

**1R – 412**

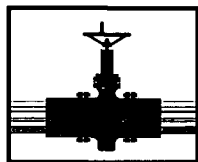
**WORK PLAN**

**DATE:**

**AUGUST 2006**

IR-412  
Work Plan  
August, 2006

August 11, 2006



**PLAINS**  
MARKETING, L.P.

Mr. Ben Stone  
State of New Mexico  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Re: Plains Pipeline, L.P.  
Document Submittal  
Clay Osborn Ranch – Jalmat #1  
Clay Osborn Ranch – Jalmat #2  
Clay Osborn Ranch – Jalmat #3  
Clay Osborn Ranch – Rocky Top #2  
Clay Osborn Ranch – Jalmat #22A  
Clay Osborn Ranch – East Shell North  
Jal, Lea County, New Mexico

Dear Mr. Stone:

Plains Pipeline, L.P. (Plains) is pleased to submit the attached Site Investigation Reports and Site-Specific Remediation Work Plans for six of the soil remediation project sites located on the Osborn's Rocky Top Ranch in Jal, Lea County, New Mexico. These documents include the results of an additional soil investigation conducted at the site and the remediation plan are based on the General Remediation Work Plan recently submitted to the New Mexico Oil Conservation Commission (NMOCD) by Plains.

Should you have any questions or comments, please contact me at (713) 646-4657.

Sincerely,

Jeffrey P. Dann, P.G.  
Sr. Environmental Specialist  
Plains All American

Attachments: Jalmat #1, #2, #3, #22A, East Shell North and Rocky Top #2, 22B Site Investigation Report and Site-Specific Remediation Work Plans

File: n:\jeff-files\Osborn-RockyTopRanch\Jalmat-1 CovrLtr.doc

**SITE INVESTIGATION REPORT  
and  
SITE-SPECIFIC REMEDIATION WORK PLAN**

**Clay Osborn Rocky Top Ranch  
Jalmat #1 Release Site**

**SW1/4 SW1/4 UL-M, Section 7, Township 25 North, Range 37 East  
Latitude 32° 8' 25" North, Longitude 103° 12' 38" West  
Lea County, New Mexico**

**PLAINS PIPELINE, L.P. SRS ID: 2000-10606**

Prepared For:

Plains Pipeline, L.P.  
333 Clay Street  
Suite 1600  
Houston, Texas 77002

Prepared By:

SDG Environmental Services  
6611 Vialinda, Suite 204  
Houston, Texas 77083

**August 2006**

  
\_\_\_\_\_  
Kenneth Cody  
SDG Environmental Services

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## 1.0 INTRODUCTION

SDG Environmental Services (SDG) was retained by Plains Pipeline, L.P. (Plains) to evaluate historical information, conduct additional investigation, and develop a site-specific remediation work plan for the Clay Osborn Jalmat 1 release site located on the Clay Osborn Rocky Top Ranch in Lea County, New Mexico. Plains is the owner/operator of several pipelines present on the Clay Osborne Rocky Top Ranch located near Jal, New Mexico.

This site is located in Unit Letter-M, in the SW¼ SW ¼ of Section 7, Township 25 North, Range 37 East, approximately 1-mile northwest of Jal, Lea County, New Mexico. A topographic Site Location Map is provided as Figure 1. The latitude is 32° 7' 58" North, and Longitude 103° 12' 38" West. The site is characterized by a pipeline right-of-way in a pasture and an area of surface staining.

The hydrocarbon impacted area is the result of a historical release and the date of the release as well as the volume of crude oil released and recovered is not known. The visually stained area is approximately 2,300 ft<sup>2</sup> and a small stockpile of approximately 10 CY of stained soils is located near the south end of the visible surface staining. A summary of site activities is provided in Section 2.0.

Plains prepared and submitted a General Remediation Work Plan dated April 2006 to address the release sites located on the Rocky Top Ranch. The objective of the General Remediation Work Plan was to remediate crude oil impacted sites at the Rocky Top Ranch, consistent with the remediation/abatement goals and objectives set forth in the New Mexico Oil Conservation Division (NMOCD) "NMOCD Guidelines for Remediation of Leaks, Spills, and Releases, August 13, 1993." The General Remediation Work Plan proposed appropriate risk-based thresholds for contaminants of concern (CoCs) based on relative risk posed by the CoC residuals to local groundwater, area water wells, surface water bodies and impacts on surface reclamation.

The General Remediation Work Plan proposed remediation strategies for sites would be developed under the following three scenarios.

1. Surface Restoration Sites (Scenario 1)

This scenario was developed for sites where investigation data indicates that the surface area has restored itself naturally, the surface expression of the release is difficult to identify, the impacts are limited to the surface and/or shallow soils, and there is no threat to groundwater.

2. Total Excavation (Scenario 2)

For sites where data indicates that soil impacts are limited in vertical extent (i.e. 10 to 15 feet in depth) and total excavation of the impacted soil is practical.

3. Limited Excavation and Risk-based Closure (scenario 3)

For sites where data indicates that soil impacts in the source area extend to between 10 feet and 45 feet below ground surface (bgs) and excavation of all the impacted soil to below NMOCD guidelines is not practical.

The General Remediation Work Plan was conditionally approved by the NMOCD in a letter to Plains dated May 30, 2006.

The soil analytical data in the EPI December 2001 Jalmat #1 Site Investigation Report as well as the visual observations, field photoionization detector (PID) measurement, and soil analytical data from a site investigation conducted in May 2006 by SDG was used in development of this Site Specific Remediation Work Plan.

## **2.0 SUMMARY OF SITE ACTIVITIES**

On 27 July 2000 through 3 August 2000, initial subsurface horizontal and vertical delineation was conducted by EPI with the installation of nine (9) soil borings installed at the site. Soil borings were installed to depths of 15 to 45 feet bgs and are identified in Figure 2 as BH-1 through BH-9. Soil samples were collected at depths of 2, 5, and at 5 foot intervals to the depth of the boring, field screened with a PID and analyzed for BTEX and TPH-GRO/DRO. Laboratory results indicated that constituent concentrations of BTEX were greater than NMOCD regulatory standards in five (5) soil samples collected from two of the boring locations. These values in excess of NMOCD standards occurred at depths of greater than 25 ft at boring location BH-5 and at a depth of 5 ft at boring location BH-8. Laboratory results indicated that TPH-GRO/DRO concentrations exceed 100 mg/kg TPH in fifteen (15) of the soil samples and the remaining thirty-one (31) soil samples were either below NMOCD regulatory standards or were not detected above the laboratory method detection limits. The highest concentrations were exhibited in samples collected from BH-5 and BH-8. A table summarizing the analytical results from the EPI Investigation Report dated December 2001 is provided in Appendix C.

According to the December 2001 report, soil data from BH5 indicated an increasing CoC gradient justifying a groundwater investigation. A temporary monitor well was installed, developed, and sampled near the location of BH-5 to determine if groundwater was impacted. Benzene, toluene, and m,p,o-xylenes were below New Mexico Water Quality Control Commission (NMWCC) standards. A permanent groundwater monitor well was installed and groundwater samples collected in February, September and October 2003. Analytical results were below laboratory detection limits for BTEX and TPH and a request for a "No Further Action" determination was made in a Annual Monitoring Report dated April 2004. NMOCD responded in a letter dated July 8, 2004 and requested addition information regarding previous soil sampling conducted at the site. This additional information was submitted by Plains.

On 24 May 2006, SDG conducted an additional soil investigation in an effort to verify the vertical extent of impacts previously reported at the Clay Osborn Jalmat #1 site. Clay Osborn Jalmat #1 site was identified as an area of stained soils along the Plains pipeline right-of-way.

