# 1R – 470

# WORK PLAN

# DATE:
# JULY 2006

IR-470
Work Plan
July 2006

PLAINS
PIPELINE, L.P.

July 11, 2006

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 – Rocky Top #3 Site Remediation Work Plans
Plains SRS Number – Rocky Top #3
Jal, Lea County, New Mexico

Dear Mr. Stone:

Plains Pipeline, L.P. (Plains) is pleased to submit the attached Site Investigation Report and Site-Specific Remediation Work Plan for one of the soil remediation project sites located on the Osborn's Rocky Top Ranch in Jal, Lea County, New Mexico. This document includes the results of an additional soil investigation conducted at the site and the remediation plan is 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

Attachment: Site Investigation Report and Site-Specific Remediation Work Plan

File: n/jeff-files/Osborn-RockyTopRanch/RockyTop-3 CovrLtr.doc

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

## Clay Osborn Rocky Top Ranch
## DT-27 Release Site

**SW1/4 SW1/4 UL-M, Section 7, Township 25 North, Range 37 East**
**Latitude 32° 8′ 27″ North, Longitude 103° 12′ 37″ West**
**Lea County, New Mexico**

**PLAINS PIPELINE, L.P. SRS ID: ROCKY TOP 3**

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

**July 2006**

Kenneth Cody
SDG Environmental Services

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### Tables



### Figures



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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 DT-27 release site located on the Clay Osborne 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 36 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° 8′ 27″ North, and Longitude 103° 12′ 37″ West. The site is characterized by a right-of-way for the pipeline in a pasture. The pipeline is currently not in operation.

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 100 $ft^2$. The site is located approximately 150 feet south of the Jalmat #1 site. 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 contaminates 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 visual observations, field photoionization detector (PID) measurement, and soil analytical data from a site investigation conducted in May 2006 was used in development of this Site Specific Remediation Work Plan.

## 2.0 SUMMARY OF SITE ACTIVITIES

On 29 June 2005, one surface soil sample was collected of observable surface staining by others at the site identified as DT-27. The sample identified as OTS 21 was analyzed for BTEX and TPH-GRO/DRO. Laboratory results indicated that constituent concentrations of BTEX were either below NMOCD regulatory standards or not detected above laboratory method detection limits. Laboratory results indicated that TPH-GRO/DRO concentrations exceed 100 mg/kg TPH in sample OTS 21 (1,520 mg/kg).

On 25 May 2006, SDG conducted an additional soil investigation in an effort to determine the vertical and horizontal extent of impacts at the DT-27 site. The DT-27 site was identified as an area of stained soils approximately 10 feet in diameter adjacent to the pipeline right of way.

Four soil borings were installed in the DT-27 area and are identified in Figure 2 as DT27-SB1, DT27-SB2, DT27-SB3 and DT27-SB4.

Soil borings were installed by Straub Corporation, Stanton, Texas utilizing an air rotary drill rig. Soil samples were typically collected at 2 ft, 5 ft, 10 ft, 15 ft, and 20 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 logs included in Appendix C.

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

The depth to water at the site is estimated to be approximately 50 feet bgs based on a monitor well located at a nearby site. Based on the analytical results of soil samples, the hydrocarbon impacted soil extends 10 to 15 feet bgs, therefore, less than 100 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 southeast 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 950 square feet. The vertical extent of soils impacted above NMOPCD standards based on the data obtained in the 25 May 2006 subsurface sampling is 10 to 15 feet bgs.

On 25 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 B). No visual observations of free phase hydrocarbons were encountered during the installation of the soil borings. Soil boring logs are provided in Appendix C.

Soil Boring DT27-SB1 was installed at a location 20 feet west of the visible surface staining of the historical release. The soil boring was installed to 20 feet bgs and samples were collected at 2, 5, 10, 15, and 20 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 collected. Analytical results indicated that TPH concentrations exceeded the NMOCD standard of 100 mg/kg at 5 feet bgs (3,700 mg/kg), and 10 feet bgs (560 mg/kg). Laboratory results of soil samples collected at 2, 15, and 20 feet bgs indicated that TPH-GRO/DRO concentrations were not detected above the laboratory method detection limits.

Soil Boring DT27-SB2 was installed within the visibly stained area of the historical release site. The soil boring was installed to 20 feet bgs and samples were collected at 2, 5, 10, 15 and 20 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 concentrations exceeded the NMOCD standard of 100 mg/kg at 2 feet bgs (330 mg/kg), 5 feet bgs (500 mg/kg) and 10 feet bgs (411 mg/kg). TPH was also detected at 20 feet bgs at an estimated concentration of 6.72 mg/Kg which is estimated because it is above the method detection limit but below the laboratory reporting limit. TPH was not detected above the laboratory detection limits in soil sample collected at 15 feet bgs.

Soil Boring DT27-SB3 was installed at a location 20 feet southeast of the visible surface staining. The soil boring was installed to 20 feet bgs and samples were collected at 2, 5, 10, 15, and 20 feet bgs, field screened with a PID and submitted for laboratory analysis of TPH GRO/DRO and BTEX. Analytical results indicated that BTEX constituent M,P-xylenes concentration of 0.0309 mg/kg in the sample collected at 2 feet bgs. Analytical results indicated that constituent concentrations of BTEX were not detected above the laboratory method detection limits in any of the other samples. Analytical results indicated that TPH concentrations were detected in the sample collected at 2 feet bgs (12.0 mg/kg); however this concentration does not exceed the NMOCD standard of 100 mg/kg. TPH was also detected at 5 feet bgs at an estimated concentration of 8.38 mg/Kg which is estimated because it is above the method detection limit but below the laboratory reporting limit. Laboratory results of soil samples collected at 10, 15 and 20 feet bgs indicated that TPH-GRO/DRO concentrations were not detected above the laboratory method detection limits.

Soil Boring DT27-SB4 was installed at a location 20 feet northeast of the visible surface staining. The soil boring was installed to 20 feet bgs and samples were collected at 2, 5, 10, 15, and 20 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. TPH was detected at 2 feet bgs at an estimated concentration of 7.23 mg/Kg which is estimated because it is above the method detection limit but below the laboratory reporting limit. Analytical results

indicated that TPH concentrations were not detected above the laboratory method detection limits at 5, 10, 15 and 20 feet bgs.

The extent of hydrocarbon impacted soils has been delineated vertically. The horizontal extent of impacted soils has been defined to the northeast and southeast. Hydrocarbon impacted soils have not been fully delineated to the west of the surface stained area and DT27-SB1. However, based on the results of the soil samples collected and analyzed from surrounding soil borings, it is likely that the horizontal impact around DT27-SB1 is limited in extent.

## 5.0 DISTRIBUTION OF HYDROCARBONS IN THE SATURATED ZONE

No saturated conditions were observed in any of the borings. Soil boring DT27- SB1 was installed to 20 feet bgs and no groundwater was encountered. The depth of hydrocarbon impacted soils above 100 mg/kg TPH is limited to less than 15 feet bgs. Therefore there is no indication that hydrocarbons from the historical release have impacted the saturated zone.

## 6.0 RECOMMENDATIONS FOR REMEDIATION

Based on the results of the horizontal and vertical soil boring investigation conducted at the site, it appears that hydrocarbon impacted soils are present to depths of less than 15 feet bgs. Given the NMOCD guideline cleanup standard of 100 mg/kg TPH, an estimated 333 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. Because the impacts greater than 100mg/kg TPH are limited in vertical extent (i.e. 10 to 15 feet in depth) these soils will be remediated under the General Work Plan Scenario 2 (complete 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.

- Excavation of impacted soils to not less than 10 feet bgs or until site remediation standards are met.
- Collect and analyze soil samples from the walls and floor of the excavation to confirm that the remediation has met the site remediation standards.
- Relocation of the 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 the site guidelines.
- Install a 20-mil impermeable polyethylene liner in the bottom of the excavation to isolate the excavated/treated soils from the underlying non-impacted soils to prevent vertical migration of petroleum hydrocarbons and allow these soils to further attenuate over time (liner installation details are provided below).

- Backfill the excavation with soil treated to 1000 mg/kg TPH 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.

Additionally, should areas where vertical hydrocarbon impacted soils extend below 15 feet bgs be determined based on analytical results 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 contaminates in the soil.

The clean overburden and impacted soils 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® 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 Preliminary Investigation Report and 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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Plains All American
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New Mexico Energy, Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 88240
ed.martin@state.nm.us

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Kenneth Cody
SDG Environmental Services
6611 Vialinda, Suite 204
Houston, Texas 77083
kcody@sdgenv.com

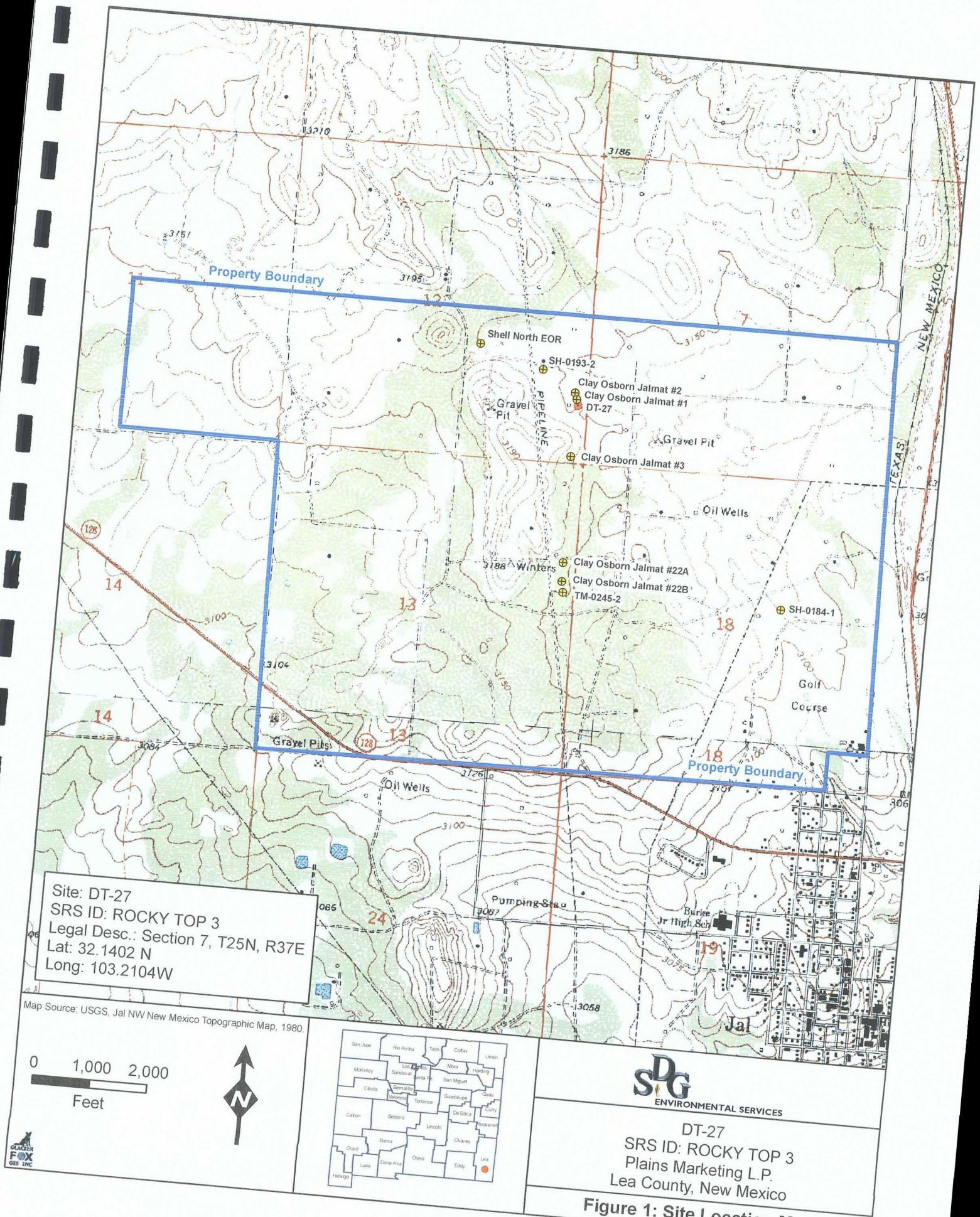
TABLE 1

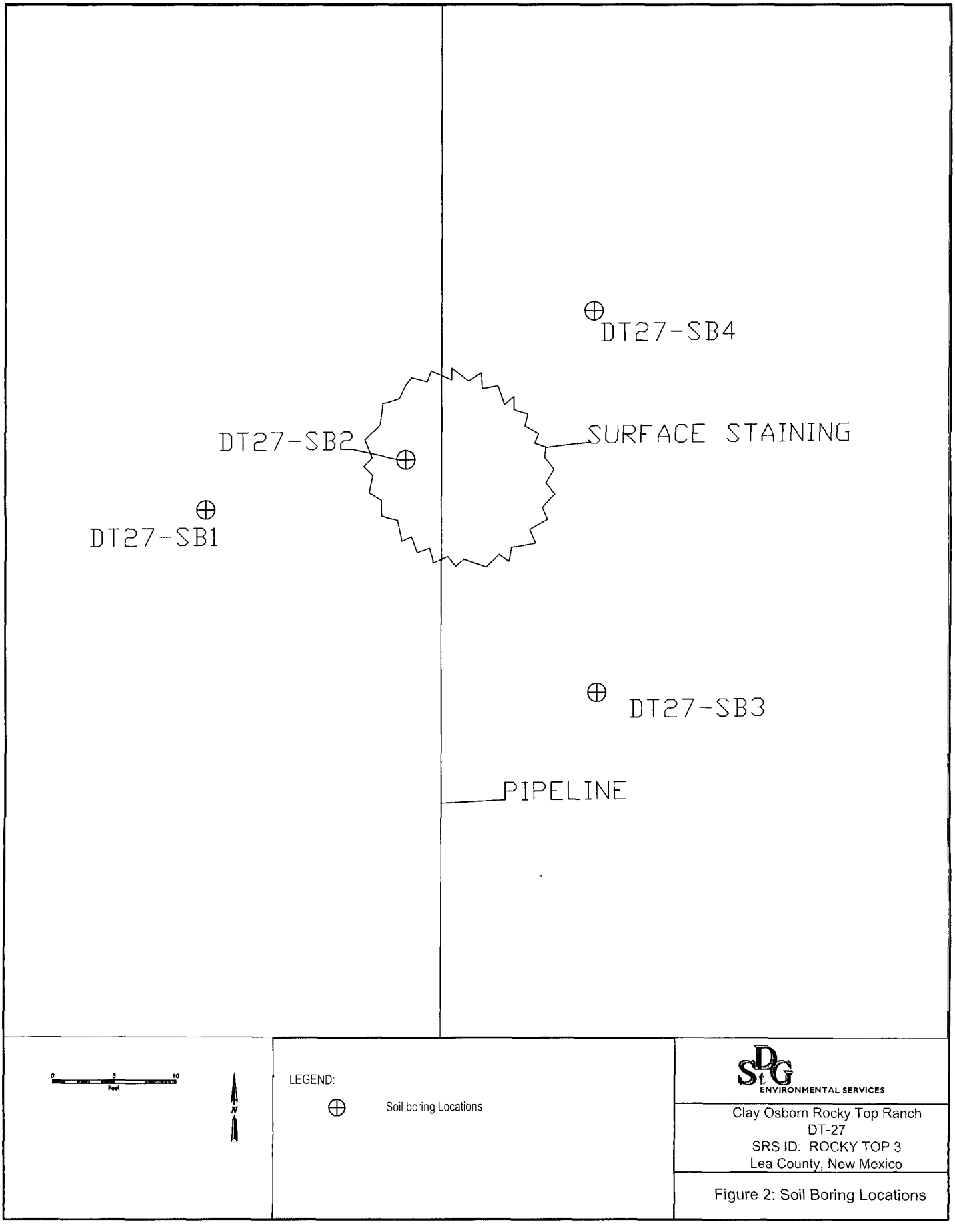
SOIL SAMPLE ANALYTIACAL RESULTS SUMMARY

PLAINS PIPELINE L. P.
DT-27
LEA COUNTY, NEW MEXICO
PLAINS SRS ID: Rocky Top 3

| SAMPLE LOCATIONS | DEPTH ft bgs | SAMPLE DATE | LABORATORY I.D. | METHOD: EPA SW 846-8021B, 5030 | | | | | METHOD: 8015M | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 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) | C6-C35 (mg/kg) |
| DT27-SB1-2 | 2' | 05/25/06 | 6E26003-06 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |
| DT27-SB1-5 | 5' | 05/25/06 | 6E26003-07 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | 19.4 | 3210 | 472 | 3700 |
| DT27-SB1-10 | 10' | 05/25/06 | 6E26003-08 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | 10.4 | 509 | 41 | 560 |
| DT27-SB1-15 | 15' | 05/25/06 | 6E26003-09 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |
| DT27-SB1-20 | 20' | 05/25/06 | 6E26003-10 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |
| DT27-SB2-2 | 2' | 05/25/06 | 6E26003-01 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | 216 | 114 | 330 |
| DT27-SB2-5 | 5' | 05/25/06 | 6E26003-02 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | 351 | 149 | 500 |
| DT27-SB2-10 | 10' | 05/25/06 | 6E26003-03 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | 7.48 J | 351 | 59.5 | 411 |
| DT27-SB2-15 | 15' | 05/25/06 | 6E26003-04 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |
| DT27-SB2-20 | 20' | 05/25/06 | 6E26003-05 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |
| DT27-SB3-2 | 2' | 05/25/06 | 6E26003-11 | <0.0250 | <0.0250 | <0.0250 | 0.0309 | <0.0250 | <10 | 12.0 | <10 | 12.0 |
| DT27-SB3-5 | 5' | 05/25/06 | 6E26003-12 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | 8.38 J | <10 | <10 |
| DT27-SB3-10 | 10' | 05/25/06 | 6E26003-13 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |
| DT27-SB3-15 | 15' | 05/25/06 | 6E26003-14 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |
| DT27-SB3-20 | 20' | 05/25/06 | 6E26003-15 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |
| DT27-SB4-2 | 2' | 05/25/06 | 6E26003-16 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | 7.23 J | <10 | <10 |
| DT27-SB4-5 | 5' | 05/25/06 | 6E26003-17 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |
| DT27-SB4-10 | 10' | 05/25/06 | 6E26003-18 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |
| DT27-SB4-15 | 15' | 05/25/06 | 6E26003-19 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |
| DT27-SB4-20 | 20' | 05/25/06 | 6E26003-20 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <0.0250 | <10 | <10 | <10 | <10 |

< indicates the constituent was not detected
J indicates estimated value (detected below method reporting limit)

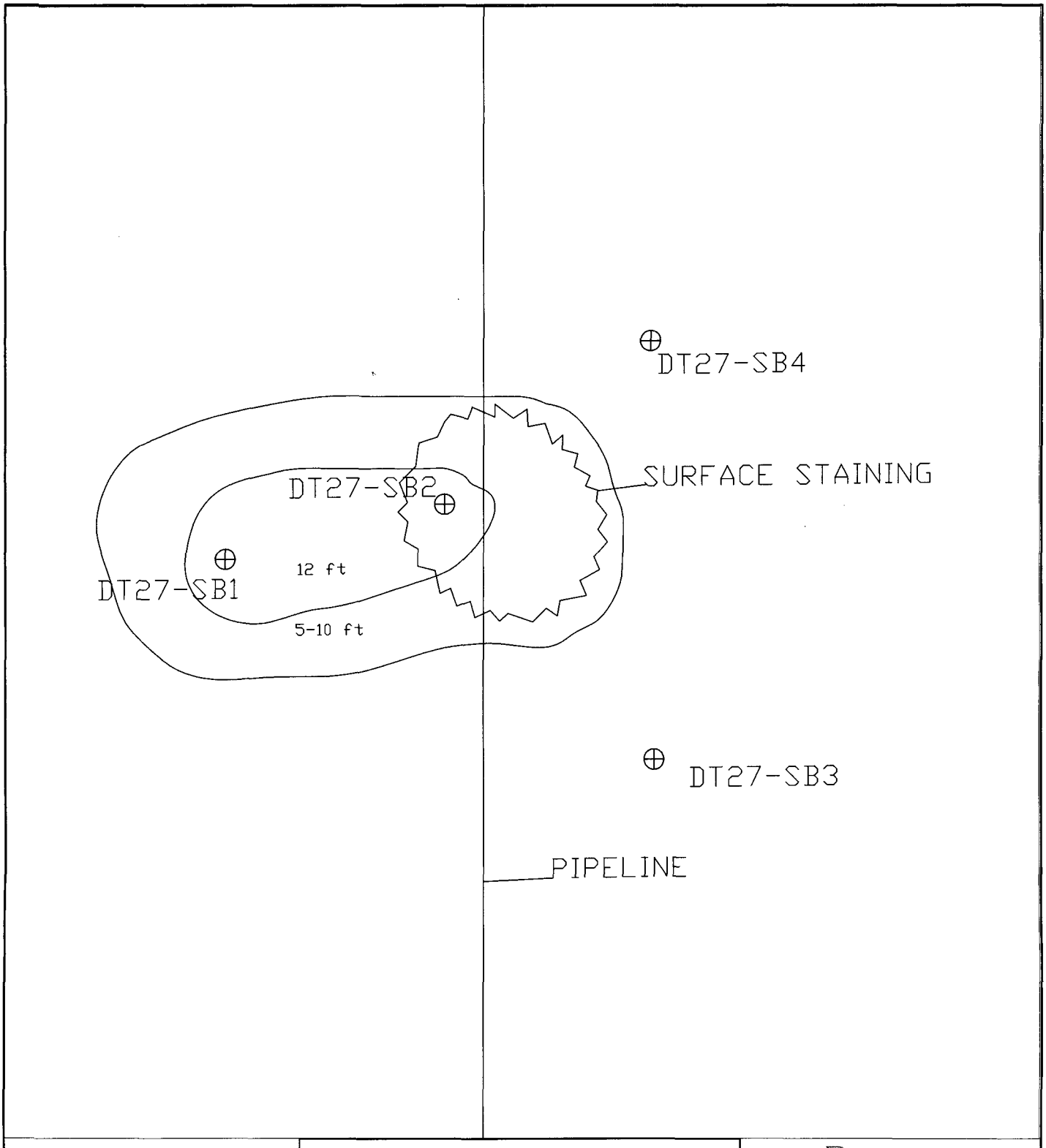

Property Boundary
Shell North EOR
SH-0193-2
Clay Osborn Jalmat #2
Clay Osborn Jalmat #1
DT-27
Gravel Pit
PIPELINE
Gravel Pit
Clay Osborn Jalmat #3
Oil Wells
Winters
Clay Osborn Jalmat #22A
Clay Osborn Jalmat #22B
TM-0245-2
SH-0184-1
Golf Course
Gravel Pits
Oil Wells
Property Boundary
Pumping Stau
Jal
NEW MEXICO
TEXAS
Site: DT-27
SRS ID: ROCKY TOP 3
Legal Desc.: Section 7, T25N, R37E
Lat: 32.1402 N
Long: 103.2104W
Map Source: USGS, Jal NW New Mexico Topographic Map, 1980.
0 1,000 2,000
Feet
N
ENVIRONMENTAL SERVICES
DT-27
SRS ID: ROCKY TOP 3
Plains Marketing L.P.
Lea County, New Mexico
Figure 1: Site Location Map




SDG ENVIRONMENTAL SERVICES

Clay Osborn Rocky Top Ranch
DT-27
SRS ID: ROCKY TOP 3
Lea County, New Mexico

Figure 2: Soil Boring Locations




0 5 10
Feet

N

LEGEND:

⊕ Soil boring Locations

SDG ENVIRONMENTAL SERVICES

Clay Osborn Rocky Top Ranch
DT-27
SRS ID: ROCKY TOP 3
Lea County, New Mexico

Figure 3: Estimated Excavation Area and Depth

# APPENDIX A
# SITE PHOTOGRAPHS

# APPENDIX B
# ENVIRONMENTAL LABORATORY OF TEXAS
# ANALYTICAL RESULTS

ENVIRONMENTAL LAB OF

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: DT-27

Lab Order Number: 6E26003

Report Date: 06/05/06

| | | |
|---|---|---|
| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| DT27-SB2-2 | 6E26003-01 | Soil | 05/24/06 10:10 | 05/26/06 09:34 |
| DT27-SB2-5 | 6E26003-02 | Soil | 05/24/06 10:15 | 05/26/06 09:34 |
| DT27-SB2-10 | 6E26003-03 | Soil | 05/24/06 10:20 | 05/26/06 09:34 |
| DT27-SB2-15 | 6E26003-04 | Soil | 05/24/06 10:25 | 05/26/06 09:34 |
| DT27-SB2-20 | 6E26003-05 | Soil | 05/24/06 10:30 | 05/26/06 09:34 |
| DT27-SB1-2 | 6E26003-06 | Soil | 05/24/06 11:30 | 05/26/06 09:34 |
| DT27-SB1-5 | 6E26003-07 | Soil | 05/24/06 11:35 | 05/26/06 09:34 |
| DT27-SB1-10 | 6E26003-08 | Soil | 05/24/06 11:40 | 05/26/06 09:34 |
| DT27-SB1-15 | 6E26003-09 | Soil | 05/24/06 11:45 | 05/26/06 09:34 |
| DT27-SB1-20 | 6E26003-10 | Soil | 05/24/06 11:50 | 05/26/06 09:34 |
| DT27-SB3-2 | 6E26003-11 | Soil | 05/24/06 14:30 | 05/26/06 09:34 |
| DT27-SB3-5 | 6E26003-12 | Soil | 05/24/06 14:35 | 05/26/06 09:34 |
| DT27-SB3-10 | 6E26003-13 | Soil | 05/24/06 14:40 | 05/26/06 09:34 |
| DT27-SB3-15 | 6E26003-14 | Soil | 05/24/06 14:45 | 05/26/06 09:34 |
| DT27-SB3-20 | 6E26003-15 | Soil | 05/24/06 14:50 | 05/26/06 09:34 |
| DT27-SB4-2 | 6E26003-16 | Soil | 05/24/06 15:10 | 05/26/06 09:34 |
| DT27-SB4-5 | 6E26003-17 | Soil | 05/24/06 15:15 | 05/26/06 09:34 |
| DT27-SB4-10 | 6E26003-18 | Soil | 05/24/06 15:20 | 05/26/06 09:34 |
| DT27-SB4-15 | 6E26003-19 | Soil | 05/24/06 15:25 | 05/26/06 09:34 |
| DT27-SB4-20 | 6E26003-20 | Soil | 05/24/06 15:30 | 05/26/06 09:34 |



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|---|---|---|
| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## Organics by GC

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **DT27-SB2-2 (6E26003-01) 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* | | *102 %* | *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** | **216** | 10.0 | " | " | " | " | " | " | |
| **Carbon Ranges C28-C35** | **114** | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon nC6-nC35** | **330** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *99.2 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *93.8 %* | *70-130* | | " | " | " | " | |
| **DT27-SB2-5 (6E26003-02) 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* | | *98.5 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *91.0 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63112 | 05/31/06 | 06/01/06 | EPA 8015M | |
| **Carbon Ranges C12-C28** | **351** | 10.0 | " | " | " | " | " | " | |
| **Carbon Ranges C28-C35** | **149** | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon nC6-nC35** | **500** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *105 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *103 %* | *70-130* | | " | " | " | " | |
| **DT27-SB2-10 (6E26003-03) 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* | | *97.5 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *95.5 %* | *80-120* | | " | " | " | " | |
| **Carbon Ranges C6-C12** | **J [7.48]** | 10.0 | mg/kg dry | 1 | EE63112 | 05/31/06 | 06/01/06 | EPA 8015M | J |

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|---|---|---|
| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## Organics by GC

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **DT27-SB2-10 (6E26003-03) Soil** | | | | | | | | | |
| **Carbon Ranges C12-C28** | **351** | 10.0 | mg/kg dry | 1 | EE63112 | 05/31/06 | 06/01/06 | EPA 8015M | |
| **Carbon Ranges C28-C35** | **59.5** | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon nC6-nC35** | **411** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *87.6 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *88.4 %* | *70-130* | | " | " | " | " | |
| **DT27-SB2-15 (6E26003-04) 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* | | *103 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *87.5 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63112 | 05/31/06 | 06/01/06 | 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* | | *89.4 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *89.6 %* | *70-130* | | " | " | " | " | |
| **DT27-SB2-20 (6E26003-05) 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* | | *111 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *83.2 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63112 | 05/31/06 | 06/01/06 | EPA 8015M | |
| **Carbon Ranges C12-C28** | **J [6.72]** | 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* | | " | " | " | " | |







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|---|---|---|
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| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## Organics by GC

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **DT27-SB1-2 (6E26003-06) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 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* | | *91.5 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *93.5 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63112 | 05/31/06 | 06/01/06 | 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* | | *92.2 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *88.2 %* | *70-130* | | " | " | " | " | |
| **DT27-SB1-5 (6E26003-07) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 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* | | *85.0 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *100 %* | *80-120* | | " | " | " | " | |
| **Carbon Ranges C6-C12** | **19.4** | 10.0 | mg/kg dry | 1 | EE63112 | 05/31/06 | 06/01/06 | EPA 8015M | |
| **Carbon Ranges C12-C28** | **3210** | 10.0 | " | " | " | " | " | " | |
| **Carbon Ranges C28-C35** | **472** | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon nC6-nC35** | **3700** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *103 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *106 %* | *70-130* | | " | " | " | " | |
| **DT27-SB1-10 (6E26003-08) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 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* | | *88.8 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *112 %* | *80-120* | | " | " | " | " | |
| **Carbon Ranges C6-C12** | **10.4** | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 05/31/06 | EPA 8015M | |







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|---|---|---|
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| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## Organics by GC

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **DT27-SB1-10 (6E26003-08) Soil** | | | | | | | | | |
| **Carbon Ranges C12-C28** | **509** | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 05/31/06 | EPA 8015M | |
| **Carbon Ranges C28-C35** | **41.0** | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon nC6-nC35** | **560** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *101 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *101 %* | *70-130* | | " | " | " | " | |
| **DT27-SB1-15 (6E26003-09) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 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* | | *81.5 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *91.2 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 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* | | *94.0 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *91.6 %* | *70-130* | | " | " | " | " | |
| **DT27-SB1-20 (6E26003-10) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 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* | | *84.8 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *97.8 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 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* | | *95.4 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *91.6 %* | *70-130* | | " | " | " | " | |







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## Organics by GC

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| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **DT27-SB3-2 (6E26003-11) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 06/02/06 | EPA 8021B | |
| Toluene | ND | 0.0250 | " | " | " | " | " | " | |
| **Ethylbenzene** | **ND** | 0.0250 | " | " | " | " | " | " | |
| **Xylene (p/m)** | **0.0309** | 0.0250 | " | " | " | " | " | " | |
| **Xylene (o)** | **ND** | 0.0250 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *82.2 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *96.2 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 05/31/06 | EPA 8015M | |
| **Carbon Ranges C12-C28** | **12.0** | 10.0 | " | " | " | " | " | " | |
| Carbon Ranges C28-C35 | ND | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon nC6-nC35** | **12.0** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *97.2 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *95.8 %* | *70-130* | | " | " | " | " | |
| **DT27-SB3-5 (6E26003-12) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 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* | | *99.2 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *104 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 05/31/06 | EPA 8015M | |
| **Carbon Ranges C12-C28** | **J [8.38]** | 10.0 | " | " | " | " | " | " | J |
| Carbon Ranges C28-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon nC6-nC35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *96.6 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *87.6 %* | *70-130* | | " | " | " | " | |
| **DT27-SB3-10 (6E26003-13) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 06/03/06 | EPA 8021B | |
| Toluene | ND | 0.0250 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (p/m) | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (o) | ND | 0.0250 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *93.0 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *103 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 05/31/06 | EPA 8015M | |

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|---|---|---|
| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## Organics by GC

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **DT27-SB3-10 (6E26003-13) Soil** | | | | | | | | | |
| Carbon Ranges C12-C28 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 05/31/06 | EPA 8015M | |
| Carbon Ranges C28-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon nC6-nC35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *121 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *115 %* | *70-130* | | " | " | " | " | |
| **DT27-SB3-15 (6E26003-14) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 06/03/06 | EPA 8021B | |
| Toluene | ND | 0.0250 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (p/m) | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (o) | ND | 0.0250 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *85.5 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *98.0 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 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* | | *103 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *98.6 %* | *70-130* | | " | " | " | " | |
| **DT27-SB3-20 (6E26003-15) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 06/03/06 | EPA 8021B | |
| Toluene | ND | 0.0250 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (p/m) | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (o) | ND | 0.0250 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *90.0 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *92.0 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 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* | | *100 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *97.6 %* | *70-130* | | " | " | " | " | |







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| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
|---|---|---|
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## Organics by GC

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **DT27-SB4-2 (6E26003-16) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 06/03/06 | EPA 8021B | |
| Toluene | ND | 0.0250 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (p/m) | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (o) | ND | 0.0250 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *88.0 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *94.8 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 05/31/06 | EPA 8015M | |
| **Carbon Ranges C12-C28** | **J [7.23]** | 10.0 | " | " | " | " | " | " | J |
| Carbon Ranges C28-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon nC6-nC35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *104 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *101 %* | *70-130* | | " | " | " | " | |
| **DT27-SB4-5 (6E26003-17) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 06/03/06 | EPA 8021B | |
| Toluene | ND | 0.0250 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (p/m) | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (o) | ND | 0.0250 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *80.2 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *106 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 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* | | *101 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *94.0 %* | *70-130* | | " | " | " | " | |
| **DT27-SB4-10 (6E26003-18) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 06/03/06 | EPA 8021B | |
| Toluene | ND | 0.0250 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (p/m) | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (o) | ND | 0.0250 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *89.2 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *93.8 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 05/31/06 | EPA 8015M | |







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| | | |
|---|---|---|
| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## Organics by GC

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **DT27-SB4-10 (6E26003-18) Soil** | | | | | | | | | |
| Carbon Ranges C12-C28 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 05/31/06 | EPA 8015M | |
| Carbon Ranges C28-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon nC6-nC35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *106 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *102 %* | *70-130* | | " | " | " | " | |
| **DT27-SB4-15 (6E26003-19) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 06/03/06 | EPA 8021B | |
| Toluene | ND | 0.0250 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (p/m) | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (o) | ND | 0.0250 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *80.8 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *85.8 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 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* | | *112 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *107 %* | *70-130* | | " | " | " | " | |
| **DT27-SB4-20 (6E26003-20) Soil** | | | | | | | | | |
| Benzene | ND | 0.0250 | mg/kg dry | 25 | EF60224 | 06/02/06 | 06/03/06 | EPA 8021B | |
| Toluene | ND | 0.0250 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (p/m) | ND | 0.0250 | " | " | " | " | " | " | |
| Xylene (o) | ND | 0.0250 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *90.2 %* | *80-120* | | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *91.2 %* | *80-120* | | " | " | " | " | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EE63029 | 05/30/06 | 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* | | *92.6 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *87.0 %* | *70-130* | | " | " | " | " | |







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| | | |
|---|---|---|
| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## General Chemistry Parameters by EPA / Standard Methods

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **DT27-SB2-2 (6E26003-01) Soil** | | | | | | | | | |
| **% Moisture** | **3.0** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB2-5 (6E26003-02) Soil** | | | | | | | | | |
| **% Moisture** | **1.7** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB2-10 (6E26003-03) Soil** | | | | | | | | | |
| **% Moisture** | **0.9** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB2-15 (6E26003-04) Soil** | | | | | | | | | |
| **% Moisture** | **1.3** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB2-20 (6E26003-05) Soil** | | | | | | | | | |
| **% Moisture** | **2.1** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB1-2 (6E26003-06) Soil** | | | | | | | | | |
| **% Moisture** | **3.5** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB1-5 (6E26003-07) Soil** | | | | | | | | | |
| **% Moisture** | **1.7** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB1-10 (6E26003-08) Soil** | | | | | | | | | |
| **% Moisture** | **19.4** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB1-15 (6E26003-09) Soil** | | | | | | | | | |
| **% Moisture** | **2.5** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB1-20 (6E26003-10) Soil** | | | | | | | | | |
| **% Moisture** | **15.2** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB3-2 (6E26003-11) Soil** | | | | | | | | | |
| **% Moisture** | **0.7** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |







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|---|---|---|
| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## General Chemistry Parameters by EPA / Standard Methods

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **DT27-SB3-5 (6E26003-12) Soil** | | | | | | | | | |
| **% Moisture** | **2.0** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB3-10 (6E26003-13) Soil** | | | | | | | | | |
| **% Moisture** | **4.3** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB3-15 (6E26003-14) Soil** | | | | | | | | | |
| **% Moisture** | **1.2** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB3-20 (6E26003-15) Soil** | | | | | | | | | |
| **% Moisture** | **0.4** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB4-2 (6E26003-16) Soil** | | | | | | | | | |
| **% Moisture** | **3.8** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB4-5 (6E26003-17) Soil** | | | | | | | | | |
| **% Moisture** | **22.9** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB4-10 (6E26003-18) Soil** | | | | | | | | | |
| **% Moisture** | **5.4** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB4-15 (6E26003-19) Soil** | | | | | | | | | |
| **% Moisture** | **3.1** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |
| **DT27-SB4-20 (6E26003-20) Soil** | | | | | | | | | |
| **% Moisture** | **17.2** | 0.1 | % | 1 | EE62901 | 05/26/06 | 05/27/06 | % calculation | |







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## Organics by GC - Quality Control

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EE63029 - Solvent Extraction (GC)** | | | | | | | | | | |
| **Blank (EE63029-BLK1)** | | | | Prepared: 05/30/06 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* | *47.5* | | *mg kg* | *50.0* | | *95.0* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *47.8* | | *"* | *50.0* | | *95.6* | *70-130* | | | |
| **LCS (EE63029-BS1)** | | | | Prepared: 05/30/06 Analyzed: 05/31/06 | | | | | | |
| Carbon Ranges C6-C12 | 574 | 10.0 | mg/kg wet | 500 | | 115 | 75-125 | | | |
| Carbon Ranges C12-C28 | 560 | 10.0 | " | 500 | | 112 | 75-125 | | | |
| Total Hydrocarbon nC6-nC35 | 1130 | 10.0 | " | 1000 | | 113 | 75-125 | | | |
| *Surrogate: 1-Chlorooctane* | *55.1* | | *mg kg* | *50.0* | | *110* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *48.2* | | *"* | *50.0* | | *96.4* | *70-130* | | | |
| **Calibration Check (EE63029-CCV1)** | | | | Prepared: 05/30/06 Analyzed: 05/31/06 | | | | | | |
| Carbon Ranges C6-C12 | 289 | | mg/kg | 250 | | 116 | 80-120 | | | |
| Carbon Ranges C12-C28 | 292 | | " | 250 | | 117 | 80-120 | | | |
| Total Hydrocarbon nC6-nC35 | 581 | | " | 500 | | 116 | 80-120 | | | |
| *Surrogate: 1-Chlorooctane* | *62.9* | | *"* | *50.0* | | *126* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *61.9* | | *"* | *50.0* | | *124* | *70-130* | | | |
| **Matrix Spike (EE63029-MS1)** | **Source: 6E26003-08** | | | Prepared: 05/30/06 Analyzed: 05/31/06 | | | | | | |
| Carbon Ranges C6-C12 | 780 | 10.0 | mg/kg dry | 620 | 10.4 | 124 | 75-125 | | | |
| Carbon Ranges C12-C28 | 1120 | 10.0 | " | 620 | 509 | 98.5 | 75-125 | | | |
| Carbon Ranges C28-C35 | 35.8 | 10.0 | " | 0.00 | 41.0 | | 75-125 | | | |
| Total Hydrocarbon nC6-nC35 | 1940 | 10.0 | " | 1240 | 560 | 111 | 75-125 | | | |
| *Surrogate: 1-Chlorooctane* | *63.6* | | *mg kg* | *50.0* | | *127* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *61.9* | | *"* | *50.0* | | *124* | *70-130* | | | |

## 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 EE63029 - Solvent Extraction (GC)** | | | | | | | | | | |
| **Matrix Spike Dup (EE63029-MSD1)** | **Source: 6E26003-08** | | | Prepared: 05/30/06 Analyzed: 05/31/06 | | | | | | |
| Carbon Ranges C6-C12 | 772 | 10.0 | mg/kg dry | 620 | 10.4 | 123 | 75-125 | 1.03 | 20 | |
| Carbon Ranges C12-C28 | 1110 | 10.0 | " | 620 | 509 | 96.9 | 75-125 | 0.897 | 20 | |
| Carbon Ranges C28-C35 | 31.6 | 10.0 | " | 0.00 | 41.0 | | 75-125 | 12.5 | 20 | |
| Total Hydrocarbon nC6-nC35 | 1910 | 10.0 | " | 1240 | 560 | 109 | 75-125 | 1.56 | 20 | |
| *Surrogate: 1-Chlorooctane* | *63.2* | | *mg kg* | *50.0* | | *126* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *61.3* | | *"* | *50.0* | | *123* | *70-130* | | | |
| **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* | | | |

| | | |
|---|---|---|
| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## 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 EE63112 - Solvent Extraction (GC)** | | | | | | | | | | |
| **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* | | | |
| **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* | | *ug 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* | | *ug kg* | *40.0* | | *118* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *41.8* | | " | *40.0* | | *104* | *80-120* | | | |







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## Organics by GC - Quality Control

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 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* | | | |
| **Batch EF60224 - EPA 5030C (GC)** | | | | | | | | | | |
| **Blank (EF60224-BLK1)** | | | | Prepared & Analyzed: 06/02/06 | | | | | | |
| 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* | *33.1* | | *ug kg* | *40.0* | | *82.8* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *36.2* | | " | *40.0* | | *90.5* | *80-120* | | | |








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| | | |
|---|---|---|
| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## 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 EF60224 - EPA 5030C (GC)** | | | | | | | | | | |
| **LCS (EF60224-BS1)** | | | | Prepared: 06/02/06 Analyzed: 06/03/06 | | | | | | |
| Benzene | 1.07 | 0.0250 | mg/kg wet | 1.25 | | 85.6 | 80-120 | | | |
| Toluene | 1.02 | 0.0250 | " | 1.25 | | 81.6 | 80-120 | | | |
| Ethylbenzene | 1.16 | 0.0250 | " | 1.25 | | 92.8 | 80-120 | | | |
| Xylene (p/m) | 2.54 | 0.0250 | " | 2.50 | | 102 | 80-120 | | | |
| Xylene (o) | 1.23 | 0.0250 | " | 1.25 | | 98.4 | 80-120 | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *39.8* | | *ug kg* | *40.0* | | *99.5* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *45.0* | | *"* | *40.0* | | *112* | *80-120* | | | |
| **Calibration Check (EF60224-CCV1)** | | | | Prepared: 06/02/06 Analyzed: 06/03/06 | | | | | | |
| Benzene | 44.4 | | ug/kg | 50.0 | | 88.8 | 80-120 | | | |
| Toluene | 41.6 | | " | 50.0 | | 83.2 | 80-120 | | | |
| Ethylbenzene | 46.6 | | " | 50.0 | | 93.2 | 80-120 | | | |
| Xylene (p/m) | 90.2 | | " | 100 | | 90.2 | 80-120 | | | |
| Xylene (o) | 45.3 | | " | 50.0 | | 90.6 | 80-120 | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *33.8* | | *"* | *40.0* | | *84.5* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *34.3* | | *"* | *40.0* | | *85.8* | *80-120* | | | |
| **Matrix Spike (EF60224-MS1)** | | **Source: 6E26004-05** | | Prepared: 06/02/06 Analyzed: 06/03/06 | | | | | | |
| Benzene | 1.20 | 0.0250 | mg/kg dry | 1.36 | ND | 88.2 | 80-120 | | | |
| Toluene | 1.13 | 0.0250 | " | 1.36 | ND | 83.1 | 80-120 | | | |
| Ethylbenzene | 1.10 | 0.0250 | " | 1.36 | ND | 80.9 | 80-120 | | | |
| Xylene (p/m) | 2.56 | 0.0250 | " | 2.71 | ND | 94.5 | 80-120 | | | |
| Xylene (o) | 1.25 | 0.0250 | " | 1.36 | ND | 91.9 | 80-120 | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *33.1* | | *ug kg* | *40.0* | | *82.8* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *40.8* | | *"* | *40.0* | | *102* | *80-120* | | | |
| **Matrix Spike Dup (EF60224-MSD1)** | | **Source: 6E26004-05** | | Prepared: 06/02/06 Analyzed: 06/03/06 | | | | | | |
| Benzene | 1.14 | 0.0250 | mg/kg dry | 1.36 | ND | 83.8 | 80-120 | 5.12 | 20 | |
| Toluene | 1.12 | 0.0250 | " | 1.36 | ND | 82.4 | 80-120 | 0.846 | 20 | |
| Ethylbenzene | 1.21 | 0.0250 | " | 1.36 | ND | 89.0 | 80-120 | 9.54 | 20 | |
| Xylene (p/m) | 2.70 | 0.0250 | " | 2.71 | ND | 99.6 | 80-120 | 5.26 | 20 | |
| Xylene (o) | 1.30 | 0.0250 | " | 1.36 | ND | 95.6 | 80-120 | 3.95 | 20 | |
| *Surrogate: a,a,a-Trifluorotoluene* | *37.0* | | *ug kg* | *40.0* | | *92.5* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *44.7* | | *"* | *40.0* | | *112* | *80-120* | | | |







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| | | |
|---|---|---|
| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

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







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| | | |
|---|---|---|
| Plains All American EH & S | Project: Jalmat Clay Osborne #1 | Fax: (432) 687-4914 |
| 1301 S. County Road 1150 | Project Number: 2000-10606 | **Reported:** |
| Midland TX, 79706-4476 | Project Manager: Camille Reynolds | 06/05/06 16:51 |

## Notes and Definitions

| | |
|---|---|
| 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.

# Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

**CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST**

Project Manager: Kenneth Cody / C. Reynolds
Company Name: SDG Environmental Services / Plains P/L
Company Address: 6611 Vialinda
City/State/Zip: Houston TX 77083
Telephone No: 713-806-7948 Fax No:
Sampler Signature:
Email:

Project Name: Jalmat Clay Osborne #1 PLAINS Rocky Top
Project #: 2000-10606
Project Loc: FST-27
PO #:

6E26003

| LAB # (lab use only) | FIELD CODE | Date Sampled | Time Sampled | No. of Containers | Preservative: Ice | $HNO_3$ | HCl | NaOH | $H_2SO_4$ | None | Other (Specify) | Matrix: Water | Sludge | Soil | Other (specify): | Analyze For: TCLP: TPH 418.1 / 8015M / 1005 / 1006 | TOTAL: TPH 418.1 / 8015M / 1005 / 1006 | Cations (Ca, Mg, Na, K) | Anions (Cl, SO4, CO3, HCO3) | SAR / ESP / CEC | Metals: As Ag Ba Cd Cr Pb Hg Se | Volatiles | Semivolatiles | BTEX 8021B/5030 or BTEX 8260 | RCI | N.O.R.M. | RUSH TAT (Pre-Schedule) | Standard TAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -01 | DT27-SB2-2 | 5-24-06 | 1010 | 1 | X | | | | | | | | | X | | X | | | | | | | X | | | | | |
| -02 | DT27-SB2-5 | | 1015 | 1 | X | | | | | | | | | X | | X | | | | | | | X | | | | | |
| -03 | DT27-SB2-10 | | 1020 | 1 | X | | | | | | | | | X | | X | | | | | | | X | | | | | |
| -04 | DT27-SB2-15 | | 1025 | 1 | X | | | | | | | | | X | | X | | | | | | | X | | | | | |
| -05 | DT27-SB2-20 | | 1030 | 1 | X | | | | | | | | | X | | X | | | | | | | X | | | | | |
| -06 | DT27-SB1-2 | | 1130 | 1 | X | | | | | | | | | X | | X | | | | | | | X | | | | | |
| -07 | DT27-SB1-5 | | 1135 | 1 | X | | | | | | | | | X | | X | | | | | | | X | | | | | |
| -08 | DT27-SB1-10 | | 1140 | 1 | X | | | | | | | | | X | | X | | | | | | | X | | | | | |
| -09 | DT27-SB1-15 | | 1145 | 1 | X | | | | | | | | | X | | X | | | | | | | X | | | | | |
| -10 | DT27-SB1-20 | | 1150 | 1 | X | | | | | | | | | X | | X | | | | | | | X | | | | | |

**Special Instructions:**

Sample Containers Intact? (Y) N
Labels on container? (Y) N
Custody Seals: Containers / Cooler
Temperature Upon Receipt: 1.5 °C

**Laboratory Comments:**

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| | 5-26-06 | 0731 | | | |
| Relinquished by: | Date | Time | Received by ELOT: | Date | Time |
| | | | Jeanne McMurry | 05-26-06 | 0934 |

# Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

*CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST*

Project Manager: Kenneth Cody
Company Name: SDG Environmental Services
Company Address: 6611 Vialinda
City/State/Zip: Houston Tx 77083
Telephone No: 713-896-7948
Fax No:
Sampler Signature:
Email:

Project Name: Plains Rocky Top
Project #: 2000-110606
Project Loc: [redacted] DT-27
PO #:

6E26003

| LAB # (lab use only) | FIELD CODE | Date Sampled | Time Sampled | No. of Containers | Preservative: Ice | $HNO_3$ | HCl | NaOH | $H_2SO_4$ | None | Other (Specify) | Matrix: Water | Sludge | Soil | Other (specify): | Analyze For: TCLP: TPH: 418.1 / 8015M / 1005 / 1006 | TOTAL: TPH: 418.1 / 8015M / 1005 / 1006 | Cations (Ca, Mg, Na, K) | Anions (Cl, SO4, CO3, HCO3) | SAR / ESP / CEC | Metals: As Ag Ba Cd Cr Pb Hg Se | Volatiles | Semivolatiles | BTEX 8021B/5030 or BTEX 8260 | RCI | N.O.R.M. | RUSH TAT (Pre-Schedule) | Standard TAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -11 | DT27-SB3-2 | 5-24-06 | 1430 | 1 | X | | | | | | | | | X | | X | | | | | | | | X | | | | |
| -12 | DT27-SB3-5 | | 1435 | 1 | X | | | | | | | | | X | | X | | | | | | | | X | | | | |
| -13 | DT27-SB3-10 | | 1440 | 1 | X | | | | | | | | | X | | X | | | | | | | | X | | | | |
| -14 | DT27-SB3-15 | | 1445 | 1 | X | | | | | | | | | X | | X | | | | | | | | X | | | | |
| -15 | DT27-SB3-20 | | 1450 | 1 | X | | | | | | | | | X | | X | | | | | | | | X | | | | |
| -16 | DT27-SB4-2 | | 1510 | 1 | X | | | | | | | | | X | | X | | | | | | | | X | | | | |
| -17 | DT27-SB4-5 | | 1515 | 1 | X | | | | | | | | | X | | X | | | | | | | | X | | | | |
| -18 | DT27-SB4-10 | | 1520 | 1 | X | | | | | | | | | X | | X | | | | | | | | X | | | | |
| -19 | DT27-SB4-15 | | 1525 | 1 | X | | | | | | | | | X | | X | | | | | | | | X | | | | |
| -20 | DT27-SB4-20 | | 1530 | 1 | X | | | | | | | | | X | | X | | | | | | | | X | | | | |

**Special Instructions:**

Sample Containers Intact? (Y) N
Labels on container? (Y) N
Custody Seals: Containers / Cooler
Temperature Upon Receipt: 1.5 °C

**Laboratory Comments:**

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| | 5-26-06 | 0934 | | | |
| Relinquished by: | Date | Time | Received by ELOT: | Date | Time |
| | | | Jeanne McMurry | 05-26-06 | 0934 |

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

Client: Plains P/L

Date/Time: 05-26-06 @ 0934

Order #: 6E26003

Initials: JMM

### Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Temperature of container/cooler? | (Yes) | No | 1.5 C |
| Shipping container/cooler in good condition? | (Yes) | No | |
| Custody Seals intact on shipping container/cooler? | (Yes) | No | Not present |
| Custody Seals intact on sample bottles? | Yes | No | (Not present) |
| Chain of custody present? | (Yes) | No | |
| Sample Instructions complete on Chain of Custody? | (Yes) | No | |
| Chain of Custody signed when relinquished and received? | (Yes) | No | |
| Chain of custody agrees with sample label(s) | (Yes) | No | |
| Container labels legible and intact? | (Yes) | No | |
| Sample Matrix and properties same as on chain of custody? | (Yes) | No | |
| Samples in proper container/bottle? | (Yes) | No | |
| Samples properly preserved? | (Yes) | No | |
| Sample bottles intact? | (Yes) | No | |
| Preservations documented on Chain of Custody? | (Yes) | No | |
| Containers documented on Chain of Custody? | (Yes) | No | |
| Sufficient sample amount for indicated test? | (Yes) | No | |
| All samples received within sufficient hold time? | (Yes) | No | |
| VOC samples have zero headspace? | (Yes) | No | Not Applicable |

Other observations:

### Variance Documentation:

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

Regarding:

Corrective Action Taken:

# APPENDIX C
# SOIL BORING LOGS

SDG
ENVIRONMENTAL SERVICES

SOIL BORING NUMBER DT27-SB1

PROJECT ROCKY TOP 3 LOCATION Jal, N.M.

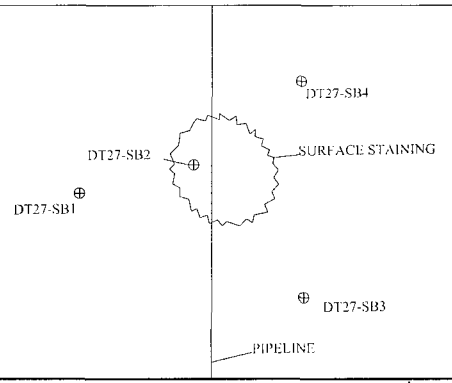
TOTAL BORING DEPTH 20' BOREHOLE DIA (in) 8.25"

DRILLING CO. Straub 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

## LOCATION MAP




| INTERVAL | SAMPLE RECOVERY % | LOG | PID (ppm) | Sample | LITHOLOGIC DESCRIPTION/COMMENTS | REMARKS |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | 100 | | 0.0 | DT27-SB1-2 | Sand, tan, fine grained, well sorted, rounded, dry, with caliche | No odor No Staining |
| 2 | | | | | Sand, pink, fine grained, well sorted, rounded, dry, with caliche and some coarse gravel | Faint odor No Staining |
| 4 | 100 | | 2.7 | DT27-SB1-5 | | |
| 6 | | | | | Sand, pink, fine grained, well sorted, rounded, dry, with some caliche | Faint odor No Staining |
| 8 | | | | | | |
| 10 | 100 | | 4.0 | DT27-SB1-10 | | Faint odor No Staining |
| 12 | | | | | Sand, pink, fine grained, well sorted, rounded, dry, with some caliche, slightly damp. | |
| 14 | 100 | | 0.0 | DT27-SB1-15 | | No odor No Staining |
| 16 | | | | | Sand, pink, fine grained, well sorted, rounded, dry, with some caliche and coarse gravel | |
| 18 | | | | | | |
| 20 | 100 | | 0.0 | DT27-SB1-20 | | No odor No Staining |
| 22 | | | | | Sand, pink, fine grained, well sorted, rounded, dry. | |
| 24 | 0 | | | | Loose sand, no sample @ 25' | |
| 26 | | | | | **TD= 25'** | |
| 28 | | | | | | |
| 30 | | | | | | |
| 32 | | | | | | |
| 34 | | | | | | |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | | | | | | |

SPG
ENVIRONMENTAL SERVICES

SOIL BORING NUMBER DT27-SB2

PROJECT ROCKY TOP 3 LOCATION Jal, N.M.

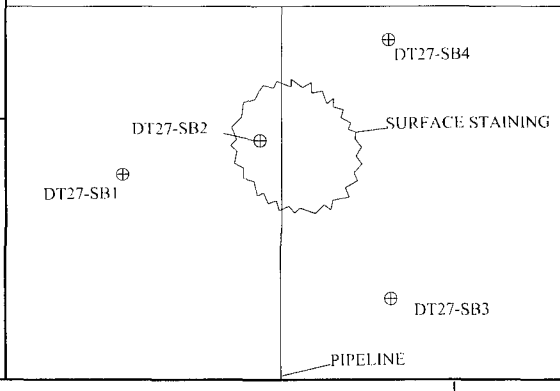
TOTAL BORING DEPTH 25' BOREHOLE DIA (in) 8.25"

DRILLING CO. Straub Drilling DRILLING METHOD HSA

GEOLOGIST Kenneth Cody DATE DRILLED 5/23/06

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

## LOCATION MAP




| INTERVAL | SAMPLE RECOVERY % | LOG | PID (ppm) | Sample | LITHOLOGIC DESCRIPTION/COMMENTS | REMARKS |
|---|---|---|---|---|---|---|
| 0-2 | 100 | | 1.1 | DT27-SB2-2 | Sand, tan, fine grained, well sorted, rounded, dry, with caliche | Slight odor<br>No Staining |
| | | | | | Sand, pink, fine grained, well sorted, rounded, dry, with caliche and some fine gravel | No odor<br>No Staining |
| 4-6 | 100 | | 0.0 | DT27-SB2-5 | Sand, pink, fine grained, well sorted, rounded, dry, with some caliche | Faint odor<br>No Staining |
| 8-10 | 100 | | 1.9 | DT27-SB2-10 | | Faint odor<br>No Staining |
| | | | | | Sand, pink, fine grained, well sorted, rounded, dry, with some caliche | |
| 12-14 | 100 | | 0.0 | DT27-SB2-15 | | No odor<br>No Staining |
| | | | | | Sand, pink, fine grained, well sorted, rounded, dry, with some caliche and coarse gravel | |
| 16-18 | 100 | | 0.0 | DT27-SB2-20 | | No odor<br>No Staining |
| | | | | | Loose sand, no sample | |
| 20-22 | 0 | | | | | |
| 24 | | | | | **TD= 25'** | |
| 26-40 | | | | | | |

SPG
ENVIRONMENTAL SERVICES

SOIL BORING NUMBER DT27-SB3

PROJECT ROCKY TOP 3 LOCATION Jal, N.M.

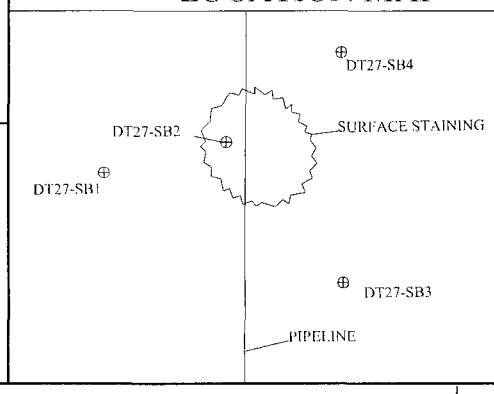
TOTAL BORING DEPTH 20' BOREHOLE DIA (in) 8.25"

DRILLING CO. Straub 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

## LOCATION MAP




| INTERVAL | SAMPLE RECOVERY % | LOG | PID (ppm) | Sample | LITHOLOGIC DESCRIPTION/COMMENTS | REMARKS |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| 0-2 | 100 | | 0.0 | DT27-SB3-2 | Sand, tan, fine grained, well sorted, rounded, dry, with caliche | No odor No Staining |
| 2-4 | | | | | Sand, pink, fine grained, well sorted, rounded, dry, with caliche and some coarse gravel | No odor No Staining |
| 4-6 | 100 | | 0.0 | DT27-SB3-5 | Sand, pink, fine grained, well sorted, rounded, dry, with some caliche | No odor No Staining |
| 6-8 | | | | | | |
| 8-10 | 100 | | 0.0 | DT27-SB3-10 | Sand, pink, fine grained, well sorted, rounded, dry, with some caliche, slightly damp. | No odor No Staining |
| 10-12 | | | | | | |
| 12-14 | | | | | | |
| 14-16 | 100 | | 0.0 | DT27-SB3-15 | Sand, pink, fine grained, well sorted, rounded, dry, with some caliche and coarse gravel | No odor No Staining |
| 16-18 | | | | | | |
| 18-20 | 100 | | 0.0 | DT27-SB3-20 | | No odor No Staining |
| 20 | | | | | TD= 20' | |
| 20-22 | | | | | | |
| 22-24 | | | | | | |
| 24-26 | | | | | | |
| 26-28 | | | | | | |
| 28-30 | | | | | | |
| 30-32 | | | | | | |
| 32-34 | | | | | | |
| 34-36 | | | | | | |
| 36-38 | | | | | | |
| 38-40 | | | | | | |

SDG
ENVIRONMENTAL SERVICES

SOIL BORING NUMBER DT27-SB4

PROJECT ROCKY TOP 3 LOCATION Jal, N.M.

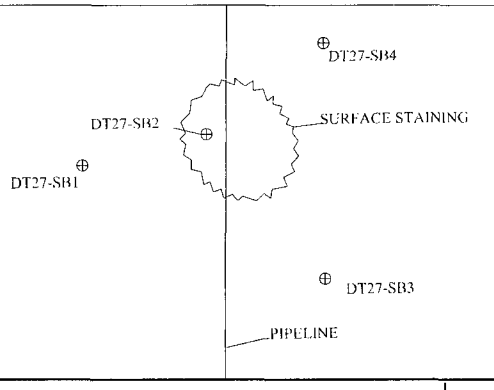
TOTAL BORING DEPTH 20' BOREHOLE DIA (in) 8.25"

DRILLING CO. Straub 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

## LOCATION MAP




| INTERVAL | SAMPLE RECOVERY % | LOG | PID (ppm) | Sample | LITHOLOGIC DESCRIPTION/COMMENTS | REMARKS |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | 100 | | 0.0 | DT27-SB4-2 | Sand, tan, fine grained, well sorted, rounded, dry, with caliche | No odor No Staining |
| 2 | | | | | | |
| | | | | | Sand, pink, fine grained, well sorted, rounded, dry, with caliche and some coarse gravel | No odor No Staining |
| 4 | 100 | | 0.0 | DT27-SB4-5 | | |
| | | | | | Sand, pink, fine grained, well sorted, rounded, dry, with some caliche | No odor No Staining |
| 6 | | | | | | |
| 8 | | | | | | |
| | 100 | | 0.0 | DT27-SB4-10 | | No odor No Staining |
| 10 | | | | | Sand, pink, fine grained, well sorted, rounded, slightly damp. | |
| 12 | | | | | | |
| 14 | 100 | | 0.0 | DT27-SB4-15 | | No odor No Staining |
| | | | | | Sand, pink, fine grained, well sorted, rounded, dry, with some gravel. | |
| 16 | | | | | | |
| 18 | | | | | | |
| | 100 | | 0.0 | DT27-SB4-20 | | No odor No Staining |
| 20 | | | | | **TD= 20'** | |
| 22 | | | | | | |
| 24 | | | | | | |
| 26 | | | | | | |
| 28 | | | | | | |
| 30 | | | | | | |
| 32 | | | | | | |
| 34 | | | | | | |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | | | | | | |