# 1R - 380

# REPORT

# DATE:

5-29-07

2002-102 10 NM

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

1R-380 Report 5-29-07

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

Prepared for:

333 Clay Street

Suite 1600

PLAINS PIPELINE, L.P.

Houston, Texas 77002



AMARILLO 921 North Bivins Amarillo, Texas 79107 Phone 806-467-0607 Fax 806-467-0622

AUSTIN 3003 Tom Gary Cove Building C-100 Round Rock, Texas 78664 Phone 512-989-3428 Fax 512-989-3487

MIDLAND #9 East Industrial Loop Midland, Texas 79701 Phone 432-522-2133 Fax 432-522-2180

NEW BRAUNFELS 707 N. Walnut Ave. Suite 208 New Braunfels, Texas 78/30 Phone 210-579-0235 Fax 210-568-2191

> TULSA 1439 East 4lst Street Tulsa, OK 74105 Phone 918-742-0871 Fax 918-742-0876

Prepared by:

#### Talon/LPE

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

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May 29, 2007

### 8" Moore to Jal #1 Soils Closure Report

Plains Pipeline, L.P. Houston, Texas

#### Talon/LPE PROJECT NO. PLAINS007SPL

Prepared by:

Marc Streope

Senior Project Manager

Kyle Waggoner, P. G.

Senior Project Manager

Talon/LPE # 9 E. Industrial Loop Midland, Texas 79701

May 2007

**Distribution List** 

	Title	Company or Agency	Mailing Address	e-mail
E	nvironmental Engineer	NMOCD	1220 South St. Francis Drive Santa Fe, NM 87505	bstone@state.nm.us
Щ.	nvironmental Engineer	NMOCD	1625 French Dr. Hobbs, NM 88231	lwjohnson@state.nm.us
	Field Operations	SLO	P.O. Box 1148 Santa Fe, NM 87504-1148	TK ostrubala@slo.state.nm.us
H	temediation Coordinator	Plains All American Pipeline	3112 West U.S. Hwy 82 Lovington, NM 88260	cjreynolds@paalp.com
Seni	or Environmental Specialist	Plains All American Pipeline	P. O. Box 4648 Houston, TX 77210-4648	jpdann@paalp.com
		Talon/LPE	318 East Taylor Street Hobbs, New Mexico 88240	mstroope@talonlpe.com

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

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#### **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:	<b>Ranking Score:</b>
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





## APPENDIX B

## Tables

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



#### 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)			605
SEGN10232DH1 (10.12)			505
SEGM10232DH1 (15-17)			305
SE8M10232BIII (13-17)			1 350
SESM10232BH1 (20-22)			1,550
SEON10232BH1 (25-27)			1,225
SEOW10232BH1 (30-32)	10/23/2002	BH-1	<u> </u>
SEOW10232DH1 (35-57)			1 592
SEOW10232BH1 (40-42)	,		1,585
SE8W10232BH1 (45-47)			589
SEOM10232DH1 (55-57)			309
SEON10232BH1 (55-57)			
SE8W10232BH1 (00-02)			1.6
$\frac{\text{SE8W102402BH2}(5-7)}{\text{SE8W102402BH2}(10, 12)}$	10/24/2002	BH_7	2.0
SEGM102402BH2 (10-12)	10/24/2002		2.9
SE8M102402BH2 (15-17)			1.6
SE8M102402BH3 (10-12)	10/24/2002	BH-3	2.0
SE8M102402BH3 (15-17)		DI C	1.3
SE8M102402BH3 (15-17)			46.4
SE8M102402BH4 (10-12)	10/24/2002	BH-4	225
SE8M102402D114 (15-12)	10.2.02002		33
SE8M102402BH4 (20-22)			NA
SE8M1024O2BH4 (25-27)			3.0
SE8M102402BH4 (30-32)	10/24/2002	BH-4	NA
SE8M102402BH4 (35-37)		-	1.7
SE8M102402BH4 (50-52)			NA
SE8M102502BH5 (5-7)			3.0
SE8M102502BH5 (10-12)			1.3
SE8M102502BH5 (15-17)	10/25/2002	BH-5	0.0
SE8M102502BH5 (25-27)			NA
SE8M102502BH5 (35-37)			NA
SE8M102502BH6 (5-7)			NA
SE8M102502BH6 (10-12)	10/25/2002	BH-6	NA
SE8M102502BH6 (15-17)			NA
NMOCD Remediation Guildelines	· · · · · · · · · · · · · · · · · · ·		100

<sup>1</sup>Bolded values are in excess of the NMOCD Remediation Thresholds

# TALONLPE

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

				Conc	entration				
		mg/Kg			mg/Kg				
Sample Designation	Date Sampled	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	0.0487					
EFE-018	1/17/2006	4,610	< 0.0250	0.4767					
SPN-019	1/17/2006	211	< 0.0250	< 0.0250					
SEW-001	1/17/2006	119	< 0.0250	< 0.0250					
EW-002	1/17/2006	<10	< 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 sat	npled			
SW-A	9/20/2006	217			BTEX not sar	npled			
SE-A	9/20/2006	258			BTEX not sar	npled			
NW-B	9/20/2006	147			BTEX not sat	npled			
NE-B	9/20/2006	210			BTEX not sat	npled			
SW-B	9/20/2006	225			BTEX not sat	npled			
SE-B	9/20/2006	186			BTEX not sat	mpled			
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 Gu	ildelines	1,000	10				50		

<sup>1</sup> Bolded values are in excess of the NMOCD Remediation Thresholds

## APPENDIX C

# Laboratory Analytical Data Sheets and Chain of Custody Documentation



# 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

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**

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
EFW-009 (6A18005-01) Soil					<u>.</u>				
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	J [0.0196]	0.0250	11	11		"		11	
Ethylbenzene	0.0420	0.0250	"	"	"		<sup>11</sup>	"	
Xylene (p/m)	0.0742	0.0250	"	"		"	· "	н	
Xylene (o)	J [0.0237]	0.0250	**	"	н	"		11	
Surrogate: a,a,a-Trifluorotoluene		94.0 %	80-1	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %	80-1	20	"	"	"	"	
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	IT		"	н	"	"	
Total Hydrocarbon nC6-nC35	3470	10.0	11	"	"	"	11	"	
Surrogate: 1-Chlorooctane		. 121 %	70-1	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		120 %	70-1	30	"	"	"	"	
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	**	"	"	н.	**		
Ethylbenzene	0.0263	0.0250	"		"	11	"	"	
Xylene (p/m)	0.0689	0.0250	"	"	"	"		н	*
Xylene (0)	ND	0.0250	"	"		п	"	"	
Surrogate: a,a,a-Trifluorotoluene		96.5 %	80-1	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.5 %	80-1	20	"	"	"	"	
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	n	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	2180	10.0	n		"	"	и	"	
Surrogate: 1-Chlorooctane		120 %	70-1	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		123 %	70-1	30	"	"	"	"	
EFW-011 (6A18005-03) Soil		<b></b>							
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	J [0.0136]	0.0250	"	н	"	0	**	"	
Ethylbenzene ·	0.0310	0.0250	11			"	н	"	
Xylene (p/m)	0.0689	0.0250		**	"	"	"	, "	
Xylene (0)	0.0363	0.0250	11	11	"	11	11	"	
Surrogate: a,a,a-Trifluorotoluene		92.0 %	80-1	20	"	"	v	"	
Surrogate: 4-Bromofluorobenzene		95.0 %	80-1	20	"	"	"	"	
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	"	**	"		It.	"	
Total Hydrocarbon nC6-nC35	3420	10.0		"	"	"	n	n	,

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 entirely,

with written approval of Environmental Lab of Texas.

Page 2 of 17

Plains All American EH & S		]	Project: 8 ir	nch Moore t		Fax: (432) 6	587-4914		
1301 S. County Road 1150 Midland TX, 70706, 4476		Project N	umber: 200	)2-10270 mille Deune	Ida				
whulanu 1 X, 79700-4470		Project M	anager: Car					·	
		O	ganics b	y GC					
		Environ	mental L	ab of Te	xas				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
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	"	- 11	**	55	
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		n	"	п	"	"	
Ethylbenzene	0.141	0.0250	0	и		"	п	"	
Xylene (p/m)	0.324	0.0250		n		"	п	**	
Xylene (0)	0.128	0.0250	"		"	n	"	"	
Surrogate: a,a,a-Trifluorotoluene		99.2 %	80-1	120	"	"	11	"	
Surrogate: 4-Bromofluorobenzene		115 %	80	120	"	"	"	11	
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		п	· •	11	"	0	
Total Hydrocarbon nC6-nC35	2970	10.0	11	п	н		*	n	
Surrogate: 1-Chlorooctane		122 %	70-1	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	н	n	n	"	•	53	
Ethylbenzene	0.0400	0.0250	"	11	"	"	"	11	
Xylene (p/m)	0.0567	0.0250	**	п	н	"	11	**	
Xylene (o)	ND	0.0250		"	"	"	"	n	
Surrogate: a,a,a-Trifluorotoluene		94.5 %	80-1	120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	80-1	120		"	11	"	
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	11		н	11	u	D.	
Total Hydrocarbon nC6-nC35	6880	10.0	**				"	85	
Surrogate: 1-Chlorooctane		123 %	70-1	130	"	"	"	"	
Surrogate: 1-Chlorooctadecane		113 %	70-1	130	"	"	"	"	

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

#### Organics by GC

#### **Environmental Lab of Texas**

• • • • • • • • • • • • • • • • • • •		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
EFE-014 (6A18005-06) Soil						<u> </u>			
Benzene	ND	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	ND	0.0250	и			н	n	11	
Ethylbenzene	0.0311	0.0250	"	"	"	"	"	**	
Xylene (p/m)	0.0724	0.0250	P	IT	н	"	н	**	
Xylene (o)	ND	0.0250	"		"	11	"	"	
Surrogate: a,a,a-Trifluorotoluene		91.2 %	80-1	20	u	"	11		
Surrogate: 4-Bromofluorobenzene		82.5 %	80-1	20	"	"	"	"	
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		0	н	"	11	•	
Total Hydrocarbon nC6-nC35	5350	10.0	13	11	и		"	**	
Surrogate: 1-Chlorooctane		118 %	70-1	30	"	"	"	n	
Surrogate: 1-Chlorooctadecane		114 %	70-1	30	"	11	"	"	
EFE-015 (6A18005-07) Soil									
Benzene	0.0274	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Foluene	0.0926	0.0250		"	"	"	"	11	
Ethylbenzene	0.151	0.0250	".		ч		U.	"	
Xylene (p/m)	0.561	0.0250	11	"	"	н	It	"	
Xylene (0)	0.198	0.0250	"	"	"	11	11		
Surrogate: a,a,a-Trifluorotoluene		105 %	80-1	20 ·	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		119 %	80-1	20	"	"	"	"	
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		"	11		н	u	
Total Hydrocarbon nC6-nC35	4230	10.0	11		"	*1	11	и	
Surrogate: 1-Chlorooctane		124 %	70-1	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		116 %	70-1	30	"	"	"	"	
EFE-016 (6A18005-08) Soil							, 	<u></u>	
Benzene	1.23	0.0250	mg/kg dry	25	EA61902	01/19/06	01/20/06	EPA 8021B	
Toluene	2.85	0.0250	· 11	+*	"	n	11		
Ethylbenzene	0.742	0.0250	"		n	"			
Xylene (p/m)	2.52	0.0250	**	11	"	"	` н		
Xylene (o)	0.924	0.0250	"	**	n		"	"	
Surrogate: a,a,a-Trifluorotoluene		815 %	80-1	20	"	"	"	"	S-0-
Surrogate: 4-Bromofluorobenzene		154 %	80-1	20	"	"	"	"	S-0
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	н .	••	"	"	u.	. "	
Total Hydrocarbon nC6-nC35	7400	10.0		"	н		"	"	

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Plains All American EH & S 1301 S. County Road 1150 Midland TX 79706-4476		Project N Project M	Project: 8 in umber: 200 anager: Can	ch Moore t 2-10270 nille Revno	o Jal #1			Fax: (43)	2) 687-4914
			conice h						
		Environ	gantes D	y GC ah af Ťa	NAG				
· · · · · · · · · · · · · · · · · · ·									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
EFE-016 (6A18005-08) Soil									
Surrogate: 1-Chlorooctane		112 %	70-1	30	EA61807	01/18/06	01/19/06	EPA 8015M	
Surrogate: 1-Chlorooctadecane		93.0 %	70-1	30	"	"	"	n	
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	"	**		a.	"	"	
Ethylbenzene	ND	0.0250		"	"	н		**	
Xylene (p/m)	0.0487	0.0250	н	u	"	. 13	и	"	
Xylene (o)	J [0.0177]	0.0250	"		IJ	"	"	"	j
Surrogate: a,a,a-Trifluorotoluene		84.5 %	80-1	20	n	"	n	"	
Surrogate: 4-Bromofluorobenzene		82.5 %	80-1	20	"	n	"	"	
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			"	11	n	н.	
Total Hydrocarbon nC6-nC35	8140	10.0	"		"	n	п	11	
Surrogate: 1-Chlorooctane		126 %	70-1	30	"	"	н	"	
Surrogate: 1-Chlorooctadecane		116 %	70-1	30	"	"	"	"	
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	и		"	н	н	U	
Ethylbenzene	0.0657	0.0250	"	"	"	п	"	n	
Xylene (p/m)	0.300	0.0250	н			"	"	"	
Xylene (0)	0.111	0.0250	н	"	"	"	п	17	
Surrogate: a,a,a-Trifluorotoluene		86.5 %	80-1	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.0 %	80-1	20	" .	"	"	"	
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	"		"		11	n	
Surrogate: 1-Chlorooctane		107 %	70-1	30	"		"	"	
Surrogate: 1-Chlorooctadecane		109 %	70-1	30	"	n	"	"	

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Project:8 inch Moore to Jal #1Project Number:2002-10270Project 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
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	и			н ,	п	"	
Xylene (p/m)	ND	0.0250	"	н	н	п	11	п	
Xylene (o)	ND	0.0250	. ,,	"	"		"	н	
Surrogate: a,a,a-Trifluorotoluene		86.2 %	80-1	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.8 %	80-1	20	"	"	"	"	
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			u.	п	"	"	
Surrogate: 1-Chlorooctane		150 %	70-1	30	"	"	"	**	S-0
Surrogate: 1-Chlorooctadecane		128 %	70-1	30	"	"	"	"	
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	**	*	"	a	"	"	
Ethylbenzene	ND	0.0250	u	н	"	n	"	"	
Xylene (p/m)	ND	0.0250	••	"	"		**		
Xylene (o)	ND	0.0250	11	п	11	n	"	19	
- Surrogate: a,a,a-Trifluorotoluene		83.2 %	80-1	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.2 %	80-1	20	"	"	"	"	
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	· .	"	н	"			
Yotal Hydrocarbon nC6-nC35	119	10.0	11		"	n	"	"	
Surrogate: 1-Chlorooctane		123 %	70-1	30	"	"	"	11	
Surrogate: 1-Chlorooctadecane		109 %	70-1	30	н	п	"	"	
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	"	11	. "	"	"		
Ethylbenzene	ND	0.0250	"	"	"	11	tr		
Xylene (p/m)	ND	0.0250		"	11	"	"	"	
Xylene (o)	ND	0.0250	"	"	"		"	"	
Surrogate: a,a,a-Trifluorotoluene		91.2 %	80-1	20	u	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.8 %	80-1.	20	"	"	"	n	
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	п	"	n	u	"	u	
Fotal Hydrocarbon nC6-nC35	ND	10.0	"	н	н	"	"	11	

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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

		0	rganics b	y GC					
		Environ	mental L	ab of Te	exas				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
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	'n	н '		п	"	м	
Ethylbenzene	0.0291	0.0250	".	"	"	"	"	·	
Xylene (p/m)	0.0599	0.0250	**	"	H	"	"	н	
Xylene (o)	ND	0.0250	"		"	n		33	
Surrogate: a,a,a-Trifluorotoluene		82.0 %	80-	120	"	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	"	"	
Surrogate: 4-Bromofluorobenzene		90.2 %	80-	120	"	11	"	11	
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		"	n	"	"	**	
Total Hydrocarbon nC6-nC35	155	10.0	"	н	"	н	"		
Surrogate: 1-Chlorooctane		125 %	70-	130	"	"	"	"	
Surrogate: 1-Chlorooctadecane		113 %	70-	130	"	"	"	<i>n</i>	
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	11		"		"		
Xylene (p/m)	ND	0.0250	"	11	"	U.	"	н	
Xylene (0)	ND	0.0250		"		"	D	н	
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	н		"	"	n		
Total Hydrocarbon nC6-nC35	ND	10.0	"		"	"		0	

Surrogate: 1-Chlorooctadecane

Surrogate: 1-Chlorooctane

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70-130

70-130

119 %

105 %

Plains All American EH & S 1301 S. County Road 1150

Midland TX, 79706-4476

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

Fax: (432) 687-4914

# Organics by GC

**Environmental Lab of Texas** 

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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	• ••	**	"	*	u	"	
Ethylbenzene	ND	0.0250		"			"	"	
Xylene (p/m)	ND	0.0250	н	**	"	U.	<b>"</b>		
Xylene (o)	ND	0.0250	"	"	"	**	и	"	
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	11		н	11	"	11	
Total Hydrocarbon nC6-nC35	ND	10.0	. "	"	н	"	11	11	
Surrogate: 1-Chlorooctane		93.0 %	70-	130	"	"	"	"	
Surrogate: 1-Chlorooctadecane		81.2 %	70-1	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	"		u.	"	"	•	
Ethylbenzene	ND	0.0250	n	н	н	"	11	и	
Xylene (p/m)	ND	0.0250	- 11	"	"		н	**	
Xylene (o)	ND	0.0250	"	**	"	н	IJ	"	
Surrogate: a,a,a-Trifluorotoluene		95.2 %	80-1	120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.5 %	80-1	120	"	11	"	"	
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	н	"	"	11	**		
Surrogate: 1-Chlorooctane		127 %	70-1	130	"	n	"	"	
Surrogate: 1-Chlorooctadecane		112 %	70-1	130	"	"	<b>"</b>	11	
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	"		"	и	"	н	
Ethylbenzene	ND	0.0250	"	"	п	*1	"	н	
Xylene (p/m)	J [0.0228]	0.0250		15	11	'n	n	"	
Xylene (o)	ND	0.0250	u	0	n .	"	11	"	
Surrogate: a,a,a-Trifluorotoluene		90.8 %	80-1	120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %	80-1	20	"	"	"	"	
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			n		"	11	
Total Hydrocarbon nC6-nC35	2210	10.0	•	"	"	"	*	. 11	

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Midland TX, 79706-4476

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

#### Organics by GC

#### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	- Notes
EFW-007 (6A18005-18) Soil					<u></u>	·			·
Surrogate: 1-Chlorooctane		111 %	70-1	30	EA61807	01/18/06	01/19/06	EPA 8015M	· · · ·
Surrogate: 1-Chlorooctadecane		114 %	70-1	30	"	"	"	"	
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	n	"		"		"	l
Ethylbenzene	0.0535	0.0250	n	"	н	**	"		
Xylene (p/m)	0.187	0.0250	"	"	11		"		
Xylene (0)	0.0671	0.0250	"	"	"	и	"		
Surrogate: a,a,a-Trifluorotoluene		88.5 %	80-1	20	39	11	"	31	
Surrogate: 4-Bromofluorobenzene		126 %	80-1	20	"	"	"	n	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	"	**	11	л	"	"	
Total Hydrocarbon nC6-nC35	5740	10.0	"	н	"		"	u	
Surrogate: 1-Chlorooctane		116 %	70-1	30	"	"	"	. "	
Surrogate: 1-Chlorooctadecane		97.0 %	70-1	30	"	"	"	"	

Environmental Lab of Texas

#### Project:' 8 inch Moore to Jal #1 Project Number: 2002-10270 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
EFW-009 (6A18005-01) Soil				÷				·····	
% Moisture	8.2	0.1	%	1	EA61901	01/18/06	01/19/06	% calculation	
EFW-010 (6A18005-02) Soil	<u>.</u>								
% Moisture	9.3	0.1	%	1	EA61901	01/18/06 .	01/19/06	% calculation	
EFW-011 (6A18005-03) Soil		s							
% 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	%	I	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	

Environmental Lab of Texas

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						<u>.</u>			
% Moisture	8.2	0.1	%	I	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	

Environmental Lab of Texas

Midland TX, 79706-4476		Project Ma	anager: Cai	nille Reynol	ds					
	Or	ganics by	, GC - Q	uality Co	ontrol					
	]	Environi	nental L	ab of Tex	xas					
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD		Not
Batch EA61807 - Solvent Extraction (GC)										
Blank (EA61807-BLK1)				Prepared: (	01/18/06 A	nalyzed: 0	/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	n							
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	п	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 A	nalyzed: 0	/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)	Sourc	ce: 6A18005	5-13	Prepared: (	)1/18/06 A	nalyzed: 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	и	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)	Sourc	e: 6A18005	5-13	Prepared: 0	)1/18/06 A	nalyzed: 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	
Fotal 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			

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Project: 8 inch Moore to Jal #1

Environmental Lab of Texas

Surrogate: 1-Chlorooctadecane

Plains All American EH & S

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.

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Fax: (432) 687-4914

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

# 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 &	k Analyzed:	01/19/06			,	
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	н							
Xylene (p/m)	ND	0.0250								
Xylene (o)	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: (	01/19/06 A	nalyzed: 01	/20/06			
Benzene	1.28	0,0250	mg/kg wet	1.25		102	80-120			
Toluene	1.29	0.0250	Ħ	1.25		103	80-120			
Ethylbenzene	1.23	0.0250	11	1.25		98.4	80-120			
Xylene (p/m)	2.38	0.0250	н	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 Ai	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 (o)	47.6		н	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)	Sou	rce: 6A17011	-04	Prepared: (	01/19/06 Ai	nalyzed: 01	/21/06			
Benzene	1.41	0.0250	mg/kg dry	1.46	ND	96.6	80-120			
Foluene	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			
Kylene (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			

Environmental Lab of Texas

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

### **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: 6A1701	-04	Prepared: (	)1/19/06 Ai	nalyzed: 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	u.	1.46	ND	89.0	80-120	0.676	20	
Xylene (p/m)	2.51	0.0250	11	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	п ,				
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	и ,	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	. 11	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	

Environmental Lab of Texas

#### 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	Reput	Reporting Limit	Unite	Spike	Source	%REC	%REC	רופק	RPD Limit	Notes
			Onits			70NEC		ND D	Linit	110165
Batch EA62021 - EPA 5030C (GC)										
Calibration Check (EA62021-CCV1)				Prepared: (	01/20/06 A	nalyzed: 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)	Sou	irce: 6A18005	-15	Prepared: (	01/20/06 A	nalyzed: 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	н	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)	Sou	ırce: 6A18005	5-15	Prepared:	01/20/06. A	nalyzed: 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	и	1.35	ND	85.9	80-120	5.26	20	
Xylene (p/m)	2.31	0.0250	11	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			

Environmental Lab of Texas

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

#### 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	)	<u> </u>								
Blank (EA61901-BLK1)	,			Prepared: (	01/18/06 A	nalyzed: 01	/19/06			
% Solids	100		%							
Duplicate (EA61901-DUP1)	Sou	rce: 6A18001-	01	Prepared: (	01/18/06 A	nalyzed: 01	/19/06			
% Solids	87.2		%		87.1			0.115	20	
Duplicate (EA61901-DUP2)	Sou	rce: 6A18005-	13	Prepared: (	01/18/06 A	nalyzed: 01	/19/06			
% Solids	92.2		%		91.8			0.435	20	

Environmental Lab of Texas

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

#### **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:

all B Krenne

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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Environmental Lab of Texas

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LAB CUPY

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

Client: Plains P/L

Detertime: 01-18-06 Coble

Drder #: 6A 18005

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	(es) No	-2.5 C:
Shipping container/cooler in good condition?	(Yes) No	
Justody Seals intact on shipping container/cooler?	Yes   No	(ICCCRESED)
Custody Seals intact on sample bottles?	I CEE NO	Not present
Chain of custody present?	(Tes, No	
Sample Instructions complete on Chain of Custocy?	I Cas I No	
Chain of Custody signed when relinquished and received?	No Icesty	
Chain of custody agrees with sample label(s)	No No	
Container labels legible and intact?	I TESO NO	
Sample Matrix and procerties same as on chain of custody?	Ares, No	
Samples in proper container/bottle?	No I No	-
Samples properly preserved?	No No	
Sample bottles intact?	(FES) NO	
Preservations documented on Chain of Custody?	(TEE) NO	
Containers documented on Chain of Custody?	(Yes) No	
Sufficient sample amount for indicated test?	I (Yes) No	
All samples received within sufficient hold time?	YES NO	1
VOC samples have zero headspace?	Vest No	Not Acclicable

Other observations:

t see attached e-mail

Contact 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 #1 Project Number: 2002-10270 Location: None Given

Lab Order Number: 6I21007

Report Date: 09/26/06

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
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	6121007-03	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	6121007-06	Soil	09/20/06 11:02	09-21-2006 10:40
SW-B	6121007-07	Soit	09/20/06 11:06	09-21-2006 10:40
SE-B	6121007-08	Soil	09/20/06 11:04	09-21-2006 10:40

