

# PRELIMINARY SITE INVESTIGATION REPORT and **REMEDIATION PLAN**

PLAINS MARKETING L.P. **SAUNDERS 8" # 4** EMS No. 2004-00184 Lea County, New Mexico UNIT F, Section 35, Township 13 South, Range 33 East 33°, 08', 55.6" North, 103°, 35', 15.3" West

Prepared For:

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

Prepared By: Basin Environmental Service Technologies, LLC P. O. Box 301 Lovington, New Mexico 88260

15 November 2004

Ken Dutton

Basin Environmental Service Technologies, LLC

DlainoMKtg = 34053 incident # 1PAC 06019 48756 application # pPAC 06019 49147 PC 1/19/06

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### INTRODUCTION

Allstate Environmental Services, LLC (AES) responded to a pipeline release for Plains Marketing L.P. (Plains), located on the Saunders 8" Pipeline on 12 August 2004. The Saunders 8" Pipeline was clamped and the impacted soils were excavated and stockpiled on a poly liner. Basin Environmental Service Technologies, LLC (Basin), will perform subsequent remediation of the site at the request of Plains.

This site is located in Unit F, Section 35, Township 13 South, Range 33 East, in Lea County, New Mexico (topographic Site Location Map is attached as Figure 1). The latitude is 33°, 08, 55.6 North, and longitude is 103°, 35', 15.3 West. The site is characterized by a right-of-way for the pipeline in a pasture utilized for cattle grazing. The stained area includes the release point and progresses east covering an area approximately 128 feet long by 89 feet wide. Approximately 15 barrels of crude oil were released from the Plains pipeline and 0 barrels were recovered.

An Emergency One-Call was initiated 12 August 2004 and all responding companies either cleared or marked their respective lines. Subsequent renewals of the one-call have been accomplished as required.

Mr. Larry Johnson, New Mexico Oil Conservation Division, Hobbs District 1 was verbally notified of the release on 12 August 2004.

The landowner, Mr. Norman Hahn, was out of state for an extended period of time when the release occurred, however; the ranch foreman, Mr. Kenneth Augustine was notified and is aware of the release and subsequent remedial actions taken. Contact with Mr. Hahn was accomplished 13 September 2004. Mr. Hahn was informed of all activities that have been accomplished to date and remedial actions that are being considered.

On 18 August 2004, Plains Pipeline replaced approximately 800 feet of the existing 8" steel pipeline with a 6" poly line. The 8" steel pipeline was purged of fluid and removed from the existing Plains right-of-way. After removal from the Plains right-of-way the steel pipeline was cut into 30-foot joints and transported to the Plains Pipeline Lovington, New Mexico yard. The 6" poly line will be placed in the existing Plains right-of-way upon completion of remediation of the impacted soil.

### **SUMMARY OF FIELD ACTIVITIES**

On 12 August 2004, AES employee Bobby Blackwood arrived at the Saunders 8" Pipeline release to repair and contain the crude oil pipeline release. After the release had been contained utilizing a pipeline repair clamp, excavation of the impacted soil was initiated. The impacted soil was placed on a poly liner adjacent to the release.

On 13 August 2004, AES employee Bobby Blackwood began extended excavation of the impacted area. The release point was excavated to approximately 128 feet long by 89 feet wide and 3 to 4 feet below ground surface (bgs). All excavated soil was placed on a poly liner for future remedial action.

On 15 September 2004, Basin employee, Ken Dutton, installed 2 boil borings, utilizing Straub Corporation, of Stanton, Texas, collecting soil samples every 5 feet in order to delineate the horizontal and vertical nature and extent of crude oil impacted soil at the pipeline release (see Site Map, Figure 2). The soil borings were installed at the floor of the excavation (4 feet bgs) at the release point, and continued east on the excavation floor (pooling area). The soil borings ranged in depth from 10 feet bgs to 44 feet bgs (soil boring logs are attached as Appendix C). Each sample was screened with a Photoionization Detector (PID) which was calibrated on 13 September 2004. The selected soil samples were analyzed for concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX), and total petroleum hydrocarbons – gasoline range organics/diesel range organics (TPH-GRO/DRO). On 04 November 2004, soil samples were collected from the excavation sidewalls, release point (floor), and pooling area and were analyzed for concentrations of BTEX and TPH-GRO/DRO.

# NEW MEXICO OIL CONSERVATION DIVISION (NMOCD) SOIL CLASSIFICATION

A search of the New Mexico State Engineers database revealed water depth information for that section averaged 87 feet bgs. There are no surface water bodies or water wells within 1000 feet of the release site. Based on this data, the site has an NMOCD Ranking Score of 10 - 19, which sets the remediation levels at:

Benzene:

10 ppm

BTEX:

50 ppm

TPH:

1000 ppm

# Distribution of Hydrocarbons in the Unsaturated Zone

The release point area has been excavated to a depth of approximately 4 feet bgs and evidence of crude oil impact still exist on the floor of the excavation. PID readings reflect elevated concentrations of Volatile Organic Compounds (VOC) remain. A track-hoe was utilized to excavate approximately 15 feet bgs at the release point. PID readings reflected elevated concentrations of VOCs' remain and a drill rig was utilized to delineate the vertical and horizontal extent of crude oil impacted soil. The release point excavation was backfilled due to livestock in the area. Soil boring 1 was installed on the floor of the excavation (release point) and the soil boring 2 east of the release point and on the excavation floor (pooling area). Soil samples were collected in the subsurface from the soil borings at 5 feet intervals. No visual observations of free phase hydrocarbons were encountered during the installation of the 2 soil borings (as indicated on Appendix C) or excavation of the

site. PID field screenings were utilized to determine which soil samples were to be submitted to the laboratory for analysis. Selected soil samples were analyzed for concentrations of BTEX and TPH. Laboratory data sheets and chain-of-custody forms are attached (Appendix B).

Soil Boring 1, as depicted on the Site Map (Figure 2), was installed on the floor of the excavation at 4 feet bgs. Samples collected at the 5, 15, 30 and 40 feet bgs were analyzed. The true bgs of each sample is determined by adding 4 feet to each soil boring depth due to the installation of the soil boring at 4 feet bgs on the floor of the excavation. Analytical results indicated that BTEX and TPH were above NMOCD regulatory standards at 5 and 15 feet bgs. Analytical results indicated that the soil samples were below NMOCD regulatory standards at 30 and 40 feet bgs for BTEX and TPH.

Soil Boring 2, as depicted on the Site Map (Figure 2), was installed east of the release point on the floor of the excavation at the pooling area. Soil samples collected at the 5 and 10 feet bgs were analyzed. Analytical results indicated that BTEX and TPH concentrations were not detected above the laboratory method detection limits from these 2 soil samples.

Soil samples were collected on 04 November 2004, from the release point, pooling area and the sidewalls as depicted on the Site Map (Figure 2). The soil sample collected at the release point was actually backfill from the initial excavation to determine the vertical extent of contamination and is not an accurate depiction of the native soil. The soil sample collected from the pooling area was at a depth of approximately 4 feet bgs. Analytical results indicated that BTEX was below laboratory detection limits and TPH was below NMOCD regulatory standards at 226 mg/kg. The soil samples from the sidewalls were at a depth of approximately 2 feet bgs. Analytical results indicated that BTEX was below laboratory detection limits on all four-soil samples. Analytical results indicated that TPH was below NMOCD regulatory standards on three sidewalls with the exception of the north wall soil sample at 1200 mg/kg.

## RECOMMENDATIONS FOR REMEDIATION

Approximately 2100 cubic yards of impacted soil and caliche rock have been excavated and stockpiled on-site. Approximately 45% of the excavated soil consists of caliche rock. Due to the high content of caliche rock, screening of the stockpile is warranted to separate the rock and soil. Upon completion of the screening activities the caliche rock will be utilized as partial backfill. The screened soil, estimated to be 1155 cubic yards, will then be stockpiled in mounds of approximately 250 cubic yards. Nutrients will be added during the screening process to enhance the remediation process. Approximately 5 mounds will be required to facilitate remediation of the 1155 cubic yards. Initial soil sampling of the mounds will be conducted to ascertain the concentrations of contaminants. The screened soil, once sampled and a baseline established, will be utilized as backfill. The soil will be backfilled in one-foot thick lifts and aerated in-situ and sampled periodically to

ascertain the level of contaminates. Once NMOCD regulatory standards have been met for that specific lift, another lift will be placed on and aerated/tilled in a similar manner. Upon completion of remediation of all impacted soil, approximately 10 inches to 1 foot of topsoil will be purchased and contoured to the original rangeland surrounding the site and reseeded with approved grass seed. A closure report will be submitted to NMOCD upon completion of all tasks with appropriate documentation.

Based on the results of the soil delineation investigation, the release point and north wall will require further excavation and confirmation soil sampling to adhere to NMOCD regulatory standards. The excavated soils will be placed on poly liner prior to the screening process. Field screening with a PID will be utilized to determine the depth at which soil samples will be collected to adhere to NMOCD regulatory standards. Plains proposes to mechanically separate the rock and soil and the rock will be placed back in the excavation.

### **CLOSURE PROPOSAL**

It is estimated that 1100 cubic yards of hydrocarbon impacted soil remains at the site and is represented by approximately twenty-five feet of impacted soil remaining beneath the excavation floor at the release point. The north wall is represented by approximately 50 cubic yards of impacted soil. It is proposed to excavate the remaining hydrocarbon impacted soil at the release point to a depth of approximately twenty-five feet bas. The excavation area at the release point measures approximately thirty feet long and thirty feet wide. The north wall area measures approximately twenty feet long and four feet wide. Confirmation soil samples will be collected to ascertain if NMOCD regulatory standards have been met at the two areas of concern. In conjunction with the excavation of the release point and north wall, mechanical separation of the rock and soil will be on going. Upon attaining NMOCD regulatory standards at the release point and north wall, Plains proposes to utilize the rock separated during screening as backfill in the excavation (pursuant to standard NMOCD practices). Soil separated from the rock will be sampled for concentrations of TPH and BTEX at a rate of one sample per 250 cubic yards. Soil with TPH concentration less than 1000 ppm, benzene concentrations less than 10 ppm and total BTEX concentrations less than 50 ppm will be utilized as bottom backfill. Soil with TPH concentrations exceeding 1000 ppm, benzene concentrations exceeding 10 ppm and total BTEX concentrations exceeding 50 ppm will be backfilled in one-foot thick layers and aerated/tilled until contaminant concentrations are below site cleanup standards. Once a lift is deemed acceptable, a subsequent layer of soil will be placed on top and remediated in a similar manner. Sampling will be conducted periodically to ascertain the level of contaminates. Once NMOCD regulatory standards are met, a 10-inch to 1-foot layer of topsoil will be acquired from the landowner and the site will be contoured and reseeded to as near topographical conditions as possible.

# **QA/QC PROCEDURES**

# Soil Sampling

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

The soil samples were analyzed as follows:

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

# **Groundwater Sampling**

As groundwater was not encountered during the investigation process, no water samples were obtained.

# **Decontamination Of Equipment**

Cleaning of the sampling equipment was the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment was cleaned with Liqui-Nox® detergent and rinsed with distilled water.

# **Laboratory Protocol**

The laboratory was responsible for proper QA/QC procedures after signing the chainof-custody form. These procedures were either transmitted with the laboratory reports or are on file at the laboratory.

### LIMITATIONS

Basin Environmental Service Technologies, LLC has prepared this Preliminary Investigation Report and General Remediation Plan to the best of its ability. No other warranty, expressed or implied, is made or intended.

Basin Environmental Service Technologies, LLC has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. Basin Environmental Service Technologies, LLC 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. Basin Environmental Service Technologies, LLC has prepared this report in a professional

manner, using the degree of skill and care exercised by similar environmental consultants. Basin Environmental Service Technologies, LLC 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 Marketing, 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 Basin Environmental Service Technologies, LLC, and Plains Marketing, L.P.

# DISTRIBUTION

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**TABLES** 

# TABLE 1 SOIL CHEMISTRY, EXCAVATION

# TABLE 1

# SOIL CHEMISTRY, EXCAVATION

# FLAINS MARKETING L.P. SAUNDERS 8" #4 LEA COUNTY, NEW MEXICO

EMS: 2004-00184

SAMPLE	SAMPLE	SAMPLE		METHOD: E	PA SW 846-		METHO	D: 8015M	TOTAL.	
LOCATION	DEPTH	DATE	BENZENE	TOLUENE	ETHYL- BENZENE	,	O-XYLENE	GRO	DRO	ТРН
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/lkg)	(mg/kg)
Exc Floor-RP	4' bgs	11/04/04	<0.025	0.895	0.074	0.506	0.264	103	1030	1130
Exc Floor Pooling Area	4' bgs	11/04/04	<0.025	<0.025	<0.025	<0.025	<0.025	<10.0	226	226
West Wall-Exc	2' bgs	11/04/04	<0.025	0.096	0.042	0.281	0.141	77.4	695	772
East Wall-Exc	2' bgs	11/04/04	<0.025	<0.025	<0.025	<0.025	<0.025	<10.0	81.8	81.8
North Wall-Exc	2' bgs	11/04/04	<0.025	<0.025	<0.025	0.052	<0.025	44.7	1150	1200
South Wall-Exc	2' bgs	11/04/04	<0.025	<0.025	<0.025	<0.025	<0.025	<10.0	307	307
	<u> </u>	<u></u>		<u> </u>				كالتريب المتعادد المت		

# TABLE 2 SOIL CHEMISTRY, SOIL BORINGS

TABLE 2

# SOIL CHEMISTRY, SOIL BORINGS

# PLAINS MARKETING L.P. SAUNDERS 8" #4 LEA COUNTY, NEW MEXICO EMS: 2004-00184

SAMPLE	SAMPLE	SAMPLE		METHOD∗ E	PA SW 846	)	METHO	D: 8015M	TOTAL	
LOCATION	DEPTH	DATE	BENZENE	TOLUENE	ETHYL-	M,P-	O-XYLENE	GRO	DRO	TPH
					BENZENE	XYLENES				
	<u> </u>		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SB-1*	5' (9')	09/15/04	0.604	9.36	3.75	18.8	7.5	1730	3900	5630
SB-1*	15' (19')	09/15/04	0.216	3.96	2.57	14.3	5.34	1800	4210	6010
SB-1*	30' (34')	09/15/04	<0:025	<0.025	<0.025	<0.025	<0.025	<10	26.7	26.7
SB-1*	40' (44')	09/15/04	<0:025	<0.025	<0.025	<0.025	<0.025	<10	<10	<10
SB-2	5'	09/15/04	<0:025	<0.025	<0.025	0.050	<0.025	<10	<10	<10
SB-2	10'	09/15/04	<0:025	<0.025	<0.025	<0.025	<0.025	<10	<10	<10
	T									

NOTE: \* Sail Boring was installed on excavation floor, 4' bgs, bold number indicates true bgs from surface

**FIGURES** 

# FIGURE 1 SITE LOCATION MAP

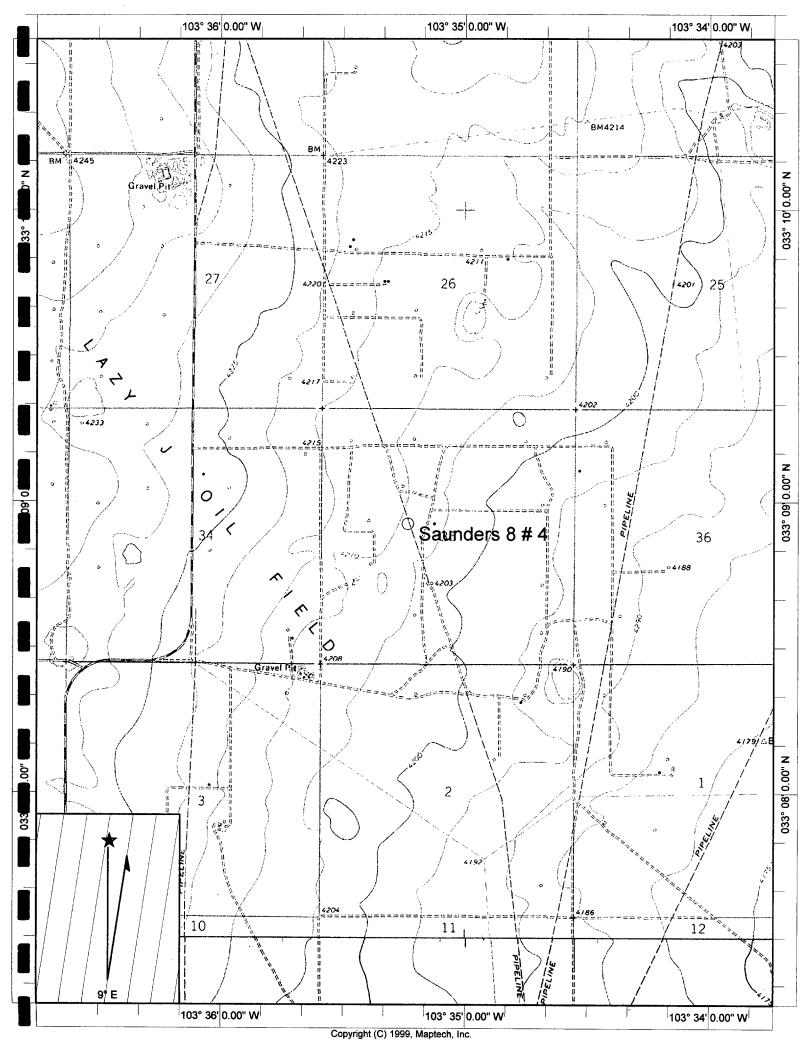
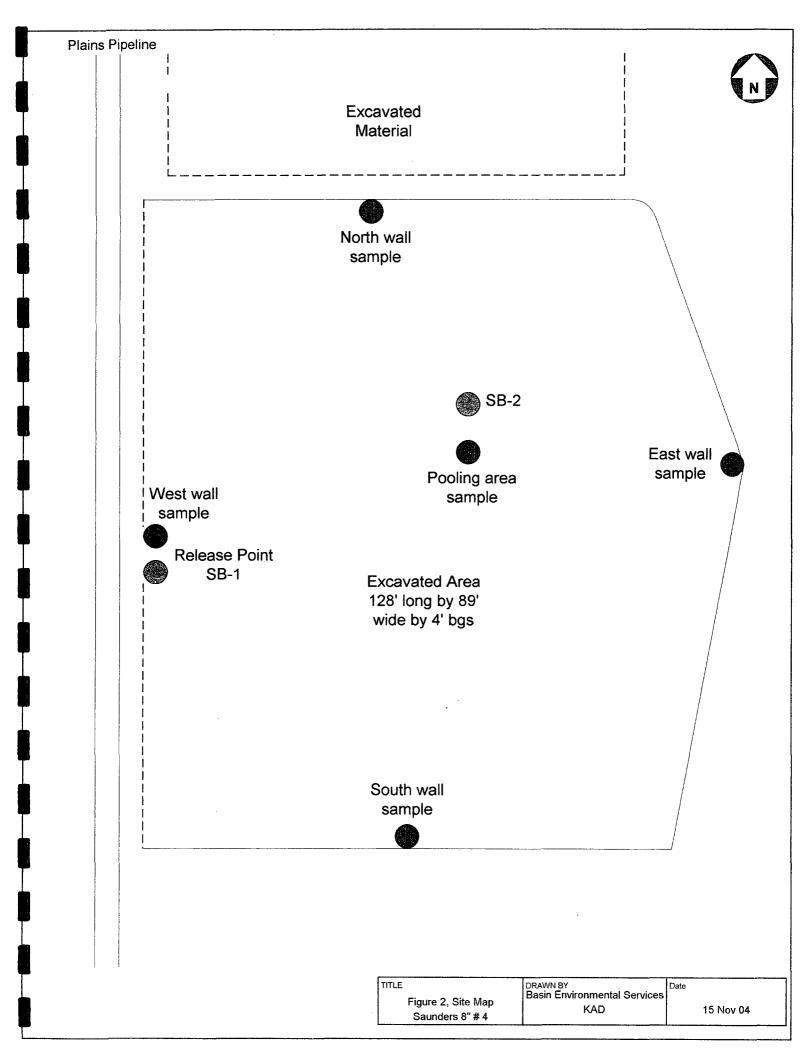


FIGURE 2

**SITE MAP** 



# FIGURE 3 DIGITAL PHOTO OF SITE

# Saunders 8 744 Plains Markeung Unit L \$24 THS RSSE

**APPENDICES** 

# **APPENDIX A**

NEW MEXICO OFFICE OF THE STATE ENGINEER WATER WELL DATABASE

# New Mexico Office of the State Engineer Well Reports and Downloads

Township: 13S Range: 33E Sections: 35
NAD27 X: Y: Zone: ✓ Search Radius:
County: Basin: Number: Suffix:
Owner Name: (First) (Last) C Non-Domestic C Domestic
Well / Surface Data Report Avg Depth to Water Report
Water Column Report
Clear Form WATERS Menu Help

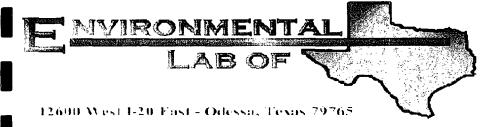
# AVERAGE DEPTH OF WATER REPORT 11/15/2004

								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	x	Y	Wells	Min	Max	Avg
${f L}$	13S	33E	35				4	80	95	87

Record Count: 4

# **APPENDIX B**

# ENVIRONMENTAL LABORATORY OF TEXAS ANALYTICAL RESULTS



# Analytical Report

# Prepared for:

Ken Dutton
Basin Environmental Services
P.O. Box 301
Lovington, TX 88260

Project: Saunders 8 inch #4 Project Number: 2004-00184 Location: Lea County, NM

Lab Order Number: 4I17012

Report Date: 09/26/04

P.O. Box 301 Lovington TX, 88260 Project: Saunders 8 inch #4

Project Number: 2004-00184 Project Manager: Ken Dutton Fax: (505) 396-1429

Reported: 09/26/04 11:02

# ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-1-5'	4117012-01	Soil	09/15/04 10:12	09/17/04 14:15
SB-1-15'	4117012-02	Soil	09/15/04 09:06	09/17/04 14:15
SB-1-30'	4117012-03	Soil	09/15/04 09:15	09/17/04 14:15
SB-1-40'	4117012-04	Soil	09/15/04 09:29	09/17/04 14:15
SB-2-5'	4117012-05	Soil	09/15/04 09:52	09/17/04 14:15
SB-2-10'	4117012-06	Soil	09/15/04 09:55	09/17/04 14:15

P.O. Box 301 Lovington TX, 88260 Project: Saunders 8 inch #4

Fax: (505) 396-1429

Reported:

Project Number: 2004-00184 Project Manager: Ken Dutton

09/26/04 11:02

# Organics by GC Environmental Lab of Texas

		Environ	mental L	an or 16			<del>,</del>		<del></del>
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
SB-1-5' (4I17012-01) Soil									
Benzene	0.604	0.0250	mg/kg dry	25	EI42407	09/22/04	09/22/04	EPA 8021B	
<b>Foluene</b>	9.36	0.0250	19	11		n	u	n	
Ethylbenzene	3.75	0.0250	"	n	**	11	u	"	
Kylene (p/m)	18.8	0.0250	"	,		"	· ·	n	
Xylene (o)	7.50	0.0250	u	77	D	н	0		
Surrogate: a,a,a-Trifluorotoluene		522 %	80-1	20	"	"	"	n .	S-0
Surrogate: 4-Bromofluorobenzene		115 %	80-1	20	"	"	"	u	
Gasoline Range Organics C6-C12	1730	10.0	mg/kg dry	1	EI41720	09/20/04	09/21/04	EPA 8015M	
Diesel Range Organics >C12-C35	3900	10.0	**	11	"	n	"	,,	
Total Hydrocarbon C6-C35	5630	10.0	"	H	н	n	ıı	н	
Surrogate: 1-Chlorooctane		138 %	70-1	30	,	"	"	n	S-0
urrogate: 1-Chlorooctadecane		147 %	70-1	30	n	n	"	"	S-0
5B-1-15' (4I17012-02) Soil									
Benzene	0.216	0.0250	mg/kg dry	25	EI42407	09/22/04	09/22/04	EPA 8021B	
'oluene	3.96	0.0250	u	**	**	ч	R	11	
Cthylbenzene	2.57	0.0250	ч	т н	19	Ħ	н	11	
Kylene (p/m)	14.3	0.0250	u	н	**	**	п	11	
(ylene (o)	5.34	0.0250	11	11	It	11	п	**	
Surrogate: a,a,a-Trifluorotoluene		244 %	80-1	20	n	,,	"	"	S-0
Gurrogate: 4-Bromofluorobenzene		118 %	80-1	20	,,	"	"	"	
Gasoline Range Organics C6-C12	1800	10.0	mg/kg dry	1	El41720	09/20/04	09/21/04	EPA 8015M	
Diesel Range Organics >C12-C35	4210	10.0	11	**	11	"	н	н	
Cotal Hydrocarbon C6-C35	6010	10.0	ч	10	**	**	•	"	
urrogate: 1-Chlorooctane		145 %	70-1	30	"	"	,,	n .	S-0
Surrogate: 1-Chlorooctadecane		181 %	70-1	30	"	"	"	"	S-0
5B-1-30' (4I17012-03) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EI42407	09/22/04	09/22/04	EPA 8021B	
Coluene	ND	0.0250	u	11	n,	11	11	P	
Ethylbenzene	ND	0.0250	u	11	14	11	H	n	
(ylene (p/m)	ND	0.0250	n	**	11	Ħ	н	u	
(ylene (o)	ND	0.0250	n	**	**	и	11	II.	
urrogate: a,a,a-Trifluorotoluene		92.8 %	80-1	20	"	"	,,	"	
urrogate: 4-Bromofluorobenzene		80.6 %	80-1	20	и	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EI41720	09/20/04	09/22/04	EPA 8015M	
Diesel Range Organics >C12-C35	26.7	10.0	n	**	n	11	"	tr	
Total Hydrocarbon C6-C35	26.7	10.0	"		н	в	,,	n	

Environmental Lab of Texas

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

P.O. Box 301

Lovington TX, 88260

Project: Saunders 8 inch #4

Project Number: 2004-00184

Project Manager: Ken Dutton

Fax: (505) 396-1429

Reported: 09/26/04 11:02

# Organics by GC Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-1-30' (4I17012-03) Soil	····								
Surrogate: 1-Chlorooctane		100 %	70-1.	30	EI41720	09/20/04	09/22/04	EPA 8015M	
Surrogate: 1-Chlorooctadecane		110 %	70-1.	30	"	n	n	п	
SB-1-40' (4I17012-04) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EI42407	09/22/04	09/22/04	EPA 8021B	
Toluene	ND	0.0250	n	н	"	11	"	и	
Ethylbenzene	ND	0.0250	Ħ	"	11	11	11		
Xylene (p/m)	ND	0.0250	n	**	**	11	*	n	
Xylene (o)	ND	0.0250	11	.,	"	n	н		
Surrogate: a,a,a-Trifluorotoluene		97.3 %	80-1.	20	"	"	"	n .	
Surrogate: 4-Bromofluorobenzene		81.1 %	80-1.	20	"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EI41720	09/20/04	09/21/04	EPA 8015M	
Diesel Range Organics >C12-C35	J [5.69]	10.0	n	н	"	10	**	**	1
Total Hydrocarbon C6-C35	ND	10.0	"	"	0	n	n		
Surrogate: 1-Chlorooctane		80.6 %	70-1.	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		72.0 %	70-1.	30	"	"	,,	"	
SB-2-5' (4I17012-05) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EI42407	09/22/04	09/22/04	EPA 8021B	
Toluene	ND	0.0250	**	"	n	n		u	
Ethylbenzene	ND	0.0250	"	ti.	**	"	11	"	
Xylene (p/m)	ND	0.0250	**	11		19	"	is.	
Xylene (o)	ND	0.0250	**	**	**	U	**	н	
Surrogate: a,a,a-Trifluorotoluene		94.6 %	80-1.	20	n	*	"	"	
Surrogate: 4-Bromofluorobenzene		81.7 %	80-1.	20	"	"	"	n	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EI41720	09/20/04	09/21/04	EPA 8015M	
Diesel Range Organics >C12-C35	J [6.50]	10.0	tt.	u	. "	11		**	:
Total Hydrocarbon C6-C35	ND	10.0	"	"	*	**	н	v	
Surrogate: 1-Chlorooctane		93.6 %	70-1.	30	,,	н	,,	n	
Surrogate: 1-Chlorooctadecane		71.0 %	70-1.	30	"	"	"	"	

P.O. Box 301 Lovington TX, 88260 Project: Saunders 8 inch #4

Fax: (505) 396-1429

Project Number: 2004-00184

Project Manager: Ken Dutton

**Reported:** 09/26/04 11:02

# Organics by GC Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-2-10' (4I17012-06) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EI42407	09/22/04	09/22/04	EPA 8021B	
Toluene	ND	0.0250	n	n	u	"	ıı	н	
Ethylbenzene	ND	0.0250	u	11	"	"	**	н	
Xylene (p/m)	ND	0.0250	17	19	**	u	11	11	
Xylene (o)	ND	0.0250	"	u	**	11	"	u	
Surrogate: a,a,a-Trifluorotoluene		89.2 %	80-1	20	"	"	"	,	
Surrogate: 4-Bromofluorobenzene		80.2 %	80-1	20	"	n	n	•	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EI41720	09/20/04	09/21/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	H	ıı	**	"	11	n	
Total Hydrocarbon C6-C35	ND	10.0	n	n	n	n	"	n	
Surrogate: 1-Chlorooctane		99.0 %	70-1.	30	"	n	"	н	
Surrogate: 1-Chlorooctadecane		70.4 %	70-1.	30	н	"	"	"	

Basin Environmental Services P.O. Box 301

Project: Saunders 8 inch #4

Fax: (505) 396-1429

Reported:
09/26/04 11:02

Lovington TX, 88260

Project Number: 2004-00184 Project Manager: Ken Dutton

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

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-1-5' (4I17012-01) Soil									
% Solids	91.0		%	1	EI42110	09/20/04	09/21/04	% calculation	
SB-1-15' (4I17012-02) Soil									
% Solids	74.0		%	1	EI42110	09/20/04	09/21/04	% calculation	
SB-1-30' (4I17012-03) Soil									
% Solids	98.0		%	1	EI42110	09/20/04	09/21/04	% calculation	
SB-1-40' (4I17012-04) Soil									
% Solids	98.0		%	1	EI42110	09/20/04	09/21/04	% calculation	
SB-2-5' (4I17012-05) Soil									_
% Solids	97.0		%	1	EI42110	09/20/04	09/21/04	% calculation	
SB-2-10' (4I17012-06) Soil									
% Solids	96.0		%	1	EI42110	09/20/04	09/21/04	% calculation	

P.O. Box 301 Lovington TX, 88260 Project: Saunders 8 inch #4

Project Number: 2004-00184
Project Manager: Ken Dutton

Fax: (505) 396-1429

**Reported:** 09/26/04 11:02

# Organics by GC - Quality Control Environmental Lab of Texas

Analysta	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Analyte	Result	Limit	Units	revel	Kesun	/OKEC	Limits	KFD	Limit	ivotes
Batch EI41720 - Solvent Extraction (GC)			<del></del>				· · · · · · · · · · · · · · · · · · ·			
Blank (EI41720-BLK1)				Prepared: (	9/20/04 At	nalyzed: 09	/21/04			
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	o							
Total Hydrocarbon C6-C35	ND	10.0	11							
Surrogate: 1-Chlorooctane	52.1		mg/kg	50.0		104	70-130			
Surrogate: I-Chlorooctadecane	62.4		"	50.0		125	70-130			
Blank (EI41720-BLK2)				Prepared: (	09/20/04 Ar	nalyzed: 09	/21/04			
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	н							
Total Hydrocarbon C6-C35	ND	10.0	n							
Surrogate: 1-Chlorooctane	44.8		mg/kg	50.0		89.6	70-130			
Surrogate: 1-Chlorooctadecane	36. I		"	50.0		72.2	70-130			
LCS (EI41720-BS1)				Prepared &	: Analyzed:	09/20/04				
Gasoline Range Organics C6-C12	418	10.0	mg/kg wet	500		83.6	75-125			
Diesel Range Organics >C12-C35	412	10.0	н	500		82.4	75-125			
Total Hydrocarbon C6-C35	830	10.0	17	1000		83.0	75-125			
Surrogate: 1-Chlorooctane	49.4		mg/kg	50.0		98.8	70-130			
Surrogate: 1-Chlorooctadecane	35.6		"	50.0		71.2	70-130			
LCS (EI41720-BS2)				Prepared: 0	19/20/04 Ar	nalyzed: 09	/21/04			
Gasoline Range Organics C6-C12	438	10.0	mg/kg wet	500		87.6	75-125			
Diesel Range Organics >C12-C35	470	10.0	11	500		94.0	75-125			
Total Hydrocarbon C6-C35	908	10.0	11	1000		90.8	75-125			
Surrogate: 1-Chlorooctane	49.5		mg/kg	50.0		99.0	70-130			
Surrogate: 1-Chlorooctadecane	35.5		n	50.0		71.0	70-130			
Calibration Check (EI41720-CCV1)				Prepared &	Analyzed:	09/20/04				
Gasoline Range Organics C6-C12	455		mg/kg	500		91.0	80-120			··· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·· ··
Diesel Range Organics >C12-C35	552		n	500		110	80-120			
Fotal Hydrocarbon C6-C35	1010		"	1000		101	80-120			
Surrogate: 1-Chlorooctane	57.2		"	50.0		114	70-130			
Surrogate: 1-Chlorooctadecane	61.2		"	50.0		122	70-130			

P.O. Box 301 Lovington TX, 88260 Project: Saunders 8 inch #4

Fax: (505) 396-1429

Reported:

Project Number: 2004-00184 Project Manager: Ken Dutton

09/26/04 11:02

# 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
niaiyu	Kesuit	Limit	- Units	- Level	I Count	/6ICEC	Lilling	NI D	Liiiit	140168
Batch EI41720 - Solvent Extraction (GC)										
Calibration Check (EI41720-CCV2)				Prepared: (	09/20/04 Ai	nalyzed: 09	/21/04			
Gasoline Range Organics C6-C12	436		mg/kg	500		87.2	80-120			
Diesel Range Organics >C12-C35	583		11	500		117	80-120			
Total Hydrocarbon C6-C35	1020		11	1000		102	80-120			
Surrogate: 1-Chlorooctane	57.7		"	50.0		115	70-130			
Surrogate: 1-Chlorooctadecane	62.6		"	50.0		125	70-130			
Matrix Spike (EI41720-MS1)	Sou	rce: 4I17011-	-06	Prepared &	Analyzed:	09/20/04				
Gasoline Range Organics C6-C12	428	10.0	mg/kg dry	510	ND	83.9	75-125			
Diesel Range Organics >C12-C35	543	10.0	н	510	19.1	103	75-125			
Total Hydrocarbon C6-C35	971	10.0	U	1020	19.1	93.3	75-125			
Surrogate: 1-Chlorooctane	53.7		mg/kg	50.0		107	70-130			
Surrogate: 1-Chlorooctadecane	50.1		"	50.0		100	70-130			
Matrix Spike (EI41720-MS2)	Sou	rce: 4I17012-	-05	Prepared: (	09/20/04 Ar	nalyzed: 09	/21/04			
Gasoline Range Organics C6-C12	466	10.0	mg/kg dry	515	ND	90.5	75-125			
Diesel Range Organics >C12-C35	540	10.0	N	515	6.50	104	75-125			
Total Hydrocarbon C6-C35	1010	10.0	*	1030	ND	98.1	75-125			
Surrogate: 1-Chlorooctane	58.4		mg/kg	50.0		117	70-130			
Surrogate: 1-Chlorooctadecane	43.5		"	50.0		87.0	70-130			
Matrix Spike Dup (EI41720-MSD1)	Sou	rce: 4I17011-	-06	Prepared &	. Analyzed:	09/20/04				
Gasoline Range Organics C6-C12	445	10.0	mg/kg dry	510	ND	87.3	75-125	3.89	20	
Diesel Range Organics >C12-C35	563	10.0	"	510	19.1	107	75-125	3.62	20	
Total Hydrocarbon C6-C35	1010	10.0	"	1020	19.1	97.1	75-125	3.94	20	
Surrogate: 1-Chlorooctane	56.0		mg/kg	50.0		112	70-130			
Surrogate: 1-Chlorooctadecane	50.5		"	50.0		101	70-130			
Matrix Spike Dup (EI41720-MSD2)	Sou	rce: 4117012-	-05	Prepared: (	09/20/04 Ar	nalyzed: 09	/21/04			
Gasoline Range Organics C6-C12	460	10.0	mg/kg dry	515	ND	89.3	75-125	1.30	20	
Diesel Range Organics >C12-C35	540	10.0	n	515	6.50	104	75-125	0.00	20	
Total Hydrocarbon C6-C35	1000	10.0	н	1030	ND	97.1	75-125	0.995	20	
urrogate: 1-Chlorooctane	58.2		mg/kg	50.0	· · · · · · · · · · · · · · · · · · ·	116	70-130			
urrogate: 1-Chlorooctadecane	43.9		"	50.0		87.8	70-130			

P.O. Box 301

Lovington TX, 88260

Project: Saunders 8 inch #4

Project Number: 2004-00184

Project Manager: Ken Dutton

Fax: (505) 396-1429

Reported:

09/26/04 11:02

# 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 EI42407 - EPA 5030C (GC)									-	
Blank (EI42407-BLK1)				Prepared &	Analyzed:	09/22/04				
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	51							
Xylene (p/m)	ND	0.0250	**							
Xylene (o)	ND	0.0250	u							
Surrogate: a,a,a-Trifluorotoluene	94.9		ug/kg	100		94.9	80-120			
Surrogate: 4-Bromofluorobenzene	80.4		n	100		80.4	80-120			
LCS (EI42407-BS1)				Prepared &	Analyzed:	09/22/04				
Benzene	105		ug/kg	100		105	80-120			
Toluene	106		*1	100		106	80-120			
Ethylbenzene	101		**	100		101	80-120			
Xylene (p/m)	226		**	200		113	80-120			
Xylene (o)	106		n	100		106	80-120			
Surrogate: a,a,a-Trifluorotoluene	117		"	100		117	80-120			
Surrogate: 4-Bromofluorobenzene	98.0		n	100		98.0	80-120			
Calibration Check (EI42407-CCV1)				Prepared: 0	9/22/04 A	nalyzed: 09	/23/04			
Benzene	105		ug/kg	100		105	80-120			
Toluene	106		"	100		106	80-120			
Ethylbenzene	101		"	100		101	80-120			
Xylene (p/m)	224		*	200		112	80-120			
Xylene (o)	104		ıt	100		104	80-120			
Surrogate: a,a,a-Trifluorotoluene	116		"	100		116	80-120			
Surrogate: 4-Bromofluorobenzene	93.6		n	100		93.6	80-120			
Matrix Spike (EI42407-MS1)	Sou	rce: 4I17012-	-05	Prepared: 0	9/22/04 A	nalyzed: 09	/23/04			
Benzene	108		ug/kg	100	ND	108	80-120		****	
Toluene	107		**	100	ND	107	80-120			
Ethylbenzene	103		**	100	ND	103	80-120			
Xylene (p/m)	228		**	200	ND	114	80-120			
Xylene (o)	108		п	100	ND	108	80-120			
Surrogate: a,a,a-Trifluorotoluene	119		n	100		119	80-120			
Surrogate: 4-Bromofluorobenzene	98.1		n	100		98.1	80-120			

P.O. Box 301 Lovington TX, 88260 Project: Saunders 8 inch #4

Project Number: 2004-00184
Project Manager: Ken Dutton

Fax: (505) 396-1429

**Reported:** 09/26/04 11:02

# Organics by GC - Quality Control Environmental Lab of Texas

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

Matrix Spike Dup (EI42407-MSD1)	Source: 4	I17012-05	Prepared: (	09/22/04 A	nalyzed: 0	9/23/04		
Benzene	114	ug/kg	100	ND	114	80-120	5.41	20
Toluene	109	**	100	ND	109	80-120	1.85	20
Ethylbenzene	102	n	100	ND	102	80-120	0.976	20
Xylene (p/m)	237	"	200	ND	118	80-120	3.45	20
Xylene (o)	105	**	100	ND	105	80-120	2.82	20
Surrogate: a,a,a-Trifluorotoluene	117	и	100		117	80-120		
Surrogate: 4-Bromofluorobenzene	95.1	"	100		95.1	80-120		

Project: Saunders 8 inch #4

Fax: (505) 396-1429

P.O. Box 301

Project Number: 2004-00184

Reported:

Lovington TX, 88260

Project Manager: Ken Dutton

09/26/04 11:02

# General Chemistry Parameters by EPA / Standard Methods - Quality Control **Environmental Lab of Texas**

		Reporting		Spike	Source		%REC		RPD	1
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EI42110 - % Solids						
Blank (EI42110-BLK1)			Prepared: 09/20/04 Analyzed: 09/21	/04		
% Solids	100	%				
Duplicate (EI42110-DUP1)	Source: 4I17011-03		Prepared: 09/20/04 Analyzed: 09/21	/04		
% Solids	93.0	%	93.0	0.00	20	

Basin Environmental Services	Project:	Saunders 8 inch #4	Fax: (505) 396-1429
P.O. Box 301	Project Number:	2004-00184	Reported:
Lovington TX, 88260	Project Manager:	Ken Dutton	09/26/04 11:02

#### **Notes and Definitions**

The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect. S-04 J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). Analyte DETECTED DET Analyte NOT DETECTED at or above the reporting limit ND Not Reported NR Sample results reported on a dry weight basis dry RPD Relative Percent Difference Laboratory Control Spike LCS Matrix Spike MS Duplicate Dup

Report Approved By:	Kaland Khads	Date:	9/26/04

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

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

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

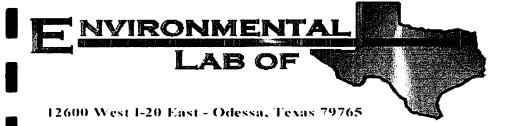
### **Environmental Lab of Texas**

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

Client: Passes Consequences !				
Date/Time: <u>C9-17-04-6-1545</u>				
Order #:				
Initials: OMM				
Sample Receip	t Checkli	st		
Temperature of container/cooler?	Yes	No	_1.5 C	
Shipping container/cooler in good condition?	Yes	No	A STATE OF THE PROPERTY OF THE	
Custody Seals intact on snipping 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	The state of the s	
Samples properly preserved?	Yes	No		
Sample bottles intact?	Cyes	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?	Yea	No	Not Applicable	
Other observations:				
Contact Person: Date/Time: Regarding:			Contacted by:	
Corrective Action Taken:				
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## **Analytical Report**

#### **Prepared for:**

Ken Dutton

Basin Environmental Services

P.O. Box 301

Lovington, NM 88260

Project: Saunders 8 inch #4 Project Number: 2004-00184 Location: Lea County, NM

Lab Order Number: 4K05015

Report Date: 11/11/04

P.O. Box 301 Lovington NM, 88260 Project: Saunders 8 inch #4

Project Number: 2004-00184
Project Manager: Ken Dutton

Fax: (505) 396-1429

Reported: 11/11/04 10:22

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Exc. Floor-RP-5' BGS	4K05015-01	Soil	11/04/04 13:05	11/05/04 15:27
Exc. Floor-Pooling Area 4'	4K05015-02	Soil	11/04/04 13:10	11/05/04 15:27
West Wall-Exc	4K05015-03	Soil	11/04/04 13:20	11/05/04 15:27
East Wall-Exc	4K05015-04	Soil	11/04/04 13:25	11/05/04 15:27
North Wall-Exc	4K05015-05	Soil	11/04/04 13:30	11/05/04 15:27
South Wall-Exc	4K05015-06	Soil	11/04/04 13:40	11/05/04 15:27

P.O. Box 301 Lovington NM, 88260 Project: Saunders 8 inch #4

Project Number: 2004-00184 Project Manager: Ken Dutton Fax: (505) 396-1429

Reported: 11/11/04 10:22

## Organics by GC Environmental Lab of Texas

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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.

P.O. Box 301

Lovington NM, 88260

Project: Saunders 8 inch #4

Project Number: 2004-00184 Project Manager: Ken Dutton Fax: (505) 396-1429

Reported: 11/11/04 10:22

## Organics by GC Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
West Wall-Exc (4K05015-03) Soil									
Surrogate: 1-Chlorooctane		102 %	70-1	30	EK40508	11/05/04	11/06/04	EPA 8015M	
Surrogate: 1-Chlorooctadecane		117 %	70-1	30	n	H	"	n	
East Wall-Exc (4K05015-04) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK41003	11/09/04	11/10/04	EPA 8021B	
Toluene	ND	0.0250	*	**	*	•	Ħ	n	
Ethylbenzene	ND	0.0250	н	"	#	n	11		
Xylene (p/m)	ND	0.0250	**	н	•	**	**	"	
Xylene (o)	ND	0.0250	H		11	"	'n	v	
Surrogate: a,a,a-Trifluorotoluene		93.2 %	80-1	20	n	u	,,	n	
Surrogate: 4-Bromofluorobenzene		97.4 %	80-1	20	tr	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EK40508	11/05/04	11/06/04	EPA 8015M	
Diesel Range Organics >C12-C35	81.8	10.0	**	**	11	ч	H	Ħ	
Total Hydrocarbon C6-C35	81.8	10.0	••	11	11	**	**	•	
Surrogate: 1-Chlorooctane		96.2 %	70-1	30	"	n	"	"	
Surrogate: 1-Chlorooctadecane		101 %	70-1	30	n	*	#	"	
North Wall-Exc (4K05015-05) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK41003	11/09/04	11/10/04	EPA 8021B	
Toluene	J [0.0126]	0.0250	**	n	**	*	*	11	j
Ethylbenzene	ND	0.0250	11	**	•	ч	te	H.	
Xylene (p/m)	0.0524	0.0250	#	"	**	н	H	**	
Xylene (o)	J [0.0149]	0.0250	**	н	n	0	H	Ħ	j
Surrogate: a,a,a-Trifluorotoluene		89.3 %	80-1	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.1 %	80-1	20	"	"	"	н	
Gasoline Range Organics C6-C12	44.7	10.0	mg/kg dry	1	EK40508	11/05/04	11/06/04	EPA 8015M	
Diesel Range Organics >C12-C35	1150	10.0	н	n	11	**	11	#	
Total Hydrocarbon C6-C35	1200	10.0	"	"	n	**	11	11	
Surrogate: 1-Chlorooctane		102 %	70-1	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		109 %	70-1	30	,,	n	"	"	

P.O. Box 301 Lovington NM, 88260 Project: Saunders 8 inch #4

Project Number: 2004-00184

Project Manager: Ken Dutton

Fax: (505) 396-1429

Reported: 11/11/04 10:22

#### Organics by GC

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
South Wall-Exc (4K05015-06) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK41003	11/09/04	11/10/04	EPA 8021B	
Toluene	ND	0.0250	11		11	•	#	**	
Ethylbenzene	ND	0.0250	**	n	**	"	**	**	
Xylene (p/m)	ND	0.0250	**	и	**	**	**	17	
Xylene (o)	ND	0.0250	н	"	*	"		**	
Surrogate: a,a,a-Trifluorotoluene		92.2 %	80-12	20	"	77	,,	"	
Surrogate: 4-Bromofluorobenzene		96.6 %	80-12	20	"	"	н	"	
Gasoline Range Organics C6-C12	J [7.62]	10.0	mg/kg dry	1	EK40508	11/05/04	11/06/04	EPA 8015M	J
Diesel Range Organics >C12-C35	307	10.0		"	11	11	n	**	
Total Hydrocarbon C6-C35	307	10.0	"	11	11	"	tt.		
Surrogate: 1-Chlorooctane		105 %	70-13	30	"	H	"	n.	
Surrogate: 1-Chlorooctadecane		121 %	70-13	10	"	,,	"	"	

P.O. Box 301 Lovington NM, 88260 Project: Saunders 8 inch #4

Project Number: 2004-00184
Project Manager: Ken Dutton

Fax: (505) 396-1429

**Reported:** 11/11/04 10:22

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Exc. Floor-RP-5' BGS (4K05015-01) Soil									
% Moisture	12.0		%	1	EK40804	11/08/04	11/08/04	% calculation	
Exc. Floor-Pooling Area 4' (4K05015-02)	Soil								
% Moisture	7.0		%	1	EK40804	11/08/04	11/08/04	% calculation	
West Wall-Exc (4K05015-03) Soil									
% Moisture	11.0		%	1	EK40804	11/08/04	11/08/04	% calculation	
East Wall-Exc (4K05015-04) Soil									
% Moisture	14.0		%	1	EK40804	11/08/04	11/08/04	% calculation	
North Wall-Exc (4K05015-05) Soil									
% Moisture	6.0	•	%	1	EK40804	11/08/04	11/08/04	% calculation	
South Wall-Exc (4K05015-06) Soil									
% Moisture	7.0		%	1	EK40804	11/08/04	11/08/04	% calculation	

P.O. Box 301 Lovington NM, 88260 Project: Saunders 8 inch #4

Project Number: 2004-00184

Project Manager: Ken Dutton

Fax: (505) 396-1429

**Reported:** 11/11/04 10:22

#### 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 EK40508 - Solvent Extraction (GC)				****						
Blank (EK40508-BLK1)			•	Prepared &	k Analyzed:	11/05/04				
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	19							
Total Hydrocarbon C6-C35	ND	10.0	19							
Surrogate: 1-Chlorooctane	42.8		mg/kg	50.0		85.6	70-130			
Surrogate: 1-Chlorooctadecane	52.7		"	50.0		105	70-130			
Blank (EK40508-BLK2)				Prepared: 1	11/05/04 A	nalyzed: 11	/06/04			
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	11							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	44.9		mg/kg	50.0		89.8	70-130			
Surrogate: 1-Chlorooctadecane	52.4		"	50.0		105	70-130			
LCS (EK40508-BS1)				Prepared &	k Analyzed:	11/05/04				
Gasoline Range Organics C6-C12	446	10.0	mg/kg wet	500		89.2	75-125			
Diesel Range Organics >C12-C35	477	10.0	11	500		95.4	75-125			
Total Hydrocarbon C6-C35	923	10.0	11	1000		92.3	75-125			
Surrogate: 1-Chlorooctane	52.2		mg/kg	50.0		104	70-130			
Surrogate: 1-Chlorooctadecane	50.9		#	50.0		102	70-130			
LCS (EK40508-BS2)				Prepared: 1	11/05/04 A	nalyzed: 11	/06/04			
Gasoline Range Organics C6-C12	430	10.0	mg/kg wet	500		86.0	75-125			
Diesel Range Organics >C12-C35	502	10.0	. "	500		100	75-125			
Total Hydrocarbon C6-C35	932	10.0	11	1000		93.2	75-125			
Surrogate: 1-Chlorooctane	53.0	***************************************	mg/kg	50.0		106	70-130			
Surrogate: I-Chlorooctadecane	45.7		"	50.0		91.4	70-130			
LCS Dup (EK40508-BSD1)				Prepared &	Analyzed:	11/05/04				
Gasoline Range Organics C6-C12	437	10.0	mg/kg wet	500		87.4	75-125	2.04	20	
Diesel Range Organics >C12-C35	477	10.0	11	500		95.4	75-125	0.00	20	
Total Hydrocarbon C6-C35	914	10.0	*	1000		91.4	75-125	0.980	20	
Surrogate: 1-Chlorooctane	50.1		mg/kg	50.0	· · · · · · · · · · · · · · · · · · ·	100	70-130			

Surrogate: 1-Chlorooctadecane

107

70-130

50.0

53.3

P.O. Box 301 Lovington NM, 88260 Project: Saunders 8 inch #4

Project Number: 2004-00184 Project Manager: Ken Dutton

Fax: (505) 396-1429

Reported: 11/11/04 10:22

#### 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 EK40508 - Solvent Extraction (GC)										
Calibration Check (EK40508-CCV1)				Prepared &	z Analyze	1: 11/05/04				
Gasoline Range Organics C6-C12	503		mg/kg	500		101	80-120			
Diesel Range Organics >C12-C35	551		11	500		110	80-120			÷
Total Hydrocarbon C6-C35	1050		11	1000		105	80-120			
Surrogate: 1-Chlorooctane	55.5		"	50.0		111	70-130			
Surrogate: 1-Chlorooctadecane	53.2		"	50.0		106	70-130			
Calibration Check (EK40508-CCV2)				Prepared: 1	1/05/04	Analyzed: 11	/06/04			
Gasoline Range Organics C6-C12	493		mg/kg	500		98.6	80-120			
Diesel Range Organics >C12-C35	567		**	500		113	80-120			
Total Hydrocarbon C6-C35	1060		"	1000		106	80-120			
Surrogate: 1-Chlorooctane	55.6		"	50.0		111	70-130			
Surrogate: 1-Chlorooctadecane	54.5		"	50.0		109	70-130			
Matrix Spike (EK40508-MS2)	Sou	rce: 4K05013	3-14	Prepared: 1	1/05/04	Analyzed: 11	/06/04			
Gasoline Range Organics C6-C12	567	10.0	mg/kg dry	521	ND	109	75-125			
Diesel Range Organics >C12-C35	593	10.0	"	521	ND	114	75-125			
Total Hydrocarbon C6-C35	1160	10.0	"	1040	ND	112	75-125			
Surrogate: 1-Chlorooctane	58.8		mg/kg	50.0		118	70-130			
Surrogate: 1-Chlorooctadecane	56.0		"	50.0		112	70-130			
Matrix Spike Dup (EK40508-MSD2)	Sou	rce: 4K05013	3-14	Prepared: 1	1/05/04	Analyzed: 11	/06/04			
Gasoline Range Organics C6-C12	594	10.0	mg/kg dry	521	ND	114	75-125	4.65	20	
Diesel Range Organics >C12-C35	604	10.0	n	521	ND	116	75-125	1.84	20	
Total Hydrocarbon C6-C35	1200	10.0	11	1040	ND	115	75-125	3.39	20	
Surrogate: 1-Chlorooctane	59.4		mg/kg	50.0		119	70-130			
Surrogate: 1-Chlorooctadecane	53.1		"	50.0		106	70-130			

P.O. Box 301 Lovington NM, 88260 Project: Saunders 8 inch #4

Project Number: 2004-00184

Reported: 11/11/04 10:22

Fax: (505) 396-1429

Project Manager: Ken Dutton

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

Amelia	n !	Reporting	T Tracker	Spike	Source	N/DEC	%REC	D.D.D.	RPD	N7-4
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EK41003 - EPA 5030C (GC)							<del></del>			
Blank (EK41003-BLK1)				Prepared &	k Analyzed	: 11/09/04				
Benzene	ND	0.0250	mg/kg wet	:						
Foluene	ND	0.0250	11							
Ethylbenzene	ND	0.0250	"							
Kylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	17							
Surrogate: a,a,a-Trifluorotoluene	88.3		ug/kg	100		88.3	80-120			,
urrogate: 4-Bromofluorobenzene	102		"	100		102	80-120			
LCS (EK41003-BS1)				Prepared &	Analyzed	: 11/09/04				
Benzene	88.8		ug/kg	100		88.8	80-120			
Coluene	98.0		и	100		98.0	80-120			
Ethylbenzene	98.8		· ·	100		98.8	80-120			
Kylene (p/m)	220		ч	200		110	80-120			
Kylene (o)	102		"	100		102	80-120			
Surrogate: a,a,a-Trifluorotoluene	102		"	100		102	80-120			
Surrogate: 4-Bromofluorobenzene	117		"	100		117	80-120			
Calibration Check (EK41003-CCV1)				Prepared: 1	1/09/04 A	nalyzed: 11	/10/04			
Benzene	88.4		ug/kg	100		88.4	80-120			
l'oluene l'alle	98.0		"	100		98.0	80-120			
Ethylbenzene	92.2		"	100		92.2	80-120			
Xylene (p/m)	199		"	200		99.5	80-120			
Kylene (o)	95.5		"	100		95.5	80-120			
Surrogate: a,a,a-Trifluorotoluene	105		"	100		105	80-120			
Surrogate: 4-Bromofluorobenzene	102		"	100		102	80-120			
Matrix Spike (EK41003-MS1)	Sou	rce: 4K08003	3-01	Prepared:	11/09/04 A	nalyzed: 11	/10/04			
Benzene	87.9		ug/kg	100	ND	87.9	80-120			-,
Coluene	98.0		11	100	ND	98.0	80-120			
Ethylbenzene	103			100	ND	103	80-120			
Kylene (p/m)	225		11	200	ND	112	80-120			
Kylene (o)	106		11	100	ND	106	80-120			
Surrogate: a,a,a-Trifluorotoluene	106		"	100		106	80-120			

Surrogate: 4-Bromofluorobenzene

115

80-120

100

115

P.O. Box 301

Lovington NM, 88260

Project: Saunders 8 inch #4

Project Number: 2004-00184

Project Manager: Ken Dutton

Fax: (505) 396-1429

Reported: 11/11/04 10:22

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

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

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Matrix Spike Dup (EK41003-MSD1)	Source: 4	Prepared: 1						
Benzene	90.9	ug/kg	100	ND	90.9	80-120	3.36	20
Toluene	103	**	100	ND	103	80-120	4.98	20
Ethylbenzene	106	11	100	ND	106	80-120	2.87	20
Xylene (p/m)	235	**	200	ND	118	80-120	5.22	20
Xylene (o)	110	n	100	ND	110	80-120	3.70	20
Surrogate: a,a,a-Trifluorotoluene	110	"	100		110	80-120		
Surrogate: 4-Bromofluorobenzene	116	"	100		116	80-120		

P.O. Box 301

Analyte

Lovington NM, 88260

Project: Saunders 8 inch #4

Project Number: 2004-00184

Project Manager: Ken Dutton

Fax: (505) 396-1429

Reported: 11/11/04 10:22

General Chemistry Parameters by EPA / Standard Methods - Quality Control Environmental Lab of Texas

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

Batch EK40804 - General Preparation (Prep)

Blank (EK40804-BLK1) Prepared & Analyzed: 11/08/04

% Moisture 0.0

**Duplicate (EK40804-DUP1)** Source: **4K05006-01** Prepared & Analyzed: 11/08/04

 % Moisture
 20.0
 %
 20.0
 0.00
 20

Basin Environmental Services Project: Saunders 8 inch #4 Fax: (505) 396-1429
P.O. Box 301 Project Number: 2004-00184 Reported:
Lovington NM, 88260 Project Manager: Ken Dutton 11/11/04 10:22

#### **Notes and Definitions**

J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). Analyte DETECTED DET Analyte NOT DETECTED at or above the reporting limit ND NR Not Reported dry Sample results reported on a dry weight basis RPD Relative Percent Difference LCS Laboratory Control Spike MS Matrix Spike Duplicate Dup

	Kaland K Julis		
Report Approved By:	Z Sear C 110	Date:	11/11/2004

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director James L. Hawkins, Chemist/Geologist Sandra Sanchez, Lab Tech.

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

#### 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 M	laneger: KEN DUTTON	<i></i>				·					Proje	ct Na	me:	SA	UN	L	RS.	8	>"	#	4		
Compan	ny Name BES				· · · · · · · · · · · · · · · · · · ·	************					ı	Projec	ct #;	El	13	: 2	100	<u>84</u>	_ :	18	4		
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City/St	tate/Zip: LOVINGTON,	NM 880	76¢			<del></del>		·				P	O #:										
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6015		_	1	ainers				3				2 2	CO3		3		8					Pre S	<b> </b>
4K05015		Sampled	Time Sampled	of Containers		HC: NaOH		Speci			Other (specify):	Cations (Ca. Mg. Na. K)	C SC	SAR / ESP / CEC	2	Semivolatiles	8021BV	3				TAT	Standard TAT
_AB # (lab use only)	FIELD CODE	Date	Time	NO.	8 H	J O	H,50	50	Wate Slude	₹	Oche	Setto.	Anjon	SAR	Volatiles	Semi	X3	NO.R.M				RUS	Stand
	EXC FLOOR-RP- 5' BGS	1. 1	V 1305	1	X					X		X.					X	$\bot$			$\perp \! \! \! \! \! \! \! \perp \! \! \! \! \! \! \! \! \! \! \!$		X
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		シ			V																		

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

Client: <u>Easin Environmental</u>					
Date/Time: <u>ローC5-でMで NGCC</u>					
Order #:					
Initials: TMM					
Sample Receipt	t Ch <u>e</u> ckli	st			
Temperature of container/cooler?	Yes	No	1.0	C	
Shipping container/cooler in good condition?	(Yes)				
Custody Seals intact on shipping container/cooler?	Yes	No	Not prese	en:	
Custody Seals intact on sample bottles?	Yes	No	Not prese		
Chain of custody present?	Yes		1,000		
Sample Instructions complete on