5 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**155**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**6730**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**6880**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*123 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*113 %*	*70-130*		"	"	"	"	

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Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
EFE-014 (6A18005-06) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	**0.0311**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.0724**	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*91.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*82.5 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**77.6**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**5270**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**5350**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*118 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*114 %*	*70-130*		"	"	"	"	
EFE-015 (6A18005-07) Soil									
Benzene	**0.0274**	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	**0.0926**	0.0250	"	"	"	"	"	"	
Ethylbenzene	**0.151**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.561**	0.0250	"	"	"	"	"	"	
Xylene (o)	**0.198**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*105 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*119 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**242**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**3990**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**4230**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*124 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*116 %*	*70-130*		"	"	"	"	
EFE-016 (6A18005-08) Soil									
Benzene	**1.23**	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	**2.85**	0.0250	"	"	"	"	"	"	
Ethylbenzene	**0.742**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**2.52**	0.0250	"	"	"	"	"	"	
Xylene (o)	**0.924**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*815 %*	*80-120*		"	"	"	"	*S-04*
Surrogate: 4-Bromofluorobenzene		*154 %*	*80-120*		"	"	"	"	*S-04*
Gasoline Range Organics C6-C12	**1240**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**6170**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**7400**	10.0	"	"	"	"	"	"	

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EFE-016 (6A18005-08) Soil									
Surrogate: 1-Chlorooctane		*112 %*	*70-130*		*EA61807*	*01/18/06*	*01/19/06*	*EPA 8015M*	
Surrogate: 1-Chlorooctadecane		*93.0 %*	*70-130*		"	"	"	"	
EFE-017 (6A18005-09) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	**ND**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.0487**	0.0250	"	"	"	"	"	"	
Xylene (o)	**J [0.0177]**	0.0250	"	"	"	"	"	"	J
Surrogate: a,a,a-Trifluorotoluene		*84.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*82.5 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**41.8**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**8100**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**8140**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*126 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*116 %*	*70-130*		"	"	"	"	
EFE-018 (6A18005-10) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	**0.0657**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.300**	0.0250	"	"	"	"	"	"	
Xylene (o)	**0.111**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*86.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*87.0 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**J [8.58]**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	J
Diesel Range Organics >C12-C35	**4610**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**4610**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*107 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*109 %*	*70-130*		"	"	"	"	

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SPN-019 (6A18005-11) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	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		*86.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.8 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**ND**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**211**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**211**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*150 %*	*70-130*		"	"	"	"	*S-04*
Surrogate: 1-Chlorooctadecane		*128 %*	*70-130*		"	"	"	"	
SEW-001 (6A18005-12) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	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		*83.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*83.2 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**119**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**119**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*123 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*109 %*	*70-130*		"	"	"	"	
EW-002 (6A18005-13) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/23/06	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		*91.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.8 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	ND	10.0	"	"	"	"	"	"	

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EW-002 (6A18005-13) Soil									
Surrogate: 1-Chlorooctane		*121 %*	*70-130*		*EA61807*	*01/18/06*	*01/19/06*	*EPA 8015M*	
Surrogate: 1-Chlorooctadecane		*107 %*	*70-130*		"	"	"	"	
EW-003 (6A18005-14) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/21/06	EPA 8021B	
Toluene	**J [0.0223]**	0.0250	"	"	"	"	"	"	J
Ethylbenzene	**0.0291**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.0599**	0.0250	"	"	"	"	"	"	
Xylene (o)	**ND**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*82.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.2 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**155**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**155**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*125 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*113 %*	*70-130*		"	"	"	"	
NEW-004 (6A18005-15) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA62021	01/20/06	01/21/06	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		*85.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.2 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*119 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*105 %*	*70-130*		"	"	"	"	

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NWW-005 (6A18005-16) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA62021	01/20/06	01/23/06	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		*92.8 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.2 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*93.0 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*81.2 %*	*70-130*		"	"	"	"	
SWW-006 (6A18005-17) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA62021	01/20/06	01/23/06	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		*95.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.5 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**64.9**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**64.9**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*127 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*112 %*	*70-130*		"	"	"	"	
EFW-007 (6A18005-18) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA62021	01/20/06	01/23/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	**ND**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**J [0.0228]**	0.0250	"	"	"	"	"	"	J
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*90.8 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.8 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**20.1**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**2190**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**2210**	10.0	"	"	"	"	"	"	

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EFW-007 (6A18005-18) Soil									
Surrogate: 1-Chlorooctane		*111 %*	*70-130*		*EA61807*	*01/18/06*	*01/19/06*	*EPA 8015M*	
Surrogate: 1-Chlorooctadecane		*114 %*	*70-130*		"	"	"	"	
EFW-008 (6A18005-19) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA62021	01/20/06	01/24/06	EPA 8021B	
Toluene	**J [0.0204]**	0.0250	"	"	"	"	"	"	J
Ethylbenzene	**0.0535**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.187**	0.0250	"	"	"	"	"	"	
Xylene (o)	**0.0671**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*88.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*126 %*	*80-120*		"	"	"	"	*S-04*
Gasoline Range Organics C6-C12	**250**	10.0	mg/kg dry	1	EA61807	01/18/06	01/19/06	EPA 8015M	
Diesel Range Organics >C12-C35	**5490**	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	**5740**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*116 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*97.0 %*	*70-130*		"	"	"	"	

General Chemistry Parameters by EPA / Standard Methods

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Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
EFW-009 (6A18005-01) Soil									
% Moisture	**8.2**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFW-010 (6A18005-02) Soil									
% Moisture	**9.3**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFW-011 (6A18005-03) Soil									
% Moisture	**7.4**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFW-012 (6A18005-04) Soil									
% Moisture	**12.6**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFE-013 (6A18005-05) Soil									
% Moisture	**3.8**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFE-014 (6A18005-06) Soil									
% Moisture	**7.1**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFE-015 (6A18005-07) Soil									
% Moisture	**10.5**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFE-016 (6A18005-08) Soil									
% Moisture	**13.3**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFE-017 (6A18005-09) Soil									
% Moisture	**7.3**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFE-018 (6A18005-10) Soil									
% Moisture	**3.3**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
SPN-019 (6A18005-11) Soil									
% Moisture	**4.9**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	

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

Project: 8 inch Moore to Jal #1
Project Number: 2002-10270
Project Manager: Camille Reynolds

Fax: (432) 687-4914

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SEW-001 (6A18005-12) Soil									
% Moisture	**7.1**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EW-002 (6A18005-13) Soil									
% Moisture	**8.2**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EW-003 (6A18005-14) Soil									
% Moisture	**5.1**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
NEW-004 (6A18005-15) Soil									
% Moisture	**7.7**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
NWW-005 (6A18005-16) Soil									
% Moisture	**6.3**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
SWW-006 (6A18005-17) Soil									
% Moisture	**5.4**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFW-007 (6A18005-18) Soil									
% Moisture	**8.9**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFW-008 (6A18005-19) Soil									
% Moisture	**7.2**	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	