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

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-A (6121007-01) Soil									
Carbon Ranges C6-C12	J [3.50]	10.0	mg/kg dry	1	EI62502	09/22/06	09/23/06	EPA 8015M	1
Carbon Ranges C12-C28	242	10.0	"	"	"	11	"	U.	
Carbon Ranges C28-C35	64.5	10.0	"			"	"	"	
Total Hydrocarbons	306	10.0	"	"	н	"	11	"	
Surrogate: 1-Chlorooctane		96.2 %	70-1	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		123 %	70-1	30	"	"	"	"	
NE-A (6121007-02) 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	"	*		"	*	W	
Carbon Ranges C28-C35	85.4	10.0	"	0	**	н	19	n	
Total Hydrocarbons	450	10.0	"	п	**	11	".		
Surrogate: 1-Chlorooctane		96.0 %	· 70-1	30	"	"	"	. "	
Surrogate: 1-Chlorooctadecane		126 %	70-1	30	"	"	"	n	
SW-A (6121007-03) Soil	<u></u>								
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	11		u	"	17		
Total Hydrocarbons	217	10.0	"	**		11	11		
Surrogate: 1-Chlorooctane		97.8 %	70-1	30	"	n	"	"	
Surrogate: 1-Chlorooctadecane		124 %	70-1	30	"	"	"	"	
SE-A (6121007-04) 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	u	"	11	"	"	н	
Total Hydrocarbons	258	10.0	"		"	0	11	**	
Surrogate: 1-Chlorooctane		93.0 %	70-1	30	"	"	,,	"	
Surrogate: 1-Chlorooctadecane		120 %	70-1	30	"	"	"	"	

Environmental Lab of Texas

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Page 2 of 7

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Plains All American EH & S 1301 S. County Road 1150

Midland TX, 79706-4476

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

#### Organics by GC

#### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NW-B (6121007-05) Soil			· · · · · · · · · · · · · · · · · · ·						<u> </u>
Carbon Ranges C6-C12	J [3.81]	10.0	mg/kg dry	1	EI62502	09/22/06	09/23/06	EPA 8015M	
Carbon Ranges C12-C28	116	10.0	"	"	**	и	u		
Carbon Ranges C28-C35	31.0	10.0	••	"	"		"	n	
Total Hydrocarbons	147	10.0	11	n	u	"	11	"	
Surrogate: 1-Chlorooctane		95.0 %	70-1	30	"	"	"	u	
Surrogate: 1-Chlorooctadecane		122 %	70-1	30	"	"	"	"	
NE-B (6121007-06) Soil									
Carbon Ranges C6-C12	J [4.33]	10.0	mg/kg dry	1	EI62502	09/22/06	09/23/06	EPA 8015M	
Carbon Ranges C12-C28	170	10.0	••	п		11	n		
Carbon Ranges C28-C35	40.5	10.0	u.	"	"		n	**	
Total Hydrocarbons	210	10.0	11	18	"	"	"		
Surrogate: 1-Chlorooctane		116 %	70-1	30	"	u	"	"	
Surrogate: 1-Chlorooctadecane		146 %	70-1	30	"	"	"	"	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	
Carbon Ranges C12-C28	175	10.0	"	10	u.	н	"	**	
Carbon Ranges C28-C35	49.9	10.0		"	"	"	**	11	
Total Hydrocarbons	225	10.0	11	"	"	"	n	и	S-04
Surrogate: 1-Chlorooctane		99.2 %	, 70-1	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		130 %	70-1	30	"	"	"	"	
SE-B (6121007-08) Soil							,		
Carbon Ranges C6-C12	J [2.91]	10.0	mg/kg dry	1	E162502	09/22/06	09/23/06	EPA 8015M	J
Carbon Ranges C12-C28	144	10.0	"		н	н		**	
Carbon Ranges C28-C35	42.5	10.0			"	и	"	11	
Total Hydrocarbons	186	10.0	"	u	"	**	11	и	
Surrogate: 1-Chlorooctane		97.6 %	70-1	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		124 %	70-1	30	"	"	"	"	

Environmental Lab of Texas

#### Project: 8 inch Moore to Jal #1 Project Number: 2002-10270 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 (6121007-01) Soil									
% Moisture	11.4	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
NE-A (6121007-02) Soil									
% Moisture	8.8	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
SW-A (6121007-03) Soil									
% Moisture	12.4	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
SE-A (6121007-04) Soil	<u></u>								
% Moisture	10.8	0.1	%	I	EI62201	09/21/06	09/22/06	% calculation	
NW-B (6121007-05) Soil									
% Moisture	12.5	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
NE-B (6121007-06) Soil									
% Moisture	14.3	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	_
SW-B (6121007-07) Soil									
% Moisture	11.4	0.1	%	1	EI62201	09/21/06	09/22/06	% calculation	
SE-B (6121007-08) Soil									
% Moisture	11.3	0.1	%	1	E162201	09/21/06	09/22/06	% calculation	

Environmental Lab of Texas

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

#### **Organics by GC - Quality Control**

**Environmental Lab of Texas** 

Analyte	Pacult	Reporting	[ Inita	Spike	Source	0/DEC	%REC	סווק	RPD	Notor
Anaryte	Result	Limit	Units	Level	Result	70KEU	Limits	KPD	Limit	notes
Batch EI62502 - Solvent Extraction (GC)										
Blank (E162502-BLK1)				Prepared: 0	)9/22/06 Ai	nalyzed: 09	/23/06			
Carbon Ranges C6-C12	ND	10.0	mg/kg wet							
Carbon Ranges C12-C28	ND	10.0	н							
Carbon Ranges C28-C35	ND	10.0	11							
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 (E162502-BS1)				Prepared: 0	)9/22/06 Ar	nalyzed: 09	/23/06			
Carbon Ranges C6-C12	569	10.0	mg/kg wet	500		114	75-125			
Carbon Ranges C12-C28	422	10.0	11	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: 0	)9/22/06 Ar	nalyzed: 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: 0	)9/22/06 Ar	nalyzed: 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			
Fotal Hydrocarbons	442		"	500		88.4	80-120			
Surrogate: 1-Chlorooctane	58.1		"	50.0		116	70-130			
urrogate: 1-Chlorooctadecane	49.4		"	50.0		98.8	70-130			

Environmental Lab of Texas

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

#### 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	ı (Prep)									
Blank (EI62201-BLK1)				Prepared: (	09/21/06 A	nalyzed: 09	9/22/06			
% Solids	99.8		%							
Duplicate (EI62201-DUP1)	Sou	rce: 6I21001-(	)1	Prepared: (	09/21/06 A	nalyzed: 09	9/22/06			
% Solids	90.3		%		90.4			0.111	20	

Environmental Lab of Texas

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

#### 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.

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
)ate/ Time:	9/21/06 10:40
Lab ID # :	10121007
nitials:	<u> </u>

## Sample Receipt Checklist

				L L	ment initials
, <b>#1</b>	Temperature of container/ cooler?	Yes	No	3,0 °C	
#2	Shipping container in good condition?	YES	No		
<b>#3</b>	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
74	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
<sup></sup> #6	Sample instructions complete of Chain of Custody?	Yes	No		
¥7.	Chain of Custody signed when relinquished/ received?	¥es	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	
<i>¥</i> 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?	Yeş	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?	Yeş	No		
ı#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:	Date/ Time:		
-Regarding:	<u></u>		· · · · · · · · · · · · · · · · · · ·	
- Corrective Action Taker	):			
_ Check all that Apply:		See attached e-mail/ fax Client understands and would like to proc Cooling process had begun shortly after	eed with analysis	· ·

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

806 • 794 • 1296FAX 806 • 794 • 1298915 • 585 • 3443FAX 915 • 585 • 4944

## **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, NMProject Name:Moore to Jal #1Project Number:Plains 007SPLSRS #:2002-10270

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	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.

This report consists of a total of 9 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

#### **Standard Flags**

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

Report Date: February 2, 2007 Plains 007SPL

## **Analytical Report**

Sample:	115093 -	NE	WALL
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			Anarytical	vietnoa: S	6 8021B		Prep Mei	thod: \$ 503:
QC Batch:	34163		Date Analy	zed: 2	2007-01-31		Analyzed	d By: ss
Prep Batch:	29648		Sample Pre	paration:			Prepared	By: ss
			RI			,		
Parameter	· Fla	g	Resul	t	Units		Dilution	RI
Benzene		<u> </u>	< 0.010	0	mg/Kg		1	0.010
Toluene			0.0154	4	mg/Kg		1	0.0100
Ethylbenzene			< 0.010	)	mg/Kg		1	0.010
Xylene			0.084	7	mg/Kg		1	0.010
						Snike	Percent	Recovery
		Flag	Result	Units	Dilution	Amount	Recovery	Limits
Surrogate		0				1.00	101	69 - 113
Surrogate Trifluorotolu	ene (TFT)		1.01	mg/Kg	1	1.00	101	0/ 110
Surrogate Trifluorotolu 4-Bromofluo Sample: 115	ene (TFT) robenzene (4-BFB) 093 - NE WALL		1.01	mg/Kg mg/Kg	1	1.00	101	63.4 - 12
Surrogate Trifluorotolu 4-Bromofluo Sample: 115 Analysis: QC Batch: Pren Batch:	ene (TFT) robenzene (4-BFB) <b>093 - NE WALL</b> TPH DRO 34190 29667		1.01 1.03 Analytic Date Ana Sample J	mg/Kg mg/Kg al Method: alyzed:	1 1 Mod. 8015B 2007-02-01 2007-01-31	1.00	Prep M Analy Prepa	63.4 - 12 63.4 - 12 Method: N/A zed By: WR
Surrogate Trifluorotolu 4-Bromofluo Sample: 115 Analysis: QC Batch: Prep Batch:	ene (TFT) robenzene (4-BFB) 093 - NE WALL TPH DRO 34190 29667		1.01 1.03 Analytic Date Ana Sample I	mg/Kg mg/Kg al Method: alyzed: Preparation:	1 1 Mod. 8015B 2007-02-01 2007-01-31	1.00	101 103 Prep M Analy Prepar	Aethod: N/A zed By: WR
Surrogate Trifluorotolu 4-Bromofluo Sample: 115 Analysis: QC Batch: Prep Batch:	ene (TFT) robenzene (4-BFB) <b>093 - NE WALL</b> TPH DRO 34190 29667		1.01 1.03 Analytic Date Ana Sample I RL	mg/Kg mg/Kg al Method: alyzed: Preparation:	1 1 Mod. 8015B 2007-02-01 2007-01-31	1.00	101 103 Prep M Analy Prepar	Aethod: N/A zed By: WR red By: WR
Surrogate Trifluorotolu 4-Bromofluo Sample: 115 Analysis: QC Batch: Prep Batch: Parameter	ene (TFT) robenzene (4-BFB) <b>093 - NE WALL</b> TPH DRO 34190 29667 Flag		1.01 1.03 Analytic Date Ana Sample I RL Result	mg/Kg mg/Kg al Method: alyzed: Preparation:	1 1 Mod. 8015B 2007-02-01 2007-01-31 Units	1.00	101 103 Prep N Analy Prepar Dilution	63.4 - 12 Aethod: N/A zed By: WR red By: WR
Surrogate Trifluorotolu 4-Bromofluo Sample: 115 Analysis: QC Batch: Prep Batch: Prep Batch: Parameter DRO	ene (TFT) robenzene (4-BFB) 093 - NE WALL TPH DRO 34190 29667 Flag		1.01 1.03 Analytic Date Ana Sample I RL Result <50.0	mg/Kg mg/Kg al Method: alyzed: Preparation:	1 1 Mod. 8015B 2007-02-01 2007-01-31 Units mg/Kg	1.00	101 103 Prep M Analy Prepar Dilution 1	63.4 - 12 Aethod: N/A zed By: WR red By: WR RI 50.0
Surrogate Trifluorotolu 4-Bromofluo Sample: 115 Analysis: QC Batch: Prep Batch: Prep Batch: Parameter DRO	ene (TFT) robenzene (4-BFB) <b>093 - NE WALL</b> TPH DRO 34190 29667 Flag		1.01 1.03 Analytic Date Ana Sample I RL Result <50.0	mg/Kg mg/Kg al Method: alyzed: Preparation:	1 1 Mod. 8015B 2007-02-01 2007-01-31 Units mg/Kg	1.00 1.00	Dilution Percent	Aethod: N/A zed By: WR red By: WR <u>RI</u> 50.0
Surrogate Trifluorotolue 4-Bromofluo Sample: 115 Analysis: QC Batch: Prep Batch: Prep Batch: DRO Surrogate	ene (TFT) robenzene (4-BFB) 093 - NE WALL TPH DRO 34190 29667 Flag	Result	1.01 1.03 Analytic Date Am Sample I RL Result <50.0 Units	mg/Kg mg/Kg al Method: alyzed: Preparation: Di	1 1 Mod. 8015B 2007-02-01 2007-01-31 Units mg/Kg	Spike Amount	Dilution Prep M Analy Prepar Dilution	Aethod: N/A zed By: WR red By: WR <u>RI</u> 50.0 Recovery Limits

#### Sample: 115093 - NE WALL

Analysis:	TPH GRO			Analytical	Method:	S 8015B		Prep Meth	od: S 5035
QC Batch:	34155	•		Date Anal	yzed:	2007-01-31		Analyzed	By: ss
Prep Batch:	29636			Sample Pr	eparation:			Prepared I	By: ss
				RL					
Parameter		Flag		Result		Units	D	vilution	RL
GRO		· · · · · · · · · · · · · · · · · · ·	· · · · ·	1.20		mg/Kg		1	1.00
							Spike	Percent	Recovery
Surrogate			Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolu	ene (TFT)			0.824	mg/Kg	1.	1.00	82	70 - 130
4-Bromofluo	robenzene (4-	BFB)		1.13	mg/Kg	1	1.00	113	70 - 130

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Sample: 115094 - SE WALL

Analysis:BTEXQC Batch:34163Prep Batch:29648		Analytical M Date Analyz Sample Prep	fethod: S ed: 2 paration:	S 8021B 2007-01-31		Prep Meth Analyzed Prepared 1	nod: S 5035 By: ss By: ss
·		 рт					-
Parameter Flag		Result		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
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	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 QC Batch: 34190 Prep Batch: 29667		Analytica Date Ana Sample P	l Method: lyzed: reparation:	Mod. 8015B 2007-02-01 2007-01-31		Prep M Analyz Prepare	lethod: N/A zed By: WR ed By: WR
r			1			1	<b>,</b>
Parameter Flag		RL Result		Unite		Dilution	DI
DRO		< 50 0		mg/K g	·	1	50.0
Surrogate Flag	Result	Units	D	ilution	Spike Amount	Percent Recoverv	Recovery Limits
n-Triacontane	106	mg/Kg		1	150	71	70 - 130
Sample: 115094 - SE WALL							
Analysis:TPH GROQC Batch:34155Prep Batch:29636		Analytical Date Anal Sample Pr	Method: yzed: eparation:	S 8015B 2007-01-31		Prep Metl Analyzed Prepared	hod: S 5035 By: ss By: ss
		RL					
Parameter Flag		Result		Units		Dilution	RL
<u>ana</u>		<1.00		mg/Kg		l	1.00
GRO							
GRO Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
GRO Surrogate Trifluorotoluene (TFT)	Flag	Result 0.812	Units mg/Kg	Dilution 1	Spike Amount 1.00	Percent Recovery 81	Recovery Limits 70 - 130

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

Report Date: February 2 Plains 007SPL	2, 2007		Work Or Moor	Page Number: 4 of 9 Lea County, NM				
Parameter	Flag		M Res	DL sult		Units		RL
GRO			<0.	829		mg/Kg		1
Surrogate	Flag	Result	Unite	s Dilut	Spi	ke	Percent	Recovery
Trifluorotoluene (TFT)	I M5	0.912	mø/K	<u>σ 1</u>	1011 11110	00	91	70 - 130
4-Bromofluorobenzene	(4-BFB)	0.964	mg/K	<u>g 1</u>	1.0	)0	96	70 - 130
Method Blank (1) (	QC Batch: 34163							
QC Batch: 34163 Prep Batch: 29648		Date A QC Pre	nalyzed: eparation:	2007-01-31 2007-01-30			Ar Pro	alyzed By: ss epared By: ss
Parameter	Flag		]	MDL Result		Units		RL
Benzene	<u>1</u>	······	<0.	00270		mg/Kg		0.01
Toluene			<0.0	00320		mg/Kg		0.01
Ethylbenzene			<0.0	00340		mg/Kg		0.01
Xylene				0.0104		mg/Kg		0.01
Surrogate	Flag	Result	Units	s Diluti	Spil ion Amo	ke unt	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.01	mg/K	g 1	1.0	0	101	69 - 113
4-Bromofluorobenzene	(4-BFB)	0.897	mg/K	g <u>1</u>	1.0	0	90	63.4 - 121
Method Blank (1) QC Batch: 34190 Prep Batch: 29667	QC Batch: 34190	Date Ar QC Prep	nalyzed: paration:	2007-02-01 2007-02-01			Anal Prep	yzed By: WR ared By: WR
			M	DL				•
Parameter	Flag		Res	ult		Units		RL
DRO	<u></u>	دي <sub>ن هما</sub> ر.	<1	5.4		mg/Kg		50
Surrogate	Flag Result	Units		Dilution	Spike Amount	F	Percent Recovery	Recovery Limits
n-Triacontane	158	mg/K	g	1	150		105	70 - 130
<b>Laboratory Control S</b> QC Batch: 34155 Prep Batch: 29636	oike (LCS-1)	Date A QC Pre	nalyzed: eparation:	2007-01-31 2007-01-30			Ar Pre	alyzed By: ss epared By: ss
Param		LCS Result	Inite	Dil	Spike	Matrix	Dec	Rec.
GRO		833 "		<u>1</u>	10.0	<u>Cosult</u>	) 92	. Linit 70 120
J///		0.55 11	ug/ing	1	10.0		03	/0 - 130

<sup>1</sup>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. •

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

<b>~</b>	LCSD	** *		Spike		Matrix	-	Rec.		RP
Param	Result	Units	Dil.	Amount	t	Result	Rec.	Limit	RP	D Lin
GRO	8.84	mg/Kg	1	10.0		<0.829	88	70 - 130	) 6	20
Percent recovery is based on the spi	ike result. RPI	) is based	on the	spike and sp	ike d	luplicate re	sult.			
	LCS	LC	SD			Spi	ke	LCS	LCSD	Rec.
Surrogate	Resul	t Re	sult	Units	Dil	. Amo	unt	Rec.	Rec.	Limi
Trifluorotoluene (TFT)	1.18	1.	13	mg/Kg	1	1.0	0	118	113	70 - 13
4-Bromofluorobenzene (4-BFB)	1.06	1.	12	mg/Kg	_ 1	1.0	0	106	112	70 - 13
Laboratory Control Spike (LCS-	1)	·								
OC Batch: 34163		Date A	Analyze	d: 2007-0	1-31				Analyz	zed By:
Prep Batch: 29648		QC Pr	eparatic	on: 2007-0	1-30				Prepar	ed By:
	LCS					Spike	Ma	trix		Rec.
Param	Resul	t T	Jnits	Dil.	А	mount	Re	sult	Rec.	Limi
Benzene	1.05	n	ng/Kg	1		1.00	< 0.0	0270	105	70 - 12
Toluene	1.03	n	ıg/Kg	1		1.00	<0.0	0320	103	70 - 13
Ethylbenzene	1.04	n	ng/Kg	1		1.00	< 0.0	0340	104	70 - 1.
Xylene	3.14	n	ng/Kg	1		3.00	<0.0	0104	105	70 - 13
Percent recovery is based on the sp	ike result. RPI	) is based	l on the	spike and sp	oike d	luplicate re	sult.			
_	LCSD		<b>D</b> /1	Spike		Matrix	-	Rec.		RP
Param	Result	Units	D11.	Amount		Result	Rec.	Limit		$\frac{D}{D}$ Lin
Benzene	1.04	mg/Kg	1	1.00	<	<0.00270	104	70 - 13		20
Toluelle	1.04	mg/Kg	1	1.00	<	<0.00320	104	70 - 13		20
Xylene	3.13	mg/Kg	1	3.00		< 0.0104	104	70 - 13	0 0	20
Percent recovery is based on the sp	ike result. RPI	D is based	l on the	spike and sp	oike d	luplicate re	sult.	<u>-</u>		
	LCS	LC	SD			Spik	e	LCS L	.CSD	Rec.
Surrogate	Result	t Res	ult	Units	Dil.	Amou	int	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	0.973	0.9	58	mg/Kg	1	1.00	)	97	96	69 - 11
4-Bromofluorobenzene (4-BFB)	1.01	1.(	)0	mg/Kg	1	1.00	)	101	100	63.4 - 12
Laboratory Control Spike (LCS-	1)									
QC Batch: 34190		Date A	nalyzed	: 2007-02	-01				Analyzed	d By: W
Prep Batch: 29667		QC Pre	paration	n: 2007-02	-01				Prepared	By: W
	LCS	5				Spike	M	atrix		Rec.
Param .	Resu	lt	Units	Dil.		Amount	Re	esult	Rec.	Limi
DRO	256	)	mg/Kg	1		250	<	15.4	102	70 - 12
Percent recovery is based on the sp	ike result. RPI	) is based	l on the	spike and sp	ike d	luplicate re	sult.			
	LCSD			Spike		Matrix		Rec.		RP
Param	Result	Units	Dil.	Amoun	ıt	Result	Rec.	Limit	RP	D Lin
DRO	258	mg/Kg	1	250		<15.4	103	70 - 130	) 1	20

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

0	LCS	LCSD		D	Spike	LC	s LCS	SD	Rec.
Surrogate	Result	Result	Units	Dıl.	Amount	Rec	c. Re	<u>c.</u>	Limit
n-Triacontane	158	162	mg/Kg	I	150	10:	5 10	8	70 - 13
<b>Matrix Spike (MS-1)</b> Sp	iked Sam	ple: 115093							
QC Batch: 34155			Date Analyzed:	2007-01-2	31			Analyzed	l By: s
Prep Batch: 29636			QC Preparation	: 2007-01-2	30			Prepared	By: s
		MS			Spike	Ma	trix		Rec.
Param		Result	Units	Dil.	Amount	Re	sult R	ec.	Limit
GRO		13.7	mg/Kg	1	10.0	1.2	032 1	25	70 - 13
Percent recovery is based of	n the spike	e result. RPD	is based on the sp	oike and spik	e duplicate	result.			
		MSD		Spike	Matrix	_	Rec.	-	RP
Param		Result	Units Dil.	Amount	Result	Rec.	Limit	RPD	Lin
GRU		12.3 r	ng/Kg l	10.0	1.2032	111	70 - 130	11	20
Percent recovery is based of	n thẻ spike	e result. RPD	is based on the sp	oike and spik	e duplicate	result.			
		MS	MSD			Spike	MS I	MSD	Rec.
Surrogate		Resul	lt Result	Units	Dil. A	Amount	Rec.	Rec.	Limi
Trifluorotoluene (TFT)		2 3 0.653	3 0.644	mg/Kg	1	1	65	64	70 - 13
4-Bromofluorobenzene (4-I	<u>3FB)</u>	1.22	1.24	mg/Kg		1	122	124	70 - 13
Matrix Spike (MS-1) Sp QC Batch: 34190 Prep Batch: 29667	oiked Sam	ple: 115086	Date Analyzed: QC Preparation:	2007-02-0 2007-02-0	1		Ar Pr	nalyzed E epared B	By: WF y: WF
		МС			Spilco	Ма	twise		Pag
Param		Result	Units	Dil	Amount	Re	uix sult R	ec	Limit
DRO		310	mg/Kg	1	250	<1	5.4 1	24	70 - 13
Percent recovery is based of	n the spike	e result. RPD	is based on the sp	ike and spik	e duplicate	result.			
		MSD		Spike	Matrix		Rec.		RPI
Param		Result	Units Dil.	Amount	Result	Rec.	Limit	RPD	Lim
<u>DRO</u>		<u>234</u> r	ng/Kg l	250	<15.4	94	70 - 130	28	20
Percent recovery is based of	n the spike	e result. RPD	is based on the sp	ike and spike	e duplicate	result.			
_	MS	MSD			Spike	М	S MS	SD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	t <u>Re</u>	c. Re	c.	Limit
n-Triacontane	178	146	mg/Kg	1	150	11	9 9'	7	70 - 13
Standard (ICV-1)									
OC Batch: 34155			Date Analyzed:	2007-01-3	1			Amaturaa	Du o

<sup>2</sup>Surrogate out due to peak interference. <sup>3</sup>Surrogate out due to peak interference.

Report Date: February 2, 2007 Plains 007SPL				Work Order: 701 Moore to Jal #	Page Number: 7 of 9 Lea County, NM			
			ICVs	ICVs	ICVs	Percent		
			True	Found	Percent	Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
GRO		mg/Kg	1.00	0.913	91	85 - 115	2007-01-31	
Standard (	CCV-1)							
QC Batch:	34155		Date Ana	lyzed: 2007-01	1-31	A	nalyzed By: ss	
			CCVs	CCVs	CCVs	Percent		
			True	Found	Percent	Recovery	Date	
Param	Flag	Units	Conc	Conc	Recovery	Limits	Analyzed	
GRO		mg/Kg	1.00	1.01	101	85 - 115	2007-01-31	
Standard (1	ICV-1)							
QC Batch:	34163		Date Ana	lyzed: 2007-01	1-31	A	nalyzed By: ss	
			ICVs	ICVs	ICVs	Percent		
			True	Found	Percent	Recovery	Date	
Param	Fla	g Units	Conc.	Conc.	Recovery	Limits	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	
Ethylbenzer	ne	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 Ana	lyzed: 2007-01	1-31	A	nalyzed By: ss	
			CCVs	CCVs	CCVs	Percent	•	
			True	Found	Percent	Recovery	Date	
Param	Fla	g Units	Conc.	Conc.	Recovery	Limits	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	
Ethylbenzer	ne	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 (1	ICV-1)							
QC Batch:	34190		Date Anal	yzed: 2007-02-	-01	Ana	lyzed By: WR	
			ICVs	ICVs	ICVs	Percent		
			True	Found	Percent	Recoverv	Date	
Param	Flag	Units	Conc.	Conc.	Recoverv	Limits	Analyzed	
DRO	<u></u>	mg/Kg	250	233	93	85 - 115	2007-02-01	
Standard (	CCV-1)							
QC Batch:	34190		Date Anal	yzed: 2007-02-	-01	Ana	lyzed By: WR	

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

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1 (80 email: lab@	0) 378-1296 A T CE C traceanalysis.com			11	Уĸ		"		I V	•			1 (8	915 88)	588-3443 588-3443	4	読い			j î Ê	AB	Ord	er IE	)#	7	01	3	10	28		の設備					SS.
Company I	ompany Name: TAIDO LPE (SQS) 202-4241												ANALYSIS REQUEST																							
Address:	(Street, City, Zip)						Fa	IX #:		<u> </u>							ί.				(C	irc	le	or	Sp	ec	ify	y P	Лe	th	od	N	o.)			
Contact Pe	IS E. 7416, SV. Noshe NIII	8829	0				E	mail	35	<u>ی (</u> ر	13	1	<u>, 58</u> ,	; ,							200.7					1									g	Ì
Invoice to:	Eb Taylor							-	tay	6	· 2	tal	m/	04.	.com		.	1961	100		108/2	뫼													anda	
(If different	from above) Plains AW ; Cam	ille	ynol	<u>y</u>					S	esz	† 2	<u>00</u>	2	. /	027	0	624	24			Hg 60	p S								ŀ					1 S H S	
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## APPENDIX D

## Photograph Documentation

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

# Photographic DocumentationPrepared by:Marc StroopePhotographer:Talon/LPEProject Number:PLAINS007SPL

Photograph No. 1



Direction: Northeast

**Description:** Surface staining.

Photograph No. 2

**Direction:** Northwest

**Description:** Excavation activities.



Client: Plains All American Location: 8" Moore to Jal #1 Lea County, New Mexico PhotographicDocumentationPrepared by:Marc StroopePhotographer:Talon/LPEProject Number:PLAINS007SPL

Photograph No. 3

**Direction:** East

**Description:** View of excavation.



Photograph No. 4

**Direction:** Northeast

**Description:** View of excavation.



Client: Plains All American Location: 8" Moore to Jal #1 Lea County, New Mexico Photographic DocumentationPrepared by:Marc StroopePhotographer:Talon/LPEProject Number:PLAINS007SPL

Photograph No. 5

Direction: East

**Description:** View of backfill and site restoration.



Photograph No. 6

Direction: North

**Description:** View of backfill and site restoration.



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

## Photographic Documentation

Prepared by:Marc StroopePhotographer:Talon/LPEProject Number:PLAINS007SPL

Photograph No. 7

**Direction:** South

**Description:** View of backfill and site restoration.



Photograph No. 8

**Direction:** West

**Description:** View of backfill and site restoration.



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

## Photographic Documentation

Prepared by:Marc StroopePhotographer:Talon/LPEProject Number:PLAINS007SPL

Photograph No. 9

**Direction:** Southwest

**Description:** View of backfill and site restoration.



**Direction:** Northwest

**Description:** View of backfill and site restoration.





## APPENDIX E

## NMOCD C-141's

Initial C-141 Report Final C-141 Report Incident Date:NMOCD Notified:10-18-02 @ 10:00 AM10-18-02 @ 11:00 AM Pat McCasland EPI left<br/>message with Paul Sheeley and sent page to the "ON-<br/>CALL"

EOTT Site Information and Metrics

PLAINS

	CALL" representat	tive									
SITE: 8" Moore to Jal #1	Assigned Site Reference #: 2	002-10270									
Company: EOTT											
Street Address: PO Box 1660											
Mailing Address: 5805 East Highway 80											
City State Zin: Midland Texas 79702											
Renresentative: Frank Hernandez											
Representative Telephone: 015 638 3700											
Telenhone.											
Fluid volume released (bbls): 200 bbls Recovered (bbls): 0 bbls											
Covered (DDIS): 200 DDIS     Z5 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 Pipe	line										
Land Owner, i.e., BLM, ST, Fee, Other	: State of New Mexico										
LSP Dimensions: ~200' x 40'											
LSP Area: 8,000 sqft ft <sup>2</sup>											
Location of Reference Point (RP):											
Location distance and direction from F	RP:										
Latitude: 32° 50' 12.36"N											
<b>Longitude:</b> 103° 15' 26.234"W.											
Elevation above mean sea level:											
Feet from South Section Line:	Feet from South Section Line:										
Feet from West Section Line:											
Location- Unit or <sup>1</sup> / <sub>4</sub> <sup>1</sup> / <sub>4</sub> : SE <sup>1</sup> / <sub>4</sub> of the NW <sup>1</sup> / <sub>4</sub> Unit Letter: F											
Location- Section: 16											
Location- Township: T17S											
Location- Range: R37E											
Surface water body within 1000 ' radiu	is of site: none										
Surface water body within 1000 ' radiu	is of site:	······································									
Domestic water wells within 1000' radi	us of site: none										
Domestic water wells within 1000' radi	us of site:										
Agricultural water wells within 1000' r	adius of site: none										
Agricultural water wells within 1000' r	adius 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 way	ter (DG): ~66 feet										
Depth of contamination (DC): ?											
Depth to ground water $(DG - DC = Dt)$	GW): <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	<200 horizontal feet: 20 points									
If Depth to GW 50 to 99 feet: 10 points	private domestic water source: 20 points	200-100 horizontal feet: 10 points									
If Donth to CWA 100 forth 0 million	If >1000' from water source, or; >200' from										
If Depth to G w >100 feet: 0 points	private domestic water source: 0 points	>1000 norizontal feet: 0 points									
Ground water Score = 10 Wellhead Protection Area Score = 0 Surface Water Score = 0											
Site Rank (1+2+3) = 10	· · · · · · · · · · · · · · · · · · ·										
Total S	Total Site Ranking Score and Acceptable Concentrations										
Parameter >19	10-19	0-9									
Benzene <sup>1</sup> 10 ppm	10 ppm	10 ppm									
BTEX <sup>1</sup> 50 ppm	50 ppm	50 ppm									
· · · · · · · · · · · · · · · · · · ·											
TPH 100 ppm	1,000 ppm	5,000 ppm									

	PLAINS ALL AMERICAN
--	------------------------

District I					Stat	e of N	ew Mexic	20			D. 0.141			
1625 N. French District II	Dr., Hobbs, NN	A 88240	E	Energ	y Mine	erals an	d Natural	Resources		Revised October 10, 2003				
1301 W. Grand. <u>District III</u>	a, NM 88210	(	Oil Co	nserva	ation Divi		Submit 2 Copies to appropriate							
I 1000 Rio Brazos Road, Aztec, NM 87410Off CDistrict IV12201220 S. St. Francis Dr., Santa Fe, NM 87505Sc.						South S	St. Francis	District v	Office in accordance with Rule 116 on back					
1220 S. St. Fran	cis Dr., Santa F	e, NM 87505			San	ta Fe,	NM 8750	)5			side of form			
		Rele	ease N	otifi	catio	n and	l Corre	ctive Act	ion	<u>- 1,</u>				
OP	ERATOR							🛛 Initia	l Report	Final R	eport			
Name of Company: Plains All American Pipeline, L. P. (formerly Link Energy and EOTT)								t: Frank Her	rnandez					
Link Energy and EOTT) Address:								one No.:	·	·····				
PO Box 1660	) 5805 East	Highway 80 N	/idland, [	Texas	79702		915.638	3.3799						
Facility Nan 8" Moore to	ne: Jal #1						Facility 8" Steel	y <b>Type:</b> l Pipeline						
Surface Own	ner: Mexico				Mine	ral Ow	ner:			Lease No.:				
<u>Blate of the n</u>	IIIexileo					NOF	DELEA	SF	<u>,,,,,</u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	· · · · · · · · · · · · · · · · · · ·				
Unit Letter	Section	Township	Range	Feet	from	North/	South Line	Feet from	East/West	County	: Lea			
16	16	T17S	R37E	the				the	Line	Lat. 3	2° 50' 12.36"N			
<b></b>	- L		I	NT A '				E	-L		<u>55 15 20.254 W</u>			
Type of Relea	se:			INA	IURF		Volume of	E Release:		Volume Recovered:				
Crude Oil							200 bbls	barrels		0 bbls barrels				
Source of Rel 8" Steel Pipeli	ease: ne						Date and I	Hour of Occu	rrence:	Date and Hour of Discovery: 10-18-02 @ 8:00 AM				
Was Immedia	te Notice Giv	ven?	5 🗌 No		Not Req	uired	If YES, To Paul Sheel	If YES, To Whom? Paul Sheeley						
By Whom?							Date and Hour 10-18-02 @ 11:00 AM Pat McCasland FPI left message with Paul							
Pat McCastand	I, EFI						Sheeley and sent page to the "ON-CALL" representative							
Was a Water	course Reach	ed? 🗌 Yes	No No				If YES, Volume Impacting the Watercourse: NA							
If a Watercou	rse was Imp	acted, Describ	e Fully.*	NA		I	<u></u>							
Describe Caus of contaminati	se of Problem on. Contamir	n and Remedia nated soil will b	l Action 7 be blended	<b>Faken</b> . on site	* 8" Sto e or disp	eel Pipel osed of.	ine Site will	l be delineated	to determine	the vertical an	d horizontal extents			
<b>Describe Area</b> of contaminati BTEX, i.e., the	Affected an on. Contamir mass sum of	<b>d Cleanup Act</b> nated soil will b f Benzene, Ethy	ion Taker e blended l Benzene	n.* 8,0 on site , Tolue	000 sqft e or disp ene, and	~200' x osed of. Xylenes	40' Site will Remedial G = 50 mg/Kg	be delineated oals: TPH 801 g.	to determine 5m = 1000 m	the vertical and g/Kg, Benzend	d horizontal extents e = 10  mg/Kg, and			
I hereby certify regulations all public health of should their op health or the er other federal, s	y that the info operators are or the environi- perations have nvironment. I state, or local	rmation given a required to rep ment. The acce failed to adequ In addition, NM laws and/or reg	above is tru ort and/or ptance of a nately inve IOCD acco ulations.	ue and file ce a C-14 stigate eptance	complet rtain rele 1 report and ren e of a C-	te to the ease noti by the N nediate c 141 repo	best of my k fications and NMOCD man ontaminatio ort does not n	nowledge and d perform corr rked as "Final n that pose a tl relieve the ope	understand th ective actions Report" does hreat to groun erator of respo	nat pursuant to for releases w not relieve the d water, surfac nsibility for co	NMOCD rules and hich may endanger operator of liability water, human ompliance with any			
Signature:								OIL CO	NSERVA	TION DIV	/ISION			
Printed Name	: Frank Hern	nandez						ad hy District	Suparriser.					
Title: District	Environment	al Supervisor	· ·				Approve	al Date.	supervisor:	Funitation				
rniv. District		ai Supervisor					Approva	ai Datti		Expiration .	Attached			
Date: Octob	per 23, 2003		Phone: 9	15.63	8.3799		Conditio	ons of Approv	al:					

\* Attach Additional Sheets If Necessary

					ALL AMERICA			
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 Ne Minerals and Dil Conservat 220 South St Santa Fe, N	w Mexic Natural ion Div Franci M 8750	co Resources ision s Dr. )5		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 Notific	cation and	Corre	ctive Act	ion				
OPERATOR 1			nitial Report	Final Report				
Name of Company: Plains All American Pipeline, L Link Energy and EOTT)	P. (formerly	Contac	et: Camille R	eynolds				
Address:		Teleph	one No.:		······································			
3112 W. US Hwy 82, Lovington, NM 88260 Facility Name:	<b>-</b> ····	505.44	1.0965 v Type:					
3" Moore to Jal #1		8" Stee	l Pipeline					
Surface Owner: State of New Mexico	Mineral Own	er:			Lease No.:			
LOC	ATION OF	RELEA	SE					
Unit LetterSectionTownshipRangeFeet fr1616T17SR37Ethe	rom North/S	outh Line	Feet from the	East/West Line	<b>County:</b> Lea Lat. 32° 50' 12.36"N Lon. 103° 15' 26 234"W			
ΝΔΤ	LIBE OF B	FLEAS	IF	L				
Type of Release:		Volume of	f Release:		Volume Recovered:			
Crude Oil Source of Release:		200 bbls Date and	barrels Hour of Occur	rence:	0 bbls barrels Date and Hour of Discovery:			
3" Steel Pipeline		EOTT			10-18-02 @ 8:00 AM			
Was immediate Notice Given?	Not Required	Paul Sheel	ey					
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 If YES, Volume Impacting the Watercourse: NA						
f a Watercourse was Impacted Describe Fully * NA								
a water course was impacted, Describe Funy." NA					- ····			
<b>Describe Cause of Problem and Remedial Action Taken.</b> <sup>4</sup> of contamination. Contaminated soil will be blended on site	* 8" Steel Pipelin or disposed of.	ne Site wil	l be delineated	to determine	the vertical and horizontal extents			
<b>Describe Area Affected and Cleanup Action Taken.</b> * The confirmation soil samples were collected from the floor & wastandards, blending of the stockpiled materials was conducte below NMOCD standards, backfilling of the excavation was <b>SEE ATTACHED Talon/LPE SOILS CLOSURE REPOIREMEDIAL ACTIVITIES CONDUCTED.</b>	e crude oil release valls of the excava ed, soil samples w conducted, resto <b>RT, DATED M</b> A	e was exca ation. Onc vere collect ring the sit <b>AY 29, 200</b>	vated: impacte e confirmation ed from the blo e to natural gra 7, WITH AT	d soil was pla soil samples ending areas, ide. FACHMENT	ced adjacent to the excavation, were below NMOCD regulatory once the blending material was <b>TS FOR DETAILS OF</b>			
hereby certify that the information given above is true and or egulations all operators are required to report and/or file cert public health or the environment. The acceptance of a C-141 should their operations have failed to adequately investigate pealth or the environment. In addition, NMOCD acceptance other federal, state, or local laws and/or-regulations.	complete to the b tain release notifi 1 report by the NI and remediate co to f a C-141 report	est of my l ications an MOCD ma intamination rt does not	cnowledge and d perform corr rked as "Final on that pose a th relieve the ope	understand th ective actions Report" does meat to groun rator of respo	hat pursuant to NMOCD rules and for releases which may endanger not relieve the operator of liability d water, surface water, human nsibility for compliance with any			
Signature: V	12		OIL CO	NSERVA	TION DIVISION			
Printed Name: Camille Reynolds	<u>~~``</u>	Approv	ed by District	Supervisor:				
Title: Remediation Coordinator		Approv	al Date:		Expiration Date:			
<b>Date:</b> June 15, 2007 <b>Phone:</b> 505.441.096	5	Conditi	ons of Approv	al:	Attached			
					8" Moore to Jal			

Attach Additional Sheets If Necessary









## 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 sampl	ed Due to Presence of	Phase Separated Hy	drocarbons							
MW-2 ·		Not sampled Due to Presence of Phase Separated Hydrocarbons										
MW-3 .	· · ·	Not sampled Due to Presence of Phase Separated Hydrocarbons										
	11/08/07	Well Installation										
IVI W -4A	12/19/07	Not sampl	ed Due to Presence of	Phase Separated Hy	drocarbons							
MW 5	11/06/07		Well Ins	tallation								
	12/19/07	Not sampl	ed Due to Presence of	Phase Separated Hy	drocarbons							
MW 6	11/06/07		Well Ins	tallation								
	12/19/07	Not sampl	ed Due to Presence of	Phase Separated Hy	drocarbons							
	11/06/07	Well Installation										
12/19/07 Not sampled Due to Presence of Phase Separated Hydro												
MW 8	11/06/07		Well Ins	tallation								
IVI VV -0	12/19/07	Not sampl	ed Due to Presence of	Phase Separated Hy	drocarbons							
MWO	11/07/07		· Well Ins	tallation								
101 00 -9	12/19/07	Not sampl	ed Due to Presence of	Phase Separated Hy	drocarbons							
MW 10	11/07/07		Well Ins	tallation								
WIW-10	12/19/07	Not sampl	ed Due to Presence of	Phase Separated Hy	drocarbons							
MW 11	11/07/07		Well Ins	tallation								
101 00 - 1 1	12/19/07	Not sampl	ed Due to Presence of	Phase Separated Hy	drocarbons							
 MW_12	11/07/07	Well Installation										
101 00 - 12	12/19/07	Not sampled Due to Presence of Phase Separated Hydrocarbons										
MW-13	11/08/07		Well Ins	tallation								
101 00 - 15	12/19/07	5.79	0.683	1.64	4.98							
MW 14	11/08/07		Well Ins	tallation								
101 00 - 1-4	12/19/07	0.0301	<0.00500	0.0158	< 0.00500							
MW-15	11/08/07		Well Installation									
141 44 - 1.5	12/19/07	Not sampl	ed Due to Presence of	Phase Separated Hy	drocarbons							
MW-16	11/09/07		Well Ins	tallation								
141 44 - 10	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

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

All concentrations are in mg/L

<sup>1</sup> Bolded values are in excess of the NMWQCC Remediation Thresholds