Upon arrival at the site, it appeared that the permanent monitor well was not located at the BH5 location east of the pipeline as shown on historical drawings, but was located on the west side of the pipeline in the central area of the site. One soil boring was installed in the Clay Osborne Jalmat #1 area and is identified in Figure 2 as JM1-SB1. This boring was located between the monitor well and BH5 in an area exhibiting the most visible surface staining. Soil Boring JM1-SB1 was installed to 40 feet bgs and no groundwater was encountered.

The soil boring was installed by Straub Corporation, Stanton, Texas utilizing an air rotary drill rig. Soil samples were collected at 2 ft, 5 ft, 10 ft, 15 ft, 20 ft, 25, 30, 35 and 40 ft depths using a core sampler. Soil samples were split for headspace analysis to screen for total volatile organic vapor concentrations in soils. A one quart zip-lock bag was filled one-half full of soil and sealed leaving the remainder of the bag filled with air. The sample was allowed to volatilize for five to ten minutes. One end of the bag was opened and the PID probe inserted carefully into the bag and the bag re-sealed around the probe as much as possible to prevent vapors from escaping. The peak measurement associated with the sample was recorded. The peak PID measurements are provided on the soil boring log included in Appendix B.

### **3.0 NEW MEXICO OIL CONSERVATION DIVISION (NMOCD) SOIL CLASSIFICATION**

The December 8, 2001 Site Investigation Report provided a depth to water at the site of 52.4 ft bgs as indicated in the temporary monitor well installed at the site. Based on the analytical results of soil samples collected in May 2006, the hydrocarbon impacted soil extends from the surface to between 10 to 15 feet bgs (historical sampling indicates potential depths of up to 40 feet bgs). Therefore, less than 50 feet of non-impacted soil remains between the last known impacted soil depth and groundwater. The resulting Depth to Groundwater Ranking Score is 20.

The site is greater than 1000 ft from any public water supply source and greater than 200 feet from any private domestic water supply well. The resulting Wellhead Protection Ranking Score is 0.

During remediation activities associated with the Texas-New Mexico Pipeline conducted in the 1990's, a retention basin was constructed to contain runoff from the land farm located east of the site. The retention basin is located greater than 1000 ft southwest of the site. At the time of the May 2006 investigation, there was no water in the basin. The resulting Distance to Surface Water Body Ranking Score is 0.

Based on the individual ranking scores identified above, the site has an NMOCD Total Ranking Score of >19, which establish the following remediation levels:

Benzene: 10 mg/kg

BTEX: 50 mg/kg

TPH: 100 mg/kg

#### **4.0 DISTRIBUTION OF HYDROCARBONS IN THE UNSATURATED ZONE**

The estimated area of soils impacted above NMOCD Standards is shown in Figure 3. The area is estimated to be approximately 7,200 square feet. The vertical extent of soils impacted above NMOCD standards based on the data obtained in the May 2006 subsurface sampling is between 10 to 15 feet bgs.

On 24 May 2006, an air rotary drill rig, operated by Straub Corporation, Stanton, Texas, was utilized to delineate the vertical extent of crude oil impacted soil at the site. Soil samples were collected in the subsurface from the soil boring at 5 feet intervals; field screened with a PID and selected soil samples were analyzed for constituent concentrations of BTEX and TPH-GRO/DRO. Laboratory data sheets and chain-of-custody forms are attached (Appendix A). No visual observations of free phase hydrocarbons were encountered during the installation of the soil boring. The soil boring log is provided in Appendix B.

Soil Boring JM1-SB1 was installed at a location of the most visible surface staining between the monitor well location and the location of the historical boring BH5. This location was selected based on the data provided in the December 2001 Investigation Report and conditions observed at the site, which indicated that the impacted soils at this location were not vertically delineated. The soil boring was installed to 40 feet bgs and samples were collected at 2, 5, 10, 15, 20, 25, 30, 35 and 40 feet bgs, field screened with a PID and submitted for laboratory analysis of TPH GRO/DRO and BTEX. Analytical results indicated that constituent concentrations of BTEX were not detected above the laboratory method detection limits in any of the samples. Analytical results indicated that TPH concentration exceeded the NMOCD standard of 100 mg/kg at 2 feet bgs (376 mg/kg), at 5 feet bgs (2180 mg/kg), and at 10 feet bgs (579 mg/kg). TPH was detected at 15 feet bgs (35.5 mg/kg) and at 20 feet bgs (47.5 mg/kg) but did not exceed NMOCD standard of 100 mg/kg. TPH was not detected above the laboratory detection limits in soil samples collected at 25, 30, 35, and 40 feet bgs.

Based on the May 2006 investigation, the extent of hydrocarbon impacted soils has been delineated vertically. The horizontal extent of hydrocarbon impacted soils



shallower than 10 feet bgs have not been fully delineated and historical data from the initial June 2000 investigation indicates deeper impacts may be present in the vicinity of the historical borings BH2 and BH5. However, based on the results of the soil samples collected and analyzed from surrounding soil borings, it is likely that the horizontal impacts are limited in extent and further delineation sampling can take place during remediation activities.

## **5.0 DISTRIBUTION OF HYDROCARBONS IN THE SATURATED ZONE**

No saturated conditions were observed in the boring. Soil boring JM1-SB1 was installed to 40 feet bgs and no groundwater was encountered. The depth of hydrocarbon impacted soils above 100 mg/kg TPH throughout most of the site is limited to less than 15 feet bgs. A permanent groundwater monitor well was installed and monitored for three quarters with no indication that hydrocarbons from the historical release have impacted the saturated zone above NMWQCC standards.

## **6.0 RECOMMENDATIONS FOR REMEDIATION**

Based on the results of the vertical soil boring investigation conducted at the site, it appears that hydrocarbon impacted soils are present to depths of 10 to 15 feet bgs. Historical data indicates that there may be deeper impacts in the vicinity of BH2 and BH5. Given the NMOCD guideline cleanup standard of 100 mg/kg TPH, an estimated 3,700 cubic yards of impacted soil and segregated clean overburden will require excavation. Because the horizontal impacts have not been fully defined, delineation samples will be collected commensurate with excavation and/or cleanup confirmation sampling activities.

The area with observed staining and where laboratory analytical results indicate that surface impacts do not extend to below 2 feet bgs as defined by soil boring BH1, BH3, BH4, BH6, and BH9 will be addressed under the General Work Plan Scenario 1 involving the following procedures as were outlined under the General Remediation Work Plan and approved by NMOCD in the May 2006 NMOCD approval letter:

### **General Work Plan Scenario 1**

- Scrape the surface asphaltines where apparent and remove;
- Blend the underlying 1 to 2 feet of soil with native soil and contour;
- Do not disturb areas that have already re-vegetated.

Because the impacts greater than 100 mg/kg TPH are limited in vertical extent (i.e. 10 to 15 feet in depth) as defined by soil borings BH7, BH8, and JM1-SB1; these soils will be remediated under the General Work Plan Scenario 2 (Total Excavation) involving the following procedures as were outlined in the approved General Remediation Work Plan and includes NMOCD conditions presented in the May 2006 NMOCD approval letter.

#### General Work Plan Scenario 2

- Excavation of impacted soil to below site guidelines;
- Collect and analyze soil sample from the walls and floor of the excavation to confirm that the remediation has met site guidelines;
- Relocation of excavated soil to the centralized soil treatment area for blending and aeration;
- Collect and analyze treated soil to confirm that the soil treatment activities have met site guidelines;
- Prepare a risk based closure proposal for submittal and approval by the NMOCD;
- Backfill the excavation with treated soil and restore the area to as close as possible to pre-spill conditions.

Should impacted soils be determined to be limited in extent based on additional delineation samples collected commensurate with excavation activities, the soils may be blended on site and stockpiled adjacent to the excavation pending approval of the NMOCD Project Manager.

Impacted soils above the NMOCD standard have been found in the most recent investigation to be shallower than 15 feet bgs. However, historical data indicates soils in the vicinity of BH2 and BH5 may have vertical hydrocarbon impacts extending below 15 feet bgs. If these areas of deeper impacts are verified based on analytical results of soil samples collected commensurate with excavation activities, Plains recommends that the approved General Work Plan Closure Scenario 3 be applied. Under this scenario, an impermeable barrier consisting of an oversized 20-mil polyethylene liner will be permanently installed at a minimum depth of 10 feet to inhibit vertical migration of contaminants in soil left in place below the cap. A 3-foot wide clean area buffer will be established around the impacted soil in the floor of the excavation. The buffer extent will be determined using a calibrated PID and confirmed by laboratory analysis of grab samples collected around the perimeter of the excavation. The liner shall be cushioned above and below with a 3 to 4-inch layer of sand or geotextile to protect it from puncture and tearing during the backfilling process. Installation of the 20-mil polyethylene liner at a minimum depth of 10 feet bgs will protect the barrier from erosion and human intrusion for a term sufficient to allow natural biodegrading of contaminants in the soil.

The clean overburden and impacted soils will be blended and utilized as backfill. Soil samples will be collected at a rate of one sample per 500 cubic yards to verify constituent concentrations of BTEX are below NMOCD guidelines and TPH-GRO/DRO are below 1000 mg/kg as approved for backfill over liners. Once the excavation has been confirmed to meet NMOCD standards or the installation of the 20-mil poly liner is completed, backfilling of the excavation will be initiated with the blended soil. The backfilled excavation will be contoured to the original grade surrounding the site and reseeded with approved grass seed.

A request for closure will be submitted to the NMOCD, upon completion of backfilling activities. Plains is requesting approval from NMOCD to implement these proposed final remediation and site closure activities.

## **7.0 QA/QC PROCEDURES**

### **Soil Sampling**

Soil samples will be delivered to Environmental Lab of Texas, Inc. in Odessa, Texas for BTEX, TPH analyses using the methods described below. Soil samples will be analyzed for BTEX, TPH-GRO/DRO within fourteen days following the collection date.

The soil samples will be analyzed as follows:

- BTEX concentrations in accordance with EPA Method 8021B, 5030
- TPH concentrations in accordance with modified EPA Method 8015M GRO/DRO

### **Decontamination of Equipment**

Cleaning of the sampling equipment will be the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment will be cleaned with Liqui-Nox<sup>®</sup> detergent and rinsed with distilled water.

### **Laboratory Protocol**

The laboratory will be responsible for proper QA/QC procedures after signing the chain-of-custody form. These procedures will be either transmitted with the laboratory reports or are on file at the laboratory.

## **8.0 LIMITATIONS**

SDG Environmental Services has prepared this Site Investigation Report and Site-Specific Remediation Work Plan to the best of its ability. No other warranty, expressed or implied, is made or intended.

SDG Environmental Services has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. SDG Environmental Services has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. SDG Environmental Services has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. SDG Environmental Services also notes that the

facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of Plains Pipeline, L.P. The information contained in this report including all exhibits and attachments, may not be used by any other party without the express consent of SDG Environmental Services and Plains Pipeline, L.P.

## DISTRIBUTION

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- Copy 4: Kenneth Cody  
SDG Environmental Services  
6611 Vialinda, Suite 204  
Houston, Texas 77083  
[kcody@sdgenv.com](mailto:kcody@sdgenv.com)

TABLE 1

## SOIL SAMPLE ANALYTICAL RESULTS SUMMARY

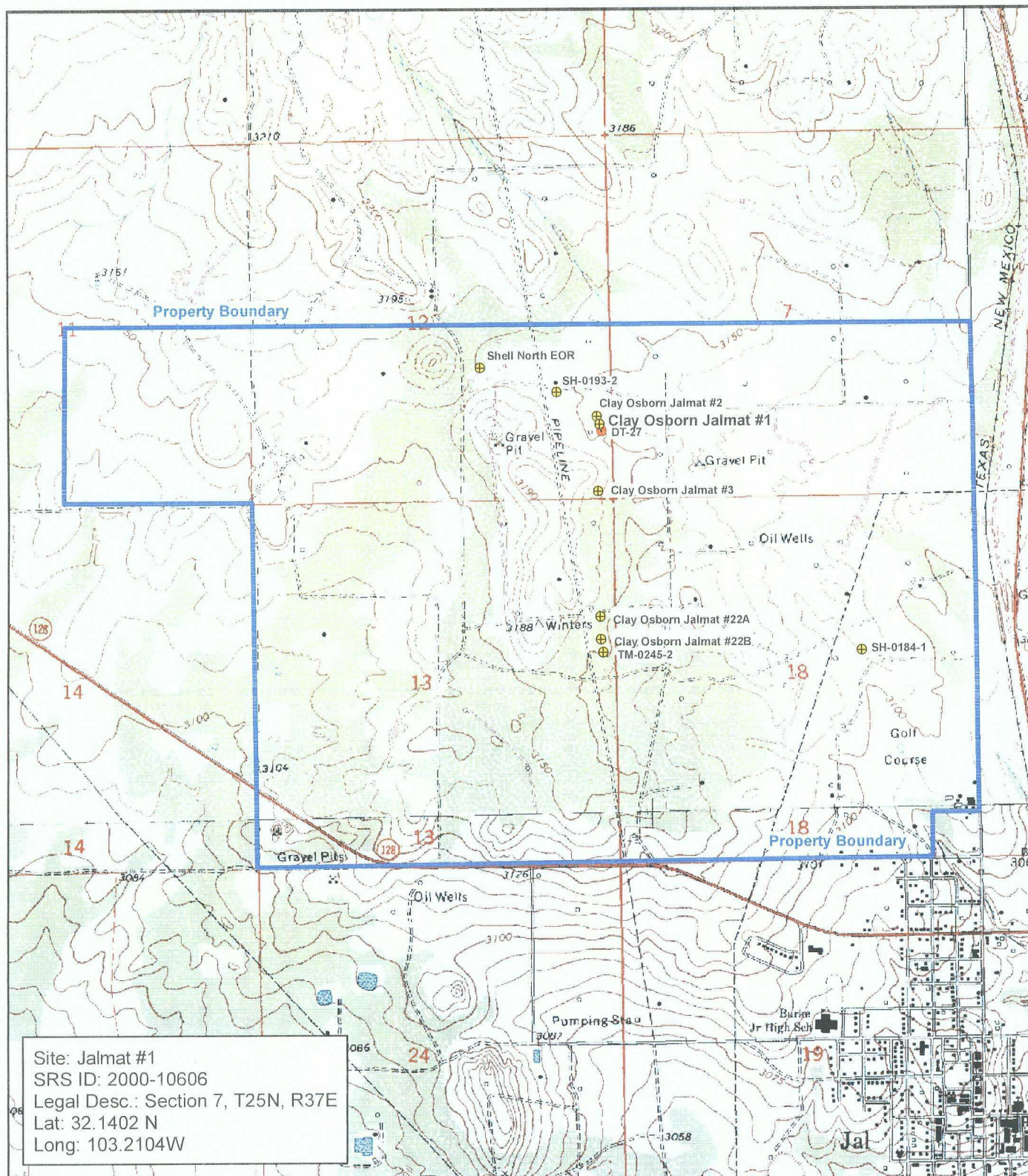
PLAINS PIPELINE, L. P.  
Jalmat #1  
LEA COUNTY, NEW MEXICO  
PLAINS EMS NO: 2000-10606

SAMPLE LOCATION	DEPTH ft bgs	SAMPLE DATE	LABORATORY I.D.	METHOD: EPA SW 846-8021B, 5030				METHOD: 8015M				TOTAL TPH
				BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL- BENZENE (mg/kg)	M,P- XYLENES (mg/kg)	O-XYLENE (mg/kg)	C6-C12 (mg/kg)	C12-C28 (mg/kg)	C28-C35 (mg/kg)	
JM1-SB1-2	2'	05/24/06	6E26002-01	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<10	340	36.4	376
JM1-SB1-5	5'	05/24/06	6E26002-02	<0.0250	0.0130 J	0.267	0.794	0.345	279	1750	156	2180
JM1-SB1-10	10'	05/24/06	6E26002-03	<0.0250	<0.0250	0.0396	0.0353	0.0353	56.9	494	27.8	579
JM1-SB1-15	15'	05/24/06	6E26002-04	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<10	35.5	<10	35.5
JM1-SB1-20	20'	05/24/06	6E26002-05	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<10	47.4	<10	47.4
JM1-SB1-25	25'	05/24/06	6E26002-01	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<10	8.49 J	<10	<10
JM1-SB1-30	30'	05/24/06	6E26002-02	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<10	6.71 J	<10	<10
JM1-SB1-35	35'	05/24/06	6E26002-03	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<10	<10	<10	<10
JM1-SB1-40	40'	05/24/06	6E26002-04	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<10	<10	<10	<10

&lt; indicates the constituent was not detected

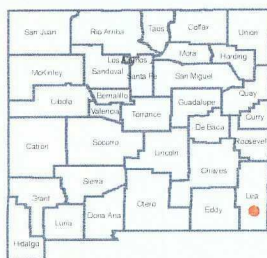
J indicates estimated value (detected below method reporting limit)





Map Source: USGS, Jal NW New Mexico Topographic Map, 1980.

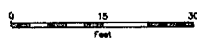
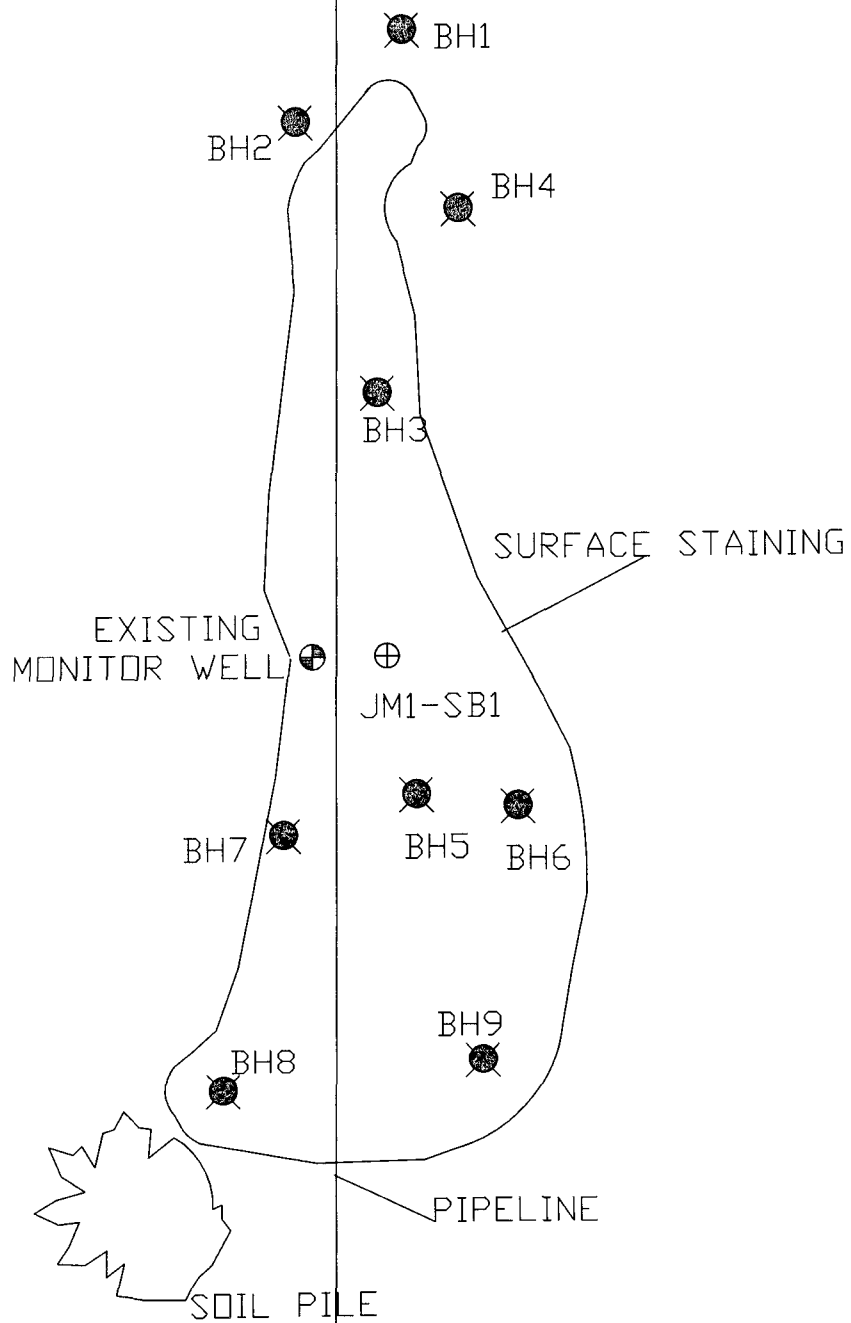
0 1,000 2,000  
 Feet



ENVIRONMENTAL SERVICES

Jalmat #1  
 SRS ID: 2000-10606  
 Plains Marketing L.P.  
 Lea County, New Mexico

Figure 1: Site Location Map



LEGEND:

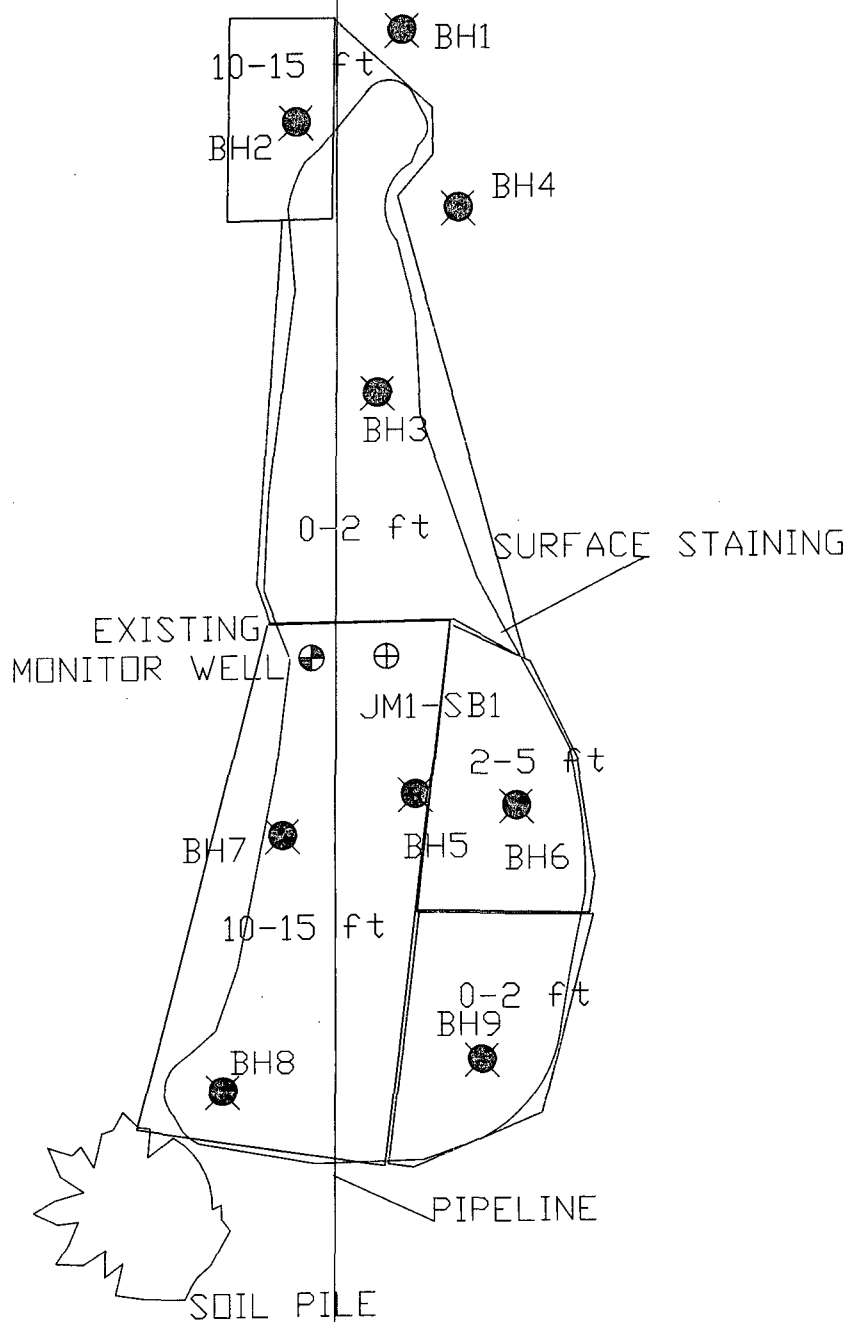
- ⊕ Soil boring Locations
- ⊗ Historical Soil Boring Locations
- ⊕ Monitor Well



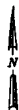
Clay Osborn Jalmat #1  
Lea County, New Mexico  
Plains SRS ID: 2000-10606

Figure 2: Soil Boring Locations





0 15 30  
Feet



LEGEND:

- ⊕ Soil boring Locations
- ⊗ Historical Soil Boring Locations
- ⊕ Monitor Well

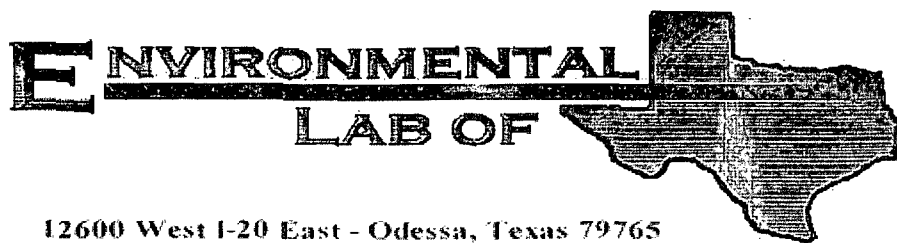


ENVIRONMENTAL SERVICES

Clay Osborn Jalmat #1  
Lea County, New Mexico  
Plains SRS ID: 2000-10606

Figure 3: Estimated Excavation Area and Depth

**APPENDIX A  
ENVIRONMENTAL LABORATORY OF TEXAS  
ANALYTICAL RESULTS**



12600 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: Jalmat Clay Osborne #1

Project Number: 2000-10606

Location: JM 1

Lab Order Number: 6E26002

Report Date: 06/05/06

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

Project: Jalmat Clay Osborne #1  
Project Number: 2000-10606  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Reported:**  
06/05/06 16:50

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
JM1-SB1-2	6E26002-01	Soil	05/24/06 08:55	05/26/06 09:34
JM1-SB1-5	6E26002-02	Soil	05/24/06 09:00	05/26/06 09:34
JM1-SB1-10	6E26002-03	Soil	05/24/06 09:05	05/26/06 09:34
JM1-SB1-15	6E26002-04	Soil	05/24/06 09:10	05/26/06 09:34
JM1-SB1-20	6E26002-05	Soil	05/24/06 09:15	05/26/06 09:34
JM1-SB1-25	6E26002-06	Soil	05/24/06 09:20	05/26/06 09:34
JM1-SB1-30	6E26002-07	Soil	05/24/06 09:25	05/26/06 09:34
JM1-SB1-35	6E26002-08	Soil	05/24/06 09:30	05/26/06 09:34
JM1-SB1-40	6E26002-09	Soil	05/24/06 09:35	05/26/06 09:34

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

Project: Jalmat Clay Osborne #1  
Project Number: 2000-10606  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:  
06/05/06 16:50

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>JM1-SB1-2 (6E26002-01) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EF60108	06/01/06	06/02/06	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		110 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.2 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EE63112	05/31/06	05/31/06	EPA 8015M	
Carbon Ranges C12-C28	340	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	36.4	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	376	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		108 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		105 %	70-130		"	"	"	"	
<b>JM1-SB1-5 (6E26002-02) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EF60108	06/01/06	06/02/06	EPA 8021B	
Toluene	J [0.0130]	0.0250	"	"	"	"	"	"	J
Ethylbenzene	0.267	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.794	0.0250	"	"	"	"	"	"	
Xylene (o)	0.345	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		105 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		123 %	80-120		"	"	"	"	S-04
Carbon Ranges C6-C12	279	10.0	mg/kg dry	1	EE63112	05/31/06	05/31/06	EPA 8015M	
Carbon Ranges C12-C28	1750	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	156	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	2180	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		99.4 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		114 %	70-130		"	"	"	"	
<b>JM1-SB1-10 (6E26002-03) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EF60108	06/01/06	06/02/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.0396	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.0353	0.0250	"	"	"	"	"	"	
Xylene (o)	0.0353	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		89.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.5 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	56.9	10.0	mg/kg dry	1	EE63112	05/31/06	05/31/06	EPA 8015M	

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

Project: Jalmat Clay Osborne #1  
Project Number: 2000-10606  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:  
06/05/06 16:50

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>JM1-SB1-10 (6E26002-03) Soil</b>									
<b>Carbon Ranges C12-C28</b>	<b>494</b>	10.0	mg/kg dry	1	EE63112	05/31/06	05/31/06	EPA 8015M	
<b>Carbon Ranges C28-C35</b>	<b>27.8</b>	10.0	"	"	"	"	"	"	
<b>Total Hydrocarbon nC6-nC35</b>	<b>579</b>	10.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		97.6 %	70-130		"	"	"	"	
<i>Surrogate: 1-Chlorooctadecane</i>		101 %	70-130		"	"	"	"	
<b>JM1-SB1-15 (6E26002-04) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EF60108	06/01/06	06/02/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		108 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EE63112	05/31/06	05/31/06	EPA 8015M	
<b>Carbon Ranges C12-C28</b>	<b>35.5</b>	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
<b>Total Hydrocarbon nC6-nC35</b>	<b>35.5</b>	10.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		93.4 %	70-130		"	"	"	"	
<i>Surrogate: 1-Chlorooctadecane</i>		89.6 %	70-130		"	"	"	"	
<b>JM1-SB1-20 (6E26002-05) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EF60108	06/01/06	06/02/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>ND</b>	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		102 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		86.8 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EE63112	05/31/06	05/31/06	EPA 8015M	
<b>Carbon Ranges C12-C28</b>	<b>47.4</b>	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
<b>Total Hydrocarbon nC6-nC35</b>	<b>47.4</b>	10.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		101 %	70-130		"	"	"	"	
<i>Surrogate: 1-Chlorooctadecane</i>		97.4 %	70-130		"	"	"	"	

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

Project: Jalmat Clay Osborne #1  
Project Number: 2000-10606  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:  
06/05/06 16:50

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>JMI-SBI-25 (6E26002-06) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EF60108	06/01/06	06/02/06	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		90.8 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.0 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EE63112	05/31/06	05/31/06	EPA 8015M	
<b>Carbon Ranges C12-C28</b>	<b>J [8.49]</b>	10.0	"	"	"	"	"	"	J
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		128 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		120 %	70-130		"	"	"	"	

**JMI-SBI-30 (6E26002-07) Soil**

Benzene	ND	0.0250	mg/kg dry	25	EF60108	06/01/06	06/02/06	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		98.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		82.2 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EE63112	05/31/06	05/31/06	EPA 8015M	
<b>Carbon Ranges C12-C28</b>	<b>J [6.71]</b>	10.0	"	"	"	"	"	"	J
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		111 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		105 %	70-130		"	"	"	"	

**JMI-SBI-35 (6E26002-08) Soil**

Benzene	ND	0.0250	mg/kg dry	25	EF60108	06/01/06	06/02/06	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		105 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.2 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EE63112	05/31/06	05/31/06	EPA 8015M	

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

Project: Jalmat Clay Osborne #1  
Project Number: 2000-10606  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:  
06/05/06 16:50

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>JM1-SB1-35 (6E26002-08) Soil</b>									
Carbon Ranges C12-C28	ND	10.0	mg/kg dry	1	EE63112	05/31/06	05/31/06	EPA 8015M	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		95.4 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		90.2 %	70-130		"	"	"	"	
<b>JM1-SB1-40 (6E26002-09) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EF60108	06/01/06	06/02/06	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		95.8 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.2 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EE63112	05/31/06	05/31/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon nC6-nC35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		116 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		110 %	70-130		"	"	"	"	



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**Reported:**  
06/05/06 16:50

**General Chemistry Parameters by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>JM1-SB1-2 (6E26002-01) Soil</b>									
% Moisture	8.2	0.1	%	1	EE62901	05/26/06	05/27/06	% calculation	
<b>JM1-SB1-5 (6E26002-02) Soil</b>									
% Moisture	19.7	0.1	%	1	EE62901	05/26/06	05/27/06	% calculation	
<b>JM1-SB1-10 (6E26002-03) Soil</b>									
% Moisture	16.3	0.1	%	1	EE62901	05/26/06	05/27/06	% calculation	
<b>JM1-SB1-15 (6E26002-04) Soil</b>									
% Moisture	4.5	0.1	%	1	EE62901	05/26/06	05/27/06	% calculation	
<b>JM1-SB1-20 (6E26002-05) Soil</b>									
% Moisture	6.0	0.1	%	1	EE62901	05/26/06	05/27/06	% calculation	
<b>JM1-SB1-25 (6E26002-06) Soil</b>									
% Moisture	4.2	0.1	%	1	EE62901	05/26/06	05/27/06	% calculation	
<b>JM1-SB1-30 (6E26002-07) Soil</b>									
% Moisture	9.3	0.1	%	1	EE62901	05/26/06	05/27/06	% calculation	
<b>JM1-SB1-35 (6E26002-08) Soil</b>									
% Moisture	11.6	0.1	%	1	EE62901	05/26/06	05/27/06	% calculation	
<b>JM1-SB1-40 (6E26002-09) Soil</b>									
% Moisture	15.5	0.1	%	1	EE62901	05/26/06	05/27/06	% calculation	

Environmental Lab of Texas

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1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Jalmat Clay Osborne #1  
Project Number: 2000-10606  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:  
06/05/06 16:50

### Organics by GC - Quality Control Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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#### Batch EE63112 - Solvent Extraction (GC)

##### Blank (EE63112-BLK1)

Prepared & Analyzed: 05/31/06

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 Hydrocarbon nC6-nC35	ND	10.0	"						
Surrogate: 1-Chlorooctane	45.7		mg/kg	50.0		91.4	70-130		
Surrogate: 1-Chlorooctadecane	44.3		"	50.0		88.6	70-130		

##### LCS (EE63112-BS1)

Prepared & Analyzed: 05/31/06

Carbon Ranges C6-C12	557	10.0	mg/kg wet	500		111	75-125		
Carbon Ranges C12-C28	547	10.0	"	500		109	75-125		
Carbon Ranges C28-C35	ND	10.0	"	0.00			75-125		
Total Hydrocarbon nC6-nC35	1100	10.0	"	1000		110	75-125		
Surrogate: 1-Chlorooctane	53.1		mg/kg	50.0		106	70-130		
Surrogate: 1-Chlorooctadecane	45.3		"	50.0		90.6	70-130		

##### Calibration Check (EE63112-CCV1)

Prepared: 05/31/06 Analyzed: 06/01/06

Carbon Ranges C6-C12	294		mg/kg	250		118	80-120		
Carbon Ranges C12-C28	297		"	250		119	80-120		
Total Hydrocarbon nC6-nC35	590		"	500		118	80-120		
Surrogate: 1-Chlorooctane	63.5		"	50.0		127	70-130		
Surrogate: 1-Chlorooctadecane	61.9		"	50.0		124	70-130		

##### Matrix Spike (EE63112-MS1)

Source: 6E26002-04

Prepared & Analyzed: 05/31/06

Carbon Ranges C6-C12	649	10.0	mg/kg dry	524	ND	124	75-125		
Carbon Ranges C12-C28	649	10.0	"	524	35.5	117	75-125		
Carbon Ranges C28-C35	ND	10.0	"	0.00	ND		75-125		
Total Hydrocarbon nC6-nC35	1300	10.0	"	1050	35.5	120	75-125		
Surrogate: 1-Chlorooctane	55.1		mg/kg	50.0		110	70-130		
Surrogate: 1-Chlorooctadecane	46.1		"	50.0		92.2	70-130		

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Fax: (432) 687-4914

Reported:  
06/05/06 16:50

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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**Batch EE63112 - Solvent Extraction (GC)**

**Matrix Spike Dup (EE63112-MSD1)**

Source: 6E26002-04

Prepared & Analyzed: 05/31/06

Carbon Ranges C6-C12	647	10.0	mg/kg dry	524	ND	123	75-125	0.309	20	
Carbon Ranges C12-C28	638	10.0	"	524	35.5	115	75-125	1.71	20	
Carbon Ranges C28-C35	ND	10.0	"	0.00	ND		75-125		20	
Total Hydrocarbon nC6-nC35	1290	10.0	"	1050	35.5	119	75-125	0.772	20	
Surrogate: 1-Chlorooctane	54.6		mg/kg	50.0		109	70-130			
Surrogate: 1-Chlorooctadecane	46.4		"	50.0		92.8	70-130			

**Batch EF60108 - EPA 5030C (GC)**

**Blank (EF60108-BLK1)**

Prepared & Analyzed: 06/01/06

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	43.3		mg/kg	40.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	34.7		"	40.0		86.8	80-120			

**LCS (EF60108-BS1)**

Prepared & Analyzed: 06/01/06

Benzene	1.14	0.0250	mg/kg wet	1.25		91.2	80-120			
Toluene	1.14	0.0250	"	1.25		91.2	80-120			
Ethylbenzene	1.29	0.0250	"	1.25		103	80-120			
Xylene (p/m)	2.54	0.0250	"	2.50		102	80-120			
Xylene (o)	1.32	0.0250	"	1.25		106	80-120			
Surrogate: a,a,a-Trifluorotoluene	47.3		mg/kg	40.0		118	80-120			
Surrogate: 4-Bromofluorobenzene	41.8		"	40.0		104	80-120			

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Project Manager: Camille Reynolds

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Reported:  
06/05/06 16:50

**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
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**Batch EF60108 - EPA 5030C (GC)**

**Calibration Check (EF60108-CCV1)**

Prepared: 06/01/06 Analyzed: 06/02/06

Benzene	47.0		ug/kg	50.0		94.0	80-120			
Toluene	47.1		"	50.0		94.2	80-120			
Ethylbenzene	57.1		"	50.0		114	80-120			
Xylene (p/m)	106		"	100		106	80-120			
Xylene (o)	54.2		"	50.0		108	80-120			
Surrogate: a,a,a-Trifluorotoluene	42.1		"	40.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	40.0		"	40.0		100	80-120			

**Matrix Spike (EF60108-MS1)**

Source: 6E25032-02

Prepared: 06/01/06 Analyzed: 06/02/06

Benzene	1.16	0.0250	mg/kg dry	1.29	ND	89.9	80-120			
Toluene	1.17	0.0250	"	1.29	ND	90.7	80-120			
Ethylbenzene	1.29	0.0250	"	1.29	ND	100	80-120			
Xylene (p/m)	2.71	0.0250	"	2.59	ND	105	80-120			
Xylene (o)	1.35	0.0250	"	1.29	ND	105	80-120			
Surrogate: a,a,a-Trifluorotoluene	42.2		ug/kg	40.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	41.9		"	40.0		105	80-120			

**Matrix Spike Dup (EF60108-MSD1)**

Source: 6E25032-02

Prepared: 06/01/06 Analyzed: 06/02/06

Benzene	1.13	0.0250	mg/kg dry	1.29	ND	87.6	80-120	2.59	20	
Toluene	1.13	0.0250	"	1.29	ND	87.6	80-120	3.48	20	
Ethylbenzene	1.23	0.0250	"	1.29	ND	95.3	80-120	4.81	20	
Xylene (p/m)	2.58	0.0250	"	2.59	ND	99.6	80-120	5.28	20	
Xylene (o)	1.28	0.0250	"	1.29	ND	99.2	80-120	5.68	20	
Surrogate: a,a,a-Trifluorotoluene	41.9		ug/kg	40.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	38.9		"	40.0		97.2	80-120			

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

Project: Jalmat Clay Osborne #1  
Project Number: 2000-10606  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:  
06/05/06 16:50

**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
<b>Batch EE62901 - General Preparation (Prep)</b>										
<b>Blank (EE62901-BLK1)</b>				Prepared: 05/26/06 Analyzed: 05/30/06						
% Moisture	ND	0.1	%							
<b>Blank (EE62901-BLK2)</b>				Prepared: 05/26/06 Analyzed: 05/30/06						
% Moisture	ND	0.1	%							
<b>Duplicate (EE62901-DUP1)</b>				<b>Source: 6E26001-01</b>		Prepared: 05/26/06 Analyzed: 05/27/06				
% Solids	79.6		%		79.2			0.504	20	
<b>Duplicate (EE62901-DUP2)</b>				<b>Source: 6E26001-21</b>		Prepared: 05/26/06 Analyzed: 05/27/06				
% Solids	99.5		%		99.4			0.101	20	
<b>Duplicate (EE62901-DUP3)</b>				<b>Source: 6E26001-41</b>		Prepared: 05/26/06 Analyzed: 05/27/06				
% Solids	99.1		%		99.1			0.00	20	
<b>Duplicate (EE62901-DUP4)</b>				<b>Source: 6E26001-61</b>		Prepared: 05/26/06 Analyzed: 05/27/06				
% Solids	75.2		%		76.2			1.32	20	
<b>Duplicate (EE62901-DUP5)</b>				<b>Source: 6E26003-07</b>		Prepared: 05/26/06 Analyzed: 05/27/06				
% Solids	98.0		%		98.3			0.306	20	
<b>Duplicate (EE62901-DUP6)</b>				<b>Source: 6E26004-07</b>		Prepared: 05/26/06 Analyzed: 05/27/06				
% Solids	97.9		%		96.7			1.23	20	
<b>Duplicate (EE62901-DUP7)</b>				<b>Source: 6E26005-06</b>		Prepared: 05/26/06 Analyzed: 05/27/06				
% Solids	99.3		%		99.5			0.201	20	
<b>Duplicate (EE62901-DUP8)</b>				<b>Source: 6E26008-04</b>		Prepared: 05/26/06 Analyzed: 05/27/06				
% Solids	98.6		%		91.7			7.25	20	

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Reported:  
06/05/06 16:50

### 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:

*Raland K. Tuttle*

Date:

6/5/2006

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

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

Client: Plains P/L

Date/Time: 05-26-06 @ 0934

Order #: 6E26002

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	I.S	C
Shipping container/cooler in good condition?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Custody Seals intact on shipping container/cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not present	
Custody Seals intact on sample bottles?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<u>Not present</u>	
Chain of custody present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Sample Instructions complete on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Chain of Custody signed when relinquished and received?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Chain of custody agrees with sample label(s)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Container labels legible and intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Sample Matrix and properties same as on chain of custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Samples in proper container/bottle?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Samples properly preserved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Sample bottles intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Sufficient sample amount for indicated test?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Applicable	

Other observations:

Variance Documentation:

Contact Person: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted by: \_\_\_\_\_  
Regarding: \_\_\_\_\_

Corrective Action Taken:

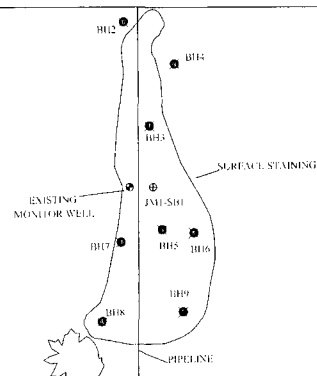


**APPENDIX B**  
**SOIL BORING LOGS**



# ENVIRONMENTAL SERVICES

## LOCATION MAP



SOIL BORING NUMBER JM1-SB1

PROJECT 2000-10606 LOCATION Ja1, N.M.

TOTAL BORING DEPTH 40' BOREHOLE DIA (in) 8.25"

DRILLING CO. Straun Drilling DRILLING METHOD HSA

GEOLOGIST Kenneth Cody DATE DRILLED 5/24/06

TOP OF CASING ELEV. (ft) N/A GROUND SURFACE ELV. (ft) N/A

INTERVAL	SAMPLE RECOVERY %	LOG	PID (ppm)	Sample	LITHOLOGIC DESCRIPTION/COMMENTS	REMARKS
0						
2	100		1.9	JM1-SB1-2	Sand, pink, fine grained, well sorted, well rounded, with caliche	Mod. odor No Staining
4	100		55.7	JM1-SB1-5	Sand, tan, fine grained, well sorted, well rounded, with some coarse gravel	Mod. odor No Staining
6					Sand, tan, fine grained, well sorted, well rounded, dry	Mod. odor No Staining
10	100		28.3	JM1-SB1-10	Sand, red, fine grained, well sorted, well rounded.	Strong odor No Staining
14	100		4.7	JM1-SB1-15	Sand, red to pink, fine grained, well sorted, well rounded.	Strong odor No Staining
20	100		1.7	JM1-SB1-20	Sand, slightly silty, red to pink, fine grained, well sorted, well rounded, increasing gravel	Mod. odor No Staining
26	100		1.1	JM1-SB1-25	Sand, slightly silty, red, fine grained, well sorted, well rounded, fine gravel	Mod. odor No Staining
30	100		0.0	JM1-SB1-30	Sandy clay, red, dense, strong, dry, interbedded with gravel, some caliche	Sit odor No Staining
36	100		0.0	JM1-SB1-35	Sandy clay, red, dense, strong, dry, interbedded with gravel	Sit odor No Staining
40	100		0.0	JM1-SB1-40		Sit odor No Staining
TD= 40'						

**APPENDIX C**  
**EPI June 2000 Soil Sample Results**

# E.O.T.T. Energy Pipeline Jalmat 1 Jalmat #1 Delineation Data

Borehole	Sampling Interval (F.T. BGS <sup>1</sup> )	SAMPLE ID#	Date Taken	Lithology	HEADSPACE VOC <sup>2</sup> (ppm)	GRO <sup>3</sup> mg/Kg	DRO <sup>4</sup> mg/Kg	TPH <sup>5</sup> mg/Kg	BTEX mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethyl Benzene mg/Kg	m,p- Xylene mg/Kg	o-Xylene mg/Kg
1	2	EJMG1-02	6/21/2000	Blow Sand	1.7	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	5	EJMG1-05	6/21/2000	Blow Sand	1.2	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	10	EJMG1-10	6/21/2000	Blow Sand	0.1	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	15	EJMG1-15	6/21/2000	Blow Sand	1.3	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
2	2	EJMG2-02	6/21/2000	Blow Sand	1.3	10	10	20	0.639	0.100	0.161	0.178	0.100	0.100
	5	EJMG2-05	6/21/2000	Blow Sand	34.0	10	482	492	0.74	0.100	0.100	0.151	0.255	0.134
	10	EJMG2-10	6/21/2000	Blow Sand	170.0	249	2922	3171	9.497	0.100	1.470	0.797	4.000	3.130
	15	EJMG2-15	6/21/2000	Blow Sand	127.0	93	1395	1488	7.799	0.100	1.160	0.619	3.720	2.200
3	2	EJMG3-02	6/21/2000	Blow Sand	21.9	10	112	122	0.52	0.100	0.120	0.100	0.100	0.100
	5	EJMG3-05	6/21/2000	Blow Sand	20.4	10	10	20	0.549	0.100	0.149	0.100	0.100	0.100
	10	EJMG3-10	6/21/2000	Blow Sand	0.0	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	15	EJMG3-15	6/21/2000	Blow Sand	0.0	10	10	20	0.569	0.100	0.169	0.100	0.100	0.100
4	2	EJMG4-02	6/21/2000	Blow Sand	0.0	10	28	38	0.5	0.100	0.100	0.100	0.100	0.100
	5	EJMG4-05	6/21/2000	Blow Sand	0.0	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	10	EJMG4-10	6/21/2000	Blow Sand	0.0	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	15	EJMG4-15	6/21/2000	Blow Sand	0.0	10	10	20	0.56	0.100	0.160	0.100	0.100	0.100

100 ppm Isobutylene calibration gas = 101 ppm

<sup>1</sup>bgs - below ground surface

<sup>2</sup>VOC-Volatile Organic Contaminants/Constituents

<sup>3</sup>GRO-Gasoline Range Organics

<sup>4</sup>DRO-Diesel Range Organics

<sup>5</sup>TPH-Total Petroleum Hydrocarbon = GRO+DRO.

<sup>6</sup>Bolded values are in excess of the New Mexico Oil Conservation Division guideline threshold for the parameter

<sup>7</sup>Italicized values are < the instrument detection limit.

<sup>8</sup>N/A Not Analyzed

Reported detection limits are considered "de minimus" values and are included in the GRO/DRO and BTEX summations.

## E.O.T.T. Energy Pipeline Jalmat 1

Borehole	Sampling Interval (FT. BGS <sup>1</sup> )	SAMPLE ID#	Date Taken	Lithology	HEADSPACE VOC <sup>2</sup> (ppm)	GRO <sup>3</sup> mg/Kg	DRO <sup>4</sup> mg/Kg	TPH <sup>5</sup> mg/Kg	BTEX mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethyl Benzene mg/Kg	m,p-Xylene mg/Kg	o-Xylene mg/Kg
5	2	EJMG5-02		Sand	0.0	20	20	40	0.5	0.100	0.100	0.100	0.100	0.100
	5	EJMG5-05		Sand	0.0	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	10	EJMG5-10		Sand	1.7	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	15	EJMG5-15		Sand	600.0	1032	2941	3973	20.92	0.100	4.340	3.080	9.080	4.400
	20	EJMG5-20		Sand	418.0	104	2296	2400	3.493	0.100	0.245	0.452	1.700	0.996
6	25	EJMG5-25		Sand	500.0	1123	3483	4606	57.25	0.100	12.300	10.200	25.800	8.850
	30	EJMG5-30		Sand	400.0	1171	4655	5826	30.45	0.100	5.040	5.490	14.100	5.720
	35	EJMG5-35		Sand	400.0	1813	4819	6632	180	0.100	35.100	37.900	80.400	26.500
	40	EJMG5-40		Sand	200.0	2183	6109	8292	141.6	0.100	18.300	29.500	70.900	22.800
	45	EJMG5-45		Sand	500.0	4489	7321	11810	272.19	6.090	88.100	56.600	86.600	34.800
7	2	EJMG6-02		Sand	0.0	50	93	143	2.486	0.100	0.979	0.390	0.735	0.282
	5	EJMG6-05		Sand	0.0	10	10	20	1.895	0.100	0.100	0.134	1.110	0.451
	10	EJMG6-10		Sand	0.0	10	10	20	0.553	0.100	0.100	0.100	0.153	0.100
	15	EJMG6-15		Sand	0.0	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	20	EJMG7-02		Sand	51.0	10	86	96	0.5	0.100	0.100	0.100	0.100	0.100
8	5	EJMG7-05		Sand	600.0	302	804	1106	48.7	0.100	3.280	4.520	28.700	12.100
	10	EJMG7-10		Sand	10.0	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	15	EJMG7-15		Sand	300.0	10	71	81	0.536	0.100	0.136	0.100	0.100	0.100
	20	EJMG7-20		Sand	0.0	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	25	EJMG7-25		Sand	0.0	10	10	20	0.829	0.100	0.100	0.100	0.383	0.146
9	2	EJMG8-02		Sand	100.0	741	11546	12287	0.682	0.100	0.100	0.100	0.134	0.248
	5	EJMG8-05		Sand	800.0	2411	6298	8709	144.4	0.100	13.100	18.800	88.700	23.700
	10	EJMG8-10		Sand	40.0	10	158	168	1.075	0.100	0.100	0.137	0.528	0.210
	15	EJMG8-15		Sand	7.3	10	10	20	3.073	0.100	0.381	0.306	1.390	0.896
	20	EJMG8-20		Sand	5.0	10	10	20	3.645	0.100	0.456	0.379	1.690	1.020
9	2	EJMG9-02		Sand	0.0	10	10	20	8.716	0.100	2.440	0.866	3.350	1.960
	5	EJMG9-05		Sand	0.0	10	10	20	0.51	0.100	0.110	0.100	0.100	0.100
	10	EJMG9-10		Sand	0.0	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	15	EJMG9-15		Sand	0.0	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100
	15	EJMG9-15		Sand	0.0	10	10	20	0.5	0.100	0.100	0.100	0.100	0.100

100 ppm Isobutylene calibration gas = 101 ppm

<sup>1</sup>bgs = below ground surface<sup>2</sup>VOC-Volatile Organic Contaminants/Constituents<sup>3</sup>GRO-Gasoline Range Organics<sup>4</sup>DRO-Diesel Range Organics<sup>5</sup>TPH-Total Petroleum Hydrocarbon = GRO+DRO.<sup>6</sup>Bolded values are in excess of the New Mexico Oil Conservation Division guideline threshold for the parameter<sup>7</sup>Italicized values are < the instrument detection limit.<sup>8</sup>N/A Not Analyzed

Reported detection limits are considered "de minimus" values and are included in the GRO/DRO and BTEX summations.