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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 EA61807 - Solvent Extraction (GC)										
Blank (EA61807-BLK1)				Prepared: 01/18/06 Analyzed: 01/19/06						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon nC6-nC35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*55.2*		*mg/kg*	*50.0*		*110*	*70-130*			
Surrogate: 1-Chlorooctadecane	*48.5*		*"*	*50.0*		*97.0*	*70-130*			
LCS (EA61807-BS1)				Prepared: 01/18/06 Analyzed: 01/19/06						
Gasoline Range Organics C6-C12	488	10.0	mg/kg wet	500		97.6	75-125			
Diesel Range Organics >C12-C35	585	10.0	"	500		117	75-125			
Total Hydrocarbon nC6-nC35	1070	10.0	"	1000		107	75-125			
Surrogate: 1-Chlorooctane	*63.3*		*mg/kg*	*50.0*		*127*	*70-130*			
Surrogate: 1-Chlorooctadecane	*54.2*		*"*	*50.0*		*108*	*70-130*			
Calibration Check (EA61807-CCV1)				Prepared: 01/18/06 Analyzed: 01/19/06						
Gasoline Range Organics C6-C12	485		mg/kg	500		97.0	80-120			
Diesel Range Organics >C12-C35	585		"	500		117	80-120			
Total Hydrocarbon nC6-nC35	1070		"	1000		107	80-120			
Surrogate: 1-Chlorooctane	*63.0*		*"*	*50.0*		*126*	*70-130*			
Surrogate: 1-Chlorooctadecane	*54.5*		*"*	*50.0*		*109*	*70-130*			
Matrix Spike (EA61807-MS1)	**Source: 6A18005-13**			Prepared: 01/18/06 Analyzed: 01/20/06						
Gasoline Range Organics C6-C12	565	10.0	mg/kg dry	545	ND	104	75-125			
Diesel Range Organics >C12-C35	616	10.0	"	545	ND	113	75-125			
Total Hydrocarbon nC6-nC35	1180	10.0	"	1090	ND	108	75-125			
Surrogate: 1-Chlorooctane	*63.5*		*mg/kg*	*50.0*		*127*	*70-130*			
Surrogate: 1-Chlorooctadecane	*55.6*		*"*	*50.0*		*111*	*70-130*			
Matrix Spike Dup (EA61807-MSD1)	**Source: 6A18005-13**			Prepared: 01/18/06 Analyzed: 01/20/06						
Gasoline Range Organics C6-C12	556	10.0	mg/kg dry	545	ND	102	75-125	1.61	20	
Diesel Range Organics >C12-C35	614	10.0	"	545	ND	113	75-125	0.325	20	
Total Hydrocarbon nC6-nC35	1170	10.0	"	1090	ND	107	75-125	0.851	20	
Surrogate: 1-Chlorooctane	*62.5*		*mg/kg*	*50.0*		*125*	*70-130*			
Surrogate: 1-Chlorooctadecane	*54.9*		*"*	*50.0*		*110*	*70-130*			

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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 EA61902 - EPA 5030C (GC)										
Blank (EA61902-BLK1)				Prepared & Analyzed: 01/19/06						
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
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: 01/19/06 Analyzed: 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 (o)	1.33	0.0250	"	1.25		106	80-120			
Surrogate: a,a,a-Trifluorotoluene	*38.4*		*ug/kg*	*40.0*		*96.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*38.3*		"	*40.0*		*95.8*	*80-120*			
Calibration Check (EA61902-CCV1)				Prepared: 01/19/06 Analyzed: 01/21/06						
Benzene	46.4		ug/kg	50.0		92.8	80-120			
Toluene	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 (o)	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)	**Source: 6A17011-04**			Prepared: 01/19/06 Analyzed: 01/21/06						
Benzene	1.41	0.0250	mg/kg dry	1.46	ND	96.6	80-120			
Toluene	1.38	0.0250	"	1.46	ND	94.5	80-120			
Ethylbenzene	1.29	0.0250	"	1.46	ND	88.4	80-120			
Xylene (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*			

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 EA61902 - EPA 5030C (GC)										
Matrix Spike Dup (EA61902-MSD1)	**Source: 6A17011-04**			Prepared: 01/19/06 Analyzed: 01/21/06						
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	"	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*			
Batch EA62021 - EPA 5030C (GC)										
Blank (EA62021-BLK1)				Prepared: 01/20/06 Analyzed: 01/23/06						
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	*37.9*		*ug/kg*	*40.0*		*94.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*36.8*		*"*	*40.0*		*92.0*	*80-120*			
LCS (EA62021-BS1)				Prepared: 01/20/06 Analyzed: 01/21/06						
Benzene	1.15	0.0250	mg/kg wet	1.25		92.0	80-120			
Toluene	1.15	0.0250	"	1.25		92.0	80-120			
Ethylbenzene	1.07	0.0250	"	1.25		85.6	80-120			
Xylene (p/m)	2.04	0.0250	"	2.50		81.6	80-120			
Xylene (o)	1.16	0.0250	"	1.25		92.8	80-120			
Surrogate: a,a,a-Trifluorotoluene	*32.2*		*ug/kg*	*40.0*		*80.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*33.1*		*"*	*40.0*		*82.8*	*80-120*			

Plains All American EH & S
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Project: 8 inch Moore to Jal #1
Project Number: 2002-10270
Project Manager: Camille Reynolds

Fax: (432) 687-4914

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 EA62021 - EPA 5030C (GC)										
Calibration Check (EA62021-CCV1)				Prepared: 01/20/06 Analyzed: 01/24/06						
Benzene	44.3		ug/kg	50.0		88.6	80-120			
Toluene	44.5		"	50.0		89.0	80-120			
Ethylbenzene	40.2		"	50.0		80.4	80-120			
Xylene (p/m)	81.2		"	100		81.2	80-120			
Xylene (o)	41.9		"	50.0		83.8	80-120			
Surrogate: a,a,a-Trifluorotoluene	*36.6*		"	*40.0*		*91.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*33.0*		"	*40.0*		*82.5*	*80-120*			
Matrix Spike (EA62021-MS1)	**Source: 6A18005-15**			Prepared: 01/20/06 Analyzed: 01/24/06						
Benzene	1.15	0.0250	mg/kg dry	1.35	ND	85.2	80-120			
Toluene	1.17	0.0250	"	1.35	ND	86.7	80-120			
Ethylbenzene	1.10	0.0250	"	1.35	ND	81.5	80-120			
Xylene (p/m)	2.21	0.0250	"	2.71	ND	81.5	80-120			
Xylene (o)	1.17	0.0250	"	1.35	ND	86.7	80-120			
Surrogate: a,a,a-Trifluorotoluene	*35.9*		*ug/kg*	*40.0*		*89.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*37.1*		"	*40.0*		*92.8*	*80-120*			
Matrix Spike Dup (EA62021-MSD1)	**Source: 6A18005-15**			Prepared: 01/20/06 Analyzed: 01/24/06						
Benzene	1.24	0.0250	mg/kg dry	1.35	ND	91.9	80-120	7.57	20	
Toluene	1.24	0.0250	"	1.35	ND	91.9	80-120	5.82	20	
Ethylbenzene	1.16	0.0250	"	1.35	ND	85.9	80-120	5.26	20	
Xylene (p/m)	2.31	0.0250	"	2.71	ND	85.2	80-120	4.44	20	
Xylene (o)	1.23	0.0250	"	1.35	ND	91.1	80-120	4.95	20	
Surrogate: a,a,a-Trifluorotoluene	*36.9*		*ug/kg*	*40.0*		*92.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*39.5*		"	*40.0*		*98.8*	*80-120*			

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

Project: 8 inch Moore to Jal #1
Project Number: 2002-10270
Project Manager: Camille Reynolds

Fax: (432) 687-4914

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA61901 - General Preparation (Prep)										
Blank (EA61901-BLK1)				Prepared: 01/18/06 Analyzed: 01/19/06						
% Solids	100		%							
Duplicate (EA61901-DUP1)		**Source: 6A18001-01**		Prepared: 01/18/06 Analyzed: 01/19/06						
% Solids	87.2		%		87.1			0.115	20	
Duplicate (EA61901-DUP2)		**Source: 6A18005-13**		Prepared: 01/18/06 Analyzed: 01/19/06						
% Solids	92.2		%		91.8			0.435	20	

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
J	Detected but below the Reporting 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 weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: _____ Date: 3/30/2007

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

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El Paso, Texas 79932
Tel (915) 585-3443
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1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #_____

Company Name: Phone #:

Address: (Street, City, Zip) Fax #:

e-mail:

Contact Person:

Invoice to:
(If different from above)

Project #: Project Name:

Project Location: Sampler Signature:

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	TX 1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/7000	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol 8260B/624	GC/MS Semi Vol 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content				Turn Around Time if different from standard	Hold

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received at Laboratory by: Date: Time:

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C

LAB COPY

LAB USE ONLY

Intact Y / N

Headspace Y / N

Temp ___ °C

Log-in Review

REMARKS:

☐ Dry Weight Basis Required

☐ TRRP Report Required

☐ Check If Special Reporting Limits Are Needed

Carrier #

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296
email: lab@traceanalysis.com

TraceAnalysis, Inc.

155 McCutcheon,Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #_____

Company Name: Phone #:

Address: (Street, City, Zip) Fax #:
e-mail:

Contact Person:

Invoice to:
(If different from above)

Project #: Project Name:

Project Location: Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	TX 1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC MS Vol 8260B/624	GC/MS Semi Vol 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content				Turn Around Time if different from standard	Hold

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received at Laboratory by: Date: Time:

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

LAB USE ONLY

Intact ___ Y / N ___

Headspace ___ Y / N ___

Temp _____ °

Log-in Review _____

REMARKS:

☐ Dry Weight Basis Required

☐ TRRP Report Required

☐ Check If Special Reporting Limits Are Needed

Carrier #

LAB COPY

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

Client: Plains P/L

Date/Time: 01-18-06 @ 0815

Order #: 6A18005

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	(Yes)	No	-2.5 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?	(Yes)	No	
Sample Instructions complete on Chain of Custody?	(Yes)	No	
Chain of Custody signed when relinquished and received?	(Yes)	No	
Chain of custody agrees with sample label(s)	(Yes)	No	*
Container labels legible and intact?	(Yes)	No	
Sample Matrix and properties same as on chain of custody?	(Yes)	No	
Samples in proper container/bottle?	(Yes)	No	
Samples properly preserved?	(Yes)	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?	(Yes)	No	
VOC samples have zero headspace?	(Yes)	No	Not Applicable

Other observations:

* see attached e-mail

Variance Documentation:

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

Regarding:

Corrective Action Taken:

ENVIRONMENTAL LAB OF
1601 West I-20 East Odessa, Texas 79763

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 #1

Project Number: 2002-10270

Location: None Given

Lab Order Number: 6I21007

Report Date: 09/26/06

Plains All American EH & S	Project: 8 inch Moore to Jal #1	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10270	
Midland TX, 79706-4476	Project Manager: Camille Reynolds	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NW-A	6I21007-01	Soil	09/20/06 10:45	09-21-2006 10:40
NE-A	6I21007-02	Soil	09/20/06 10:50	09-21-2006 10:40
SW-A	6I21007-03	Soil	09/20/06 10:52	09-21-2006 10:40
SE-A	6I21007-04	Soil	09/20/06 10:55	09-21-2006 10:40
NW-B	6I21007-05	Soil	09/20/06 10:59	09-21-2006 10:40
NE-B	6I21007-06	Soil	09/20/06 11:02	09-21-2006 10:40
SW-B	6I21007-07	Soil	09/20/06 11:06	09-21-2006 10:40
SE-B	6I21007-08	Soil	09/20/06 11:04	09-21-2006 10:40

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Plains All American EH & S	Project: 8 inch Moore to Jal #1	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10270	
Midland TX, 79706-4476	Project Manager: Camille Reynolds	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NW-A (6I21007-01) Soil									
Carbon Ranges C6-C12	**J [3.50]**	10.0	mg/kg dry	1	EI62502	09/22/06	09/23/06	EPA 8015M	J
Carbon Ranges C12-C28	**242**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**64.5**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**306**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*96.2 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*123 %*	*70-130*		"	"	"	"	
NE-A (6I21007-02) Soil									
Carbon Ranges C6-C12	**J [3.84]**	10.0	mg/kg dry	1	EI62502	09/22/06	09/23/06	EPA 8015M	J
Carbon Ranges C12-C28	**365**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**85.4**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**450**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*96.0 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*126 %*	*70-130*		"	"	"	"	
SW-A (6I21007-03) Soil									
Carbon Ranges C6-C12	**J [3.41]**	10.0	mg/kg dry	1	EI62502	09/22/06	09/23/06	EPA 8015M	J
Carbon Ranges C12-C28	**168**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**49.1**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**217**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*97.8 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*124 %*	*70-130*		"	"	"	"	
SE-A (6I21007-04) Soil									
Carbon Ranges C6-C12	**J [2.73]**	10.0	mg/kg dry	1	EI62502	09/22/06	09/23/06	EPA 8015M	J
Carbon Ranges C12-C28	**211**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**46.9**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**258**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*93.0 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*120 %*	*70-130*		"	"	"	"	

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

Project: 8 inch Moore to Jal #1
Project Number: 2002-10270
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NW-B (6I21007-05) Soil									
Carbon Ranges C6-C12	**J [3.81]**	10.0	mg/kg dry	1	EI62502	09/22/06	09/23/06	EPA 8015M	J
Carbon Ranges C12-C28	**116**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**31.0**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**147**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*95.0 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*122 %*	*70-130*		"	"	"	"	
NE-B (6I21007-06) Soil									
Carbon Ranges C6-C12	**J [4.33]**	10.0	mg/kg dry	1	EI62502	09/22/06	09/23/06	EPA 8015M	J
Carbon Ranges C12-C28	**170**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**40.5**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**210**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*116 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*146 %*	*70-130*		"	"	"	"	*S-04*
SW-B (6I21007-07) Soil									
Carbon Ranges C6-C12	**J [2.88]**	10.0	mg/kg dry	1	EI62502	09/22/06	09/23/06	EPA 8015M	J
Carbon Ranges C12-C28	**175**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**49.9**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**225**	10.0	"	"	"	"	"	"	S-04
Surrogate: 1-Chlorooctane		*99.2 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*130 %*	*70-130*		"	"	"	"	
SE-B (6I21007-08) Soil									
Carbon Ranges C6-C12	**J [2.91]**	10.0	mg/kg dry	1	EI62502	09/22/06	09/23/06	EPA 8015M	J
Carbon Ranges C12-C28	**144**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**42.5**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**186**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*97.6 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*124 %*	*70-130*		"	"	"	"	

Plains All American EH & S	Project: 8 inch Moore to Jal #1	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10270	
Midland TX, 79706-4476	Project Manager: Camille Reynolds	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NW-A (6I21007-01) Soil									
% Moisture	**11.4**	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
NE-A (6I21007-02) Soil									
% Moisture	**8.8**	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
SW-A (6I21007-03) Soil									
% Moisture	**12.4**	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
SE-A (6I21007-04) Soil									
% Moisture	**10.8**	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
NW-B (6I21007-05) Soil									
% Moisture	**12.5**	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
NE-B (6I21007-06) Soil									
% Moisture	**14.3**	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
SW-B (6I21007-07) Soil									
% Moisture	**11.4**	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
SE-B (6I21007-08) Soil									
% Moisture	**11.3**	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	

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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 EI62502 - Solvent Extraction (GC)										
Blank (EI62502-BLK1)				Prepared: 09/22/06 Analyzed: 09/23/06						
Carbon Ranges C6-C12	ND	10.0	mg/kg wet							
Carbon Ranges C12-C28	ND	10.0	"							
Carbon Ranges C28-C35	ND	10.0	"							
Total Hydrocarbons	ND	10.0	"							
Surrogate: 1-Chlorooctane	*53.4*		*mg/kg*	*50.0*		*107*	*70-130*			
Surrogate: 1-Chlorooctadecane	*64.7*		*"*	*50.0*		*129*	*70-130*			
LCS (EI62502-BS1)				Prepared: 09/22/06 Analyzed: 09/23/06						
Carbon Ranges C6-C12	569	10.0	mg/kg wet	500		114	75-125			
Carbon Ranges C12-C28	422	10.0	"	500		84.4	75-125			
Carbon Ranges C28-C35	ND	10.0	"	0.00			75-125			
Total Hydrocarbons	991	10.0	"	1000		99.1	75-125			
Surrogate: 1-Chlorooctane	*59.6*		*mg/kg*	*50.0*		*119*	*70-130*			
Surrogate: 1-Chlorooctadecane	*64.6*		*"*	*50.0*		*129*	*70-130*			
LCS Dup (EI62502-BSD1)				Prepared: 09/22/06 Analyzed: 09/25/06						
Carbon Ranges C6-C12	535	10.0	mg/kg wet	500		107	75-125	6.16	20	
Carbon Ranges C12-C28	486	10.0	"	500		97.2	75-125	14.1	20	
Carbon Ranges C28-C35	ND	10.0	"	0.00			75-125		20	
Total Hydrocarbons	1020	10.0	"	1000		102	75-125	2.88	20	
Surrogate: 1-Chlorooctane	*58.8*		*mg/kg*	*50.0*		*118*	*70-130*			
Surrogate: 1-Chlorooctadecane	*49.8*		*"*	*50.0*		*99.6*	*70-130*			
Calibration Check (EI62502-CCV1)				Prepared: 09/22/06 Analyzed: 09/23/06						
Carbon Ranges C6-C12	221		mg/kg	250		88.4	80-120			
Carbon Ranges C12-C28	221		"	250		88.4	80-120			
Total Hydrocarbons	442		"	500		88.4	80-120			
Surrogate: 1-Chlorooctane	*58.1*		*"*	*50.0*		*116*	*70-130*			
Surrogate: 1-Chlorooctadecane	*49.4*		*"*	*50.0*		*98.8*	*70-130*			

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

Project: 8 inch Moore to Jal #1
Project Number: 2002-10270
Project Manager: Camille Reynolds

Fax: (432) 687-4914

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI62201 - General Preparation (Prep)										
Blank (EI62201-BLK1)				Prepared: 09/21/06 Analyzed: 09/22/06						
% Solids	99.8		%							
Duplicate (EI62201-DUP1)		**Source: 6I21001-01**		Prepared: 09/21/06 Analyzed: 09/22/06						
% Solids	90.3		%		90.4			0.111	20	

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
J	Detected but below the Reporting 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 weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By:  Date: 9/26/2006

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.

Environmental Labs of Texas

Chain of Custody Form

12600 West I-20 East, Odessa, TX 79763
(432) 563-1800 FAX: (432) 563-1713

Company Name	Llano-Permian Environmental
LPE Project Manager	Ron Roumsaville
Mailing Address	318 E. Taylor Street
City, State, Zip	Hobbs, NM
LPE Phone#/Fax#	505-393-4261 / 505-393-4658
Client Company	PAAP / Camille Reynolds
Facility Name	8" Moore to Jal #1 / 2002-10270
Project Reference	LBSPLAINS007SPL
LPE Sampler Name	Camilo Chavez

Bill To

PLAINS ALL AMERICAN PIPELINE, L.P.

Attn: ENV Accounts Payable
PO Box 4648,
Houston, TX 77210-4648

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	BTEX 8021B	TPH 8015M	CHLORIDES (Cl^-)	SULFATES (SO_4^{2-})	pH	TCLP	OTHER >>>	PAH	TPH 1005		NORM	
01	1 NW-A	C	1			X					X		10-20-06	10:45		X										
02	2 NE-A	C	1			X					X		10-20-06	10:50		X										
03	3 SW-A	C	1			X					X		10-20-06	10:52		X										
04	4 SE-A	C	1			X					X		10-20-06	10:55		X										
05	5 NW-B	C	1			X					X		10-20-06	10:59		X										
06	6 NE-B	C	1			X					X		10-20-06	11:02		X										
07	7 SW-B	C	1			X					X		10-20-06	11:06		X										
08	8 SE-B	C	1			X					X		10-20-06	11:08		X										
	9																									
	10																									

Sampler Relinquished: Camilo Chavez	Date: 10-21-06 Time: 10:20	Received By:	E-mail results to: jgraham@llano-permian.com
Relinquished by:	Date: 10/21/06 Time: 10:40	Received By: (lab staff)	REMARKS: 3 @ 40z glass Seals/Label
Delivered by:	Sample Cool & Intact: (Yes) No	Checked By:	

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Plains

Date/ Time: 9/21/06 10:40

Lab ID # : 1CE21007

Initials: CK

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	3.0 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Eb Taylor
Talon LPE-Hobbs
318 E Taylor
Hobbs, TX, 88240

Report Date: February 2, 2007

Work Order: 7013108

Project Location: Lea County, NM
Project Name: Moore to Jal #1
Project Number: Plains 007SPL
SRS #: 2002-10270

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
115093	NE WALL	SOIL	2007-01-30	06:58	2007-01-31
115094	SE WALL	SOIL	2007-01-30	07:07	2007-01-31

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Analytical Report

Sample: 115093 - NE WALL

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	34163	Date Analyzed:	2007-01-31	Analyzed By:	ss
Prep Batch:	29648	Sample Preparation:		Prepared By:	ss

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		**0.0154**	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		**0.0847**	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.01	mg/Kg	1	1.00	101	69 - 113
4-Bromofluorobenzene (4-BFB)		1.03	mg/Kg	1	1.00	103	63.4 - 121

Sample: 115093 - NE WALL

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	34190	Date Analyzed:	2007-02-01	Analyzed By:	WR
Prep Batch:	29667	Sample Preparation:	2007-01-31	Prepared By:	WR

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		147	mg/Kg	1	150	98	70 - 130

Sample: 115093 - NE WALL

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	34155	Date Analyzed:	2007-01-31	Analyzed By:	ss
Prep Batch:	29636	Sample Preparation:		Prepared By:	ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**1.20**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.824	mg/Kg	1	1.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)		1.13	mg/Kg	1	1.00	113	70 - 130

Sample: 115094 - SE WALL

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	34163	Date Analyzed:	2007-01-31	Analyzed By:	ss
Prep Batch:	29648	Sample Preparation:		Prepared By:	ss

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.0100		mg/Kg	1	0.0100
Toluene		<0.0100		mg/Kg	1	0.0100
Ethylbenzene		<0.0100		mg/Kg	1	0.0100
Xylene		**0.0447**		mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.996	mg/Kg	1	1.00	100	69 - 113
4-Bromofluorobenzene (4-BFB)		1.01	mg/Kg	1	1.00	101	63.4 - 121

Sample: 115094 - SE WALL

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	34190	Date Analyzed:	2007-02-01	Analyzed By:	WR
Prep Batch:	29667	Sample Preparation:	2007-01-31	Prepared By:	WR

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		<50.0		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		106	mg/Kg	1	150	71	70 - 130

Sample: 115094 - SE WALL

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	34155	Date Analyzed:	2007-01-31	Analyzed By:	ss
Prep Batch:	29636	Sample Preparation:		Prepared By:	ss

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		<1.00		mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.812	mg/Kg	1	1.00	81	70 - 130
4-Bromofluorobenzene (4-BFB)		1.12	mg/Kg	1	1.00	112	70 - 130

Method Blank (1) QC Batch: 34155

QC Batch:	34155	Date Analyzed:	2007-01-31	Analyzed By:	ss
Prep Batch:	29636	QC Preparation:	2007-01-30	Prepared By:	ss

Parameter	Flag	MDL Result	Units	RL
GRO		<0.829	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.912	mg/Kg	1	1.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)		0.964	mg/Kg	1	1.00	96	70 - 130

Method Blank (1) QC Batch: 34163

QC Batch: 34163 | Date Analyzed: 2007-01-31 | Analyzed By: ss
Prep Batch: 29648 | QC Preparation: 2007-01-30 | Prepared By: ss

Parameter	Flag	MDL Result	Units	RL
Benzene	[1]	<0.00270	mg/Kg	0.01
Toluene		<0.00320	mg/Kg	0.01
Ethylbenzene		<0.00340	mg/Kg	0.01
Xylene		<0.0104	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.01	mg/Kg	1	1.00	101	69 - 113
4-Bromofluorobenzene (4-BFB)		0.897	mg/Kg	1	1.00	90	63.4 - 121

Method Blank (1) QC Batch: 34190

QC Batch: 34190 | Date Analyzed: 2007-02-01 | Analyzed By: WR
Prep Batch: 29667 | QC Preparation: 2007-02-01 | Prepared By: WR

Parameter	Flag	MDL Result	Units	RL
DRO		<15.4	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		158	mg/Kg	1	150	105	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 34155 | Date Analyzed: 2007-01-31 | Analyzed By: ss
Prep Batch: 29636 | QC Preparation: 2007-01-30 | Prepared By: ss

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	8.33	mg/Kg	1	10.0	<0.829	83	70 - 130

[1]SPECIAL- A MS/MSD was run for QC Batch 34163 but not included because sample that was spiked had to be re-analyzed. LCS/LCSD are used as the spiked samples for this batch. •

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	8.84	mg/Kg	1	10.0	<0.829	88	70 - 130	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.18	1.13	mg/Kg	1	1.00	118	113	70 - 130
4-Bromofluorobenzene (4-BFB)	1.06	1.12	mg/Kg	1	1.00	106	112	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 34163 | Date Analyzed: 2007-01-31 | Analyzed By: ss
Prep Batch: 29648 | QC Preparation: 2007-01-30 | Prepared By: ss

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.05	mg/Kg	1	1.00	<0.00270	105	70 - 130
Toluene	1.03	mg/Kg	1	1.00	<0.00320	103	70 - 130
Ethylbenzene	1.04	mg/Kg	1	1.00	<0.00340	104	70 - 130
Xylene	3.14	mg/Kg	1	3.00	<0.0104	105	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.04	mg/Kg	1	1.00	<0.00270	104	70 - 130	1	20
Toluene	1.04	mg/Kg	1	1.00	<0.00320	104	70 - 130	1	20
Ethylbenzene	1.04	mg/Kg	1	1.00	<0.00340	104	70 - 130	0	20
Xylene	3.13	mg/Kg	1	3.00	<0.0104	104	70 - 130	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.973	0.958	mg/Kg	1	1.00	97	96	69 - 113
4-Bromofluorobenzene (4-BFB)	1.01	1.00	mg/Kg	1	1.00	101	100	63.4 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 34190 | Date Analyzed: 2007-02-01 | Analyzed By: WR
Prep Batch: 29667 | QC Preparation: 2007-02-01 | Prepared By: WR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	256	mg/Kg	1	250	<15.4	102	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	258	mg/Kg	1	250	<15.4	103	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	158	162	mg/Kg	1	150	105	108	70 - 130

Matrix Spike (MS-1) Spiked Sample: 115093

QC Batch: 34155 | Date Analyzed: 2007-01-31 | Analyzed By: ss
Prep Batch: 29636 | QC Preparation: 2007-01-30 | Prepared By: ss

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	13.7	mg/Kg	1	10.0	1.2032	125	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	12.3	mg/Kg	1	10.0	1.2032	111	70 - 130	11	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT) [2] [3]	0.653	0.644	mg/Kg	1	1	65	64	70 - 130
4-Bromofluorobenzene (4-BFB)	1.22	1.24	mg/Kg	1	1	122	124	70 - 130

Matrix Spike (MS-1) Spiked Sample: 115086

QC Batch: 34190 | Date Analyzed: 2007-02-01 | Analyzed By: WR
Prep Batch: 29667 | QC Preparation: 2007-02-01 | Prepared By: WR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	310	mg/Kg	1	250	<15.4	124	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	234	mg/Kg	1	250	<15.4	94	70 - 130	28	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	178	146	mg/Kg	1	150	119	97	70 - 130

Standard (ICV-1)

QC Batch: 34155 | Date Analyzed: 2007-01-31 | Analyzed By: ss

[2]Surrogate out due to peak interference.
[3]Surrogate out due to peak interference.

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.913	91	85 - 115	2007-01-31

Standard (CCV-1)

QC Batch: 34155 Date Analyzed: 2007-01-31 Analyzed By: ss

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.01	101	85 - 115	2007-01-31

Standard (ICV-1)

QC Batch: 34163 Date Analyzed: 2007-01-31 Analyzed By: ss

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.105	105	85 - 115	2007-01-31
Toluene		mg/Kg	0.100	0.105	105	85 - 115	2007-01-31
Ethylbenzene		mg/Kg	0.100	0.105	105	85 - 115	2007-01-31
Xylene		mg/Kg	0.300	0.318	106	85 - 115	2007-01-31

Standard (CCV-1)

QC Batch: 34163 Date Analyzed: 2007-01-31 Analyzed By: ss

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.101	101	85 - 115	2007-01-31
Toluene		mg/Kg	0.100	0.101	101	85 - 115	2007-01-31
Ethylbenzene		mg/Kg	0.100	0.100	100	85 - 115	2007-01-31
Xylene		mg/Kg	0.300	0.302	101	85 - 115	2007-01-31

Standard (ICV-1)

QC Batch: 34190 Date Analyzed: 2007-02-01 Analyzed By: WR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	233	93	85 - 115	2007-02-01

Standard (CCV-1)

QC Batch: 34190 Date Analyzed: 2007-02-01 Analyzed By: WR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	225	90	85 - 115	2007-02-01

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296
email: lab@traceanalysis.com

TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #: 7013108

Company Name: Talon LPE
Phone #: (505) 393-4261
Address: (Street, City, Zip) 318 E. Taylor St. Hobbs NM 88240
Fax #: (505) 393-4658
Contact Person: EG Taylor
E-mail: etaylor@talonlpe.com
Invoice to: (If different from above) Plains Attn: Camille Reynolds
SRS# 2002-10270
Project #: Plains 007SPL
Project Name: Moore to Jal #1
Project Location (including state): Lea County, NM
Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
115093	NE Wall	1			X							X		01/30/07	6:58
115094	SE Wall	1			X							X		01/30/07	7:07

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C / 625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Turn Around Time if different from standard	Hold
X	X	X	X															
X	X	X	X															

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	01/30/07	8:00		1/30/07	0900
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	1/31/07	0725	Josh Jamy	1/31/07	9:05
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

LAB USE ONLY
Intact Y / N
Headspace Y / N
Temp 2.1 °C
Log-in-Review

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Carrier #

APPENDIX D

Photograph Documentation

TALON/LPE

Client: Plains All American
Location: 8" Moore to Jal #1
Lea County, New Mexico

Photographic Documentation

Prepared by: Marc Stroope
Photographer: Talon/LPE
Project Number: PLAINS007SPL

Photograph No. 1

Direction: Northeast

Description: Surface staining.

Photograph No. 2

Direction: Northwest

Description:
Excavation activities.

Photograph No. 3

Direction: East

Description:
View of excavation.

Photograph No. 4

Direction: Northeast

Description:
View of excavation.

Photograph No. 5

Direction: East

Description: View of backfill and site restoration.

Photograph No. 6

Direction: North

Description: View of backfill and site restoration.

Photograph No. 7

Direction: South

Description: View of backfill and site restoration.

Photograph No. 8

Direction: West

Description: View of backfill and site restoration.

Photograph No. 9

Direction: Southwest

Description:
View of backfill and site restoration.

Photograph No. 10

Direction: Northwest

Description:
View of backfill and site restoration.

APPENDIX E

NMOCD C-141's

Initial C-141 Report
Final C-141 Report

EOTT Site Information and Metrics	**Incident Date:** 10-18-02 @ 10:00 AM	**NMOCD Notified:** 10-18-02 @ 11:00 AM Pat McCasland EPI left message with Paul Sheeley and sent page to the "ON-CALL" representative

SITE: 8" Moore to Jal #1	**Assigned Site Reference #:** 2002-10270
Company: EOTT	
Street Address: PO Box 1660	
Mailing Address: 5805 East Highway 80	
City, State, Zip: Midland, Texas 79702	
Representative: Frank Hernandez	
Representative Telephone: 915.638.3799	
Telephone:	
Fluid volume released (bbls): 200 bbls	**Recovered (bbls):** 0 bbls
>25 bbls: Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days. (Also applies to unauthorized releases >500 mcf Natural Gas)	
5-25 bbls: Submit form C-141 within 15 days (Also applies to unauthorized releases of 50-500 mcf Natural Gas)	
Leak, Spill, or Pit (LSP) Name: 8" Moore to Jal #1	
Source of contamination: 8" Steel Pipeline	
Land Owner, i.e., BLM, ST, Fee, Other: State of New Mexico	
LSP Dimensions: ~200' x 40'	
LSP Area: 8,000 sqft ft^2	
Location of Reference Point (RP):	
Location distance and direction from RP:	
Latitude: 32° 50' 12.36"N	
Longitude: 103° 15' 26.234"W.	
Elevation above mean sea level:	
Feet from South Section Line:	
Feet from West Section Line:	
Location- Unit or ¼¼: SE¼ of the NW¼	**Unit Letter:** F
Location- Section: 16	
Location- Township: T17S	
Location- Range: R37E	
Surface water body within 1000 ' radius of site: none	
Surface water body within 1000 ' radius of site:	
Domestic water wells within 1000' radius of site: none	
Domestic water wells within 1000' radius of site:	
Agricultural water wells within 1000' radius of site: none	
Agricultural water wells within 1000' radius of site:	
Public water supply wells within 1000' radius of site: none	
Public water supply wells within 1000' radius of site:	
Depth from land surface to ground water (DG): ~66 feet	
Depth of contamination (DC): ?	
Depth to ground water (DG – DC = DtGW): <50 feet	

1. Ground Water	**2. Wellhead Protection Area**	**3. Distance to Surface Water Body**
If Depth to GW <50 feet: *20 points*	If <1000' from water source, or;<200' from private domestic water source: *20 points*	<200 horizontal feet: *20 points*
If Depth to GW 50 to 99 feet: *10 points*		200-100 horizontal feet: *10 points*
If Depth to GW >100 feet: *0 points*	If >1000' from water source, or; >200' from private domestic water source: *0 points*	>1000 horizontal feet: *0 points*
Ground water Score = 10	***Wellhead Protection Area Score= 0***	***Surface Water Score= 0***

Site Rank (1+2+3) = 10

Total Site Ranking Score and Acceptable Concentrations

Parameter	>19	**10-19**	0-9
Benzene[1]	10 ppm	**10 ppm**	10 ppm
BTEX[1]	50 ppm	**50 ppm**	50 ppm
TPH	100 ppm	**1,000 ppm**	5,000 ppm

[1]100 ppm field VOC headspace measurement may be substituted for lab analysis

PLAINS ALL AMERICAN

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Plains All American Pipeline, L. P. (formerly Link Energy and EOTT)	**Contact:** Frank Hernandez
Address: PO Box 1660 5805 East Highway 80 Midland, Texas 79702	**Telephone No.:** 915.638.3799
Facility Name: 8" Moore to Jal #1	**Facility Type:** 8" Steel Pipeline

Surface Owner: State of New Mexico	**Mineral Owner:**	**Lease No.:**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	
16	16	T17S	R37E					**County:** Lea **Lat.** 32° 50' 12.36"N **Lon.** 103° 15' 26.234"W

NATURE OF RELEASE

Type of Release: Crude Oil	**Volume of Release:** 200 bbls barrels	**Volume Recovered:** 0 bbls barrels
Source of Release: 8" Steel Pipeline	**Date and Hour of Occurrence:** EOTT	**Date and Hour of Discovery:** 10-18-02 @ 8:00 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?** Paul Sheeley	
By Whom? Pat McCasland, EPI	**Date and Hour** 10-18-02 @ 11:00 AM Pat McCasland EPI left message with Paul Sheeley and sent page to the "ON-CALL" representative	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse:** NA	

If a Watercourse was Impacted, Describe Fully.* NA

Describe Cause of Problem and Remedial Action Taken.* 8" Steel Pipeline Site will be delineated to determine the vertical and horizontal extents of contamination. Contaminated soil will be blended on site or disposed of.

Describe Area Affected and Cleanup Action Taken.* 8,000 sqft ~200' x 40' Site will be delineated to determine the vertical and horizontal extents of contamination. Contaminated soil will be blended on site or disposed of. Remedial Goals: TPH 8015m = 1000 mg/Kg, Benzene = 10 mg/Kg, and BTEX, i.e., the mass sum of Benzene, Ethyl Benzene, Toluene, and Xylenes = 50 mg/Kg.

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

Signature:	**OIL CONSERVATION DIVISION**	
Printed Name: Frank Hernandez	**Approved by District Supervisor:**	
Title: District Environmental Supervisor	**Approval Date:**	**Expiration Date:**
Date: October 23, 2003 **Phone:** 915.638.3799	**Conditions of Approval:**	Attached ☐

* Attach Additional Sheets If Necessary

8" Moore to Jal #1
2002-10270

PLAINS ALL AMERICAN

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR **1R-0380** ☐ Initial Report ☒ Final Report

Name of Company: Plains All American Pipeline, L. P. (formerly Link Energy and EOTT)	**Contact:** Camille Reynolds
Address: 3112 W. US Hwy 82, Lovington, NM 88260	**Telephone No.:** 505.441.0965
Facility Name: 8" Moore to Jal #1	**Facility Type:** 8" Steel Pipeline

Surface Owner:	**Mineral Owner:**	**Lease No.:**
State of New Mexico		

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	
16	16	T17S	R37E					**County:** Lea **Lat.** 32° 50' 12.36"N **Lon.** 103° 15' 26.234"W

NATURE OF RELEASE

Type of Release: Crude Oil	**Volume of Release:** 200 bbls barrels	**Volume Recovered:** 0 bbls barrels
Source of Release: 8" Steel Pipeline	**Date and Hour of Occurrence:** EOTT	**Date and Hour of Discovery:** 10-18-02 @ 8:00 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?** Paul Sheeley	
By Whom? Pat McCasland, EPI	**Date and Hour** 10-18-02 @ 11:00 AM Pat McCasland EPI left message with Paul Sheeley and sent page to the "ON-CALL" representative	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse:** NA	

If a Watercourse was Impacted, Describe Fully.* NA

Describe Cause of Problem and Remedial Action Taken.* 8" Steel Pipeline Site will be delineated to determine the vertical and horizontal extents of contamination. Contaminated soil will be blended on site or disposed of.

Describe Area Affected and Cleanup Action Taken.* The crude oil release was excavated: impacted soil was placed adjacent to the excavation, confirmation soil samples were collected from the floor & walls of the excavation. Once confirmation soil samples were below NMOCD regulatory standards, blending of the stockpiled materials was conducted, soil samples were collected from the blending areas, once the blending material was below NMOCD standards, backfilling of the excavation was conducted, restoring the site to natural grade.
SEE ATTACHED Talon/LPE SOILS CLOSURE REPORT, DATED MAY 29, 2007, WITH ATTACHMENTS FOR DETAILS OF REMEDIAL ACTIVITIES CONDUCTED.

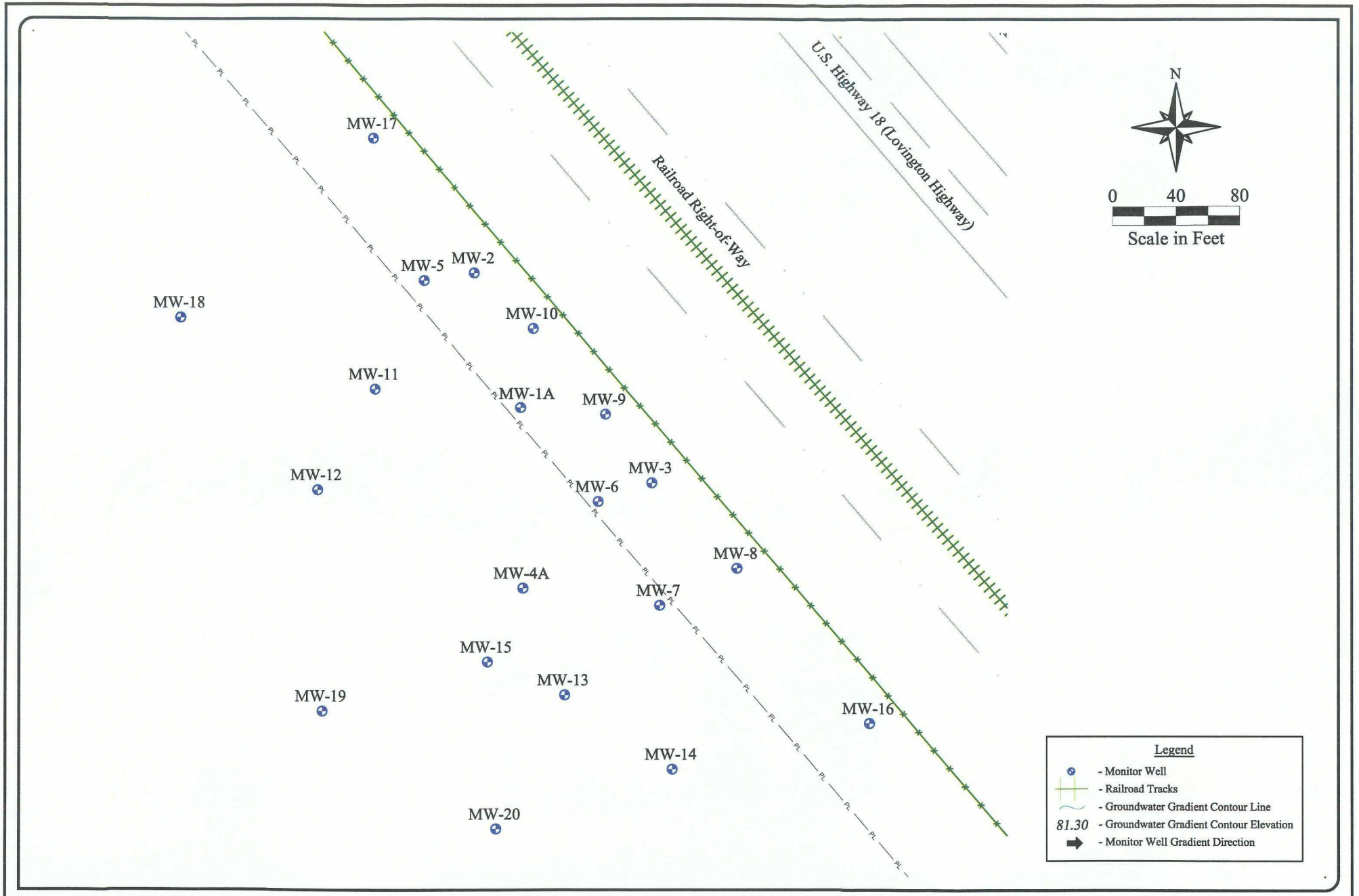
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger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

Signature: Camille Reynolds	**OIL CONSERVATION DIVISION**
Printed Name: Camille Reynolds	**Approved by District Supervisor:**
Title: Remediation Coordinator	**Approval Date:** / **Expiration Date:**
Date: June 15, 2007 **Phone:** 505.441.0965	**Conditions of Approval:** / Attached ☐

8" Moore to Jal #1

* Attach Additional Sheets If Necessary

2002-10270



TALON LPE

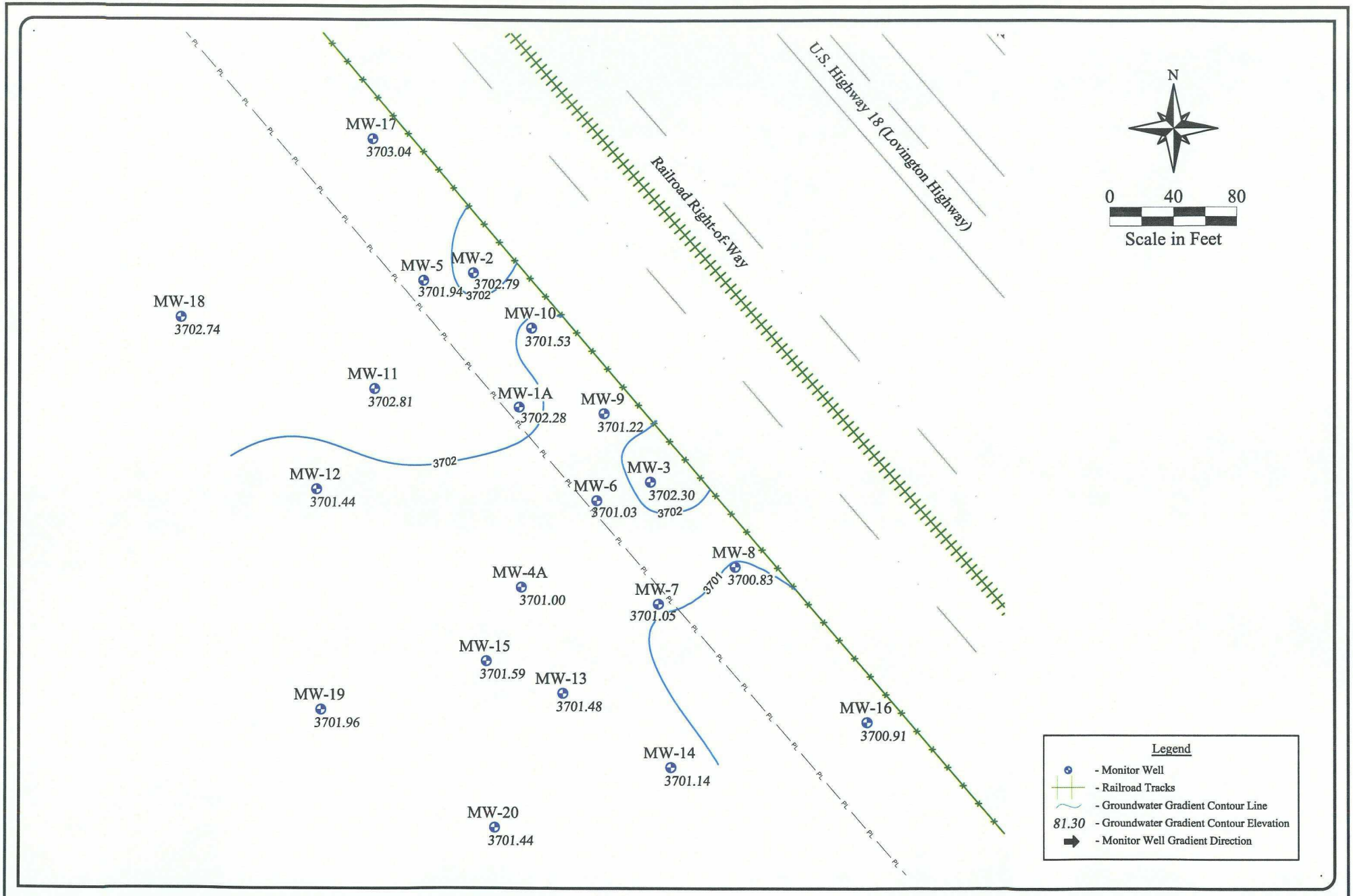
Date: 01/31/2008
Scale: 1" = 80'
Drawn By: SJA

8" Moore to Jal #1

9.2 Miles SE of Lovington, NM

Lea County, New Mexico

Attachment 1 - Site Plan with Monitoring Well Locations



TALON LPE

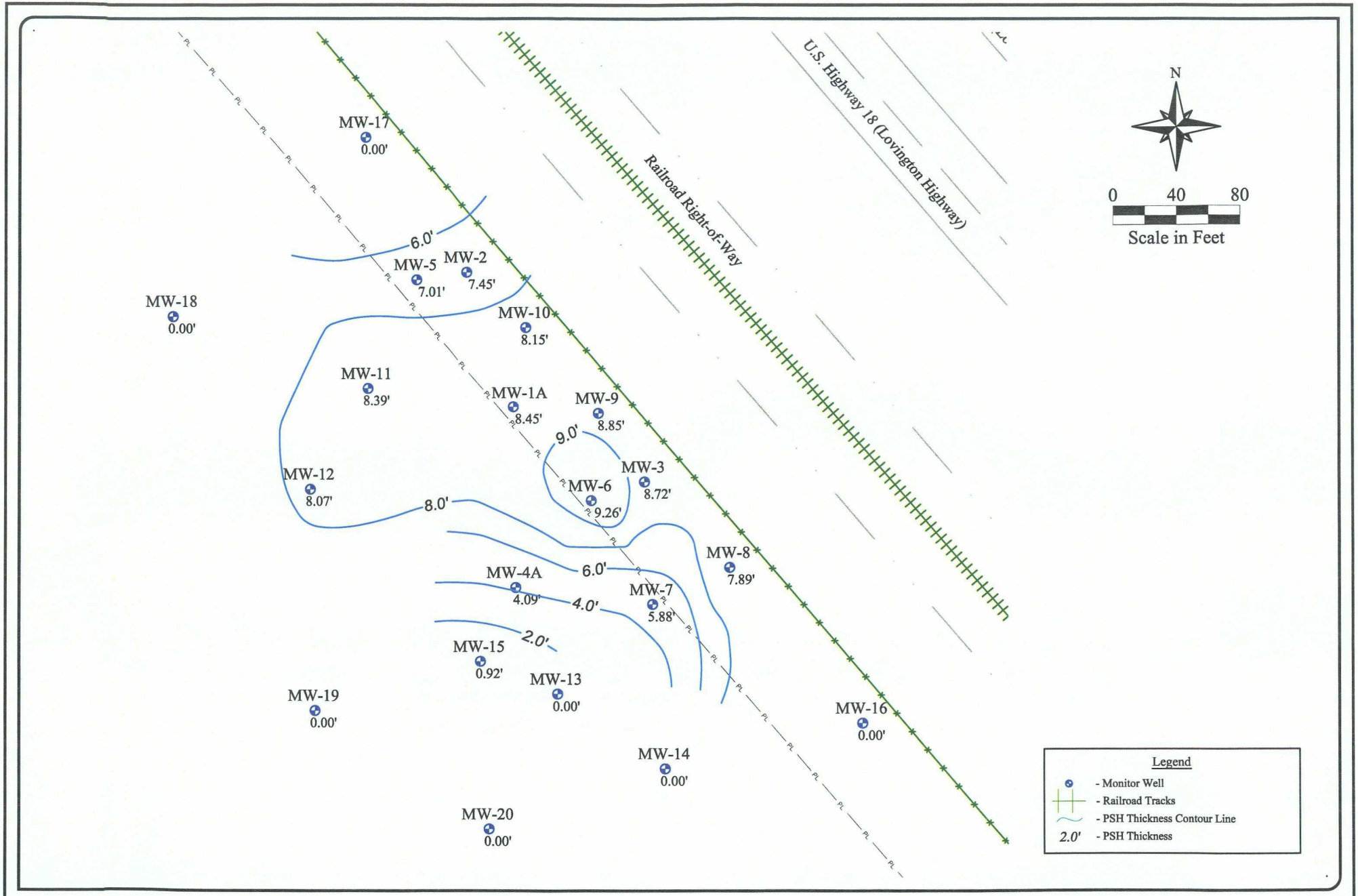
Date:	02/05/2008
Scale:	1" = 80'
Drawn By:	SJA

8" Moore to Jal #1

9.2 Miles SE of Lovington, NM

Lea County, New Mexico

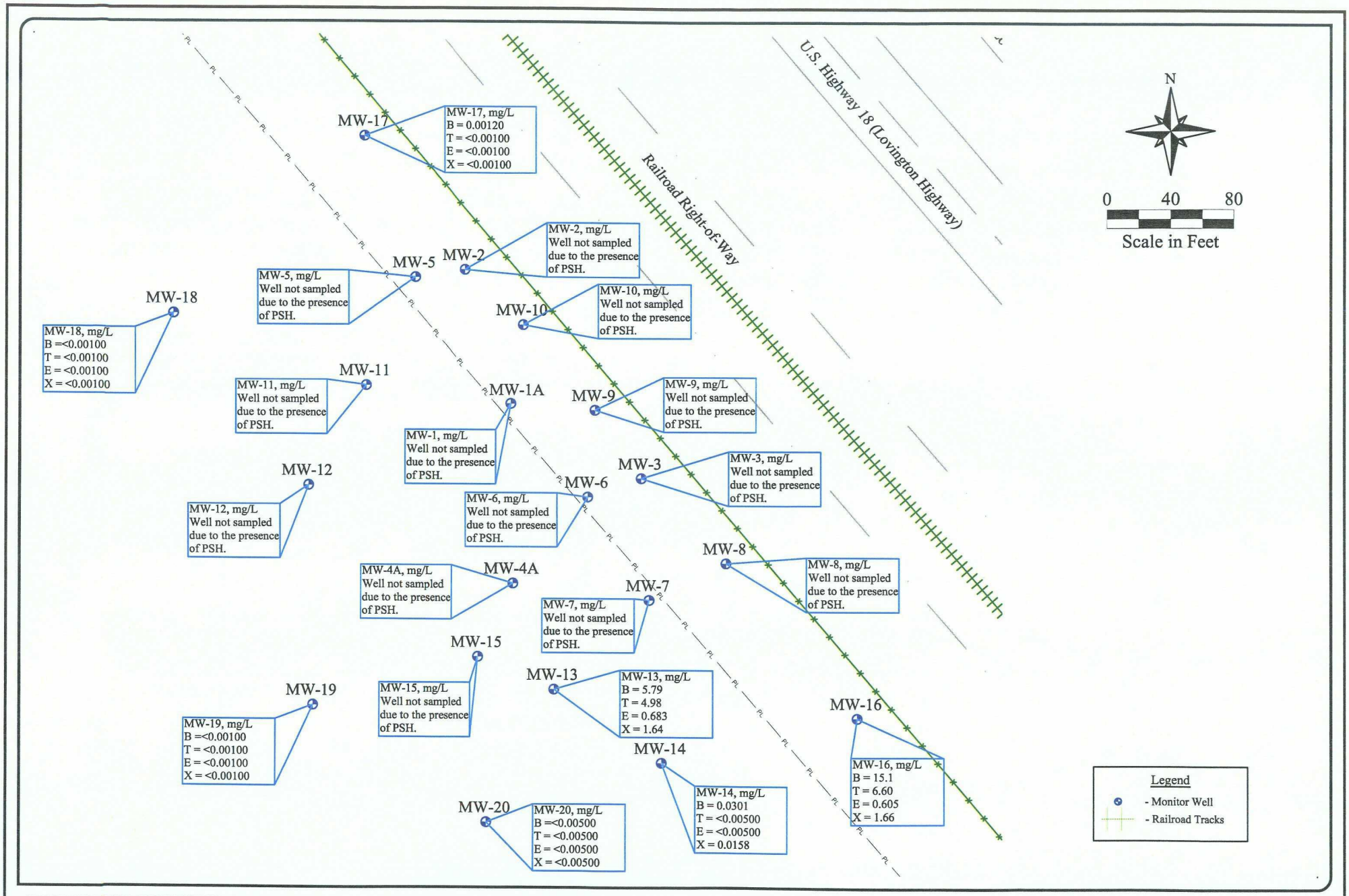
Figure 2d - Groundwater Gradient Map (12/17/2007)



TALON LPE

Date:	01/29/2008
Scale:	1" = 80'
Drawn By:	SJA

8" Moore to Jal #1
9.2 Miles SE of Lovington, NM
Lea County, New Mexico
Figure 3d - PSH Plume (12/17/2007)



TALON LPE

Date:	01/31/2008
Scale:	1" = 80'
Drawn By:	SJA

8" Moore to Jal #1

9.2 Miles SE of Lovington, NM

Lea County, New Mexico

Figure 4d - Groundwater Concentration Map, (12/19/2007)

TALONLPE

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
PLAINS PIPELINE, L.P.
8" Moore to Jal #1
LEA COUNTY, NEW MEXICO - SRS# 2002-10270
Talon/LPE Project Number PLAINS007SPL

All concentrations are in mg/L

Sample Location	Sample Date	Benzene	Ethyl-benzene	Total Xylenes	Toluene
MW-1A		Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-2		Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-3		Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-4A	11/08/07	Well Installation			
	12/19/07	Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-5	11/06/07	Well Installation			
	12/19/07	Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-6	11/06/07	Well Installation			
	12/19/07	Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-7	11/06/07	Well Installation			
	12/19/07	Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-8	11/06/07	Well Installation			
	12/19/07	Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-9	11/07/07	Well Installation			
	12/19/07	Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-10	11/07/07	Well Installation			
	12/19/07	Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-11	11/07/07	Well Installation			
	12/19/07	Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-12	11/07/07	Well Installation			
	12/19/07	Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-13	11/08/07	Well Installation			
	12/19/07	**5.79**	0.683	**1.64**	**4.98**
MW-14	11/08/07	Well Installation			
	12/19/07	**0.0301**	<0.00500	0.0158	<0.00500
MW-15	11/08/07	Well Installation			
	12/19/07	Not sampled Due to Presence of Phase Separated Hydrocarbons			
MW-16	11/09/07	Well Installation			
	12/19/07	**15.1**	0.605	**1.66**	**6.60**

TALONLPE

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
PLAINS PIPELINE, L.P.
8" Moore to Jal #1
LEA COUNTY, NEW MEXICO - SRS# 2002-10270
Talon/LPE Project Number PLAINS007SPL

All concentrations are in mg/L

Sample Location	Sample Date	Benzene	Ethyl-benzene	Total Xylenes	Toluene
MW-17	11/13/07	Well Installation			
	12/20/07	0.00120	<0.00100	<0.00100	<0.00100
MW-18	11/13/07	Well Installation			
	12/20/07	<0.00100	<0.00100	<0.00100	<0.00100
MW-19	11/13/07	Well Installation			
	12/20/07	<0.00100	<0.00100	<0.00100	<0.00100
MW-20	11/13/07	Well Installation			
	12/20/07	<0.00500	<0.00500	<0.00500	<0.00500
NMWQCC Remedial Limits		0.010	0.750	0.620	0.750

[1] ***Bolded*** *values are in excess of the NMWQCC Remediation Thresholds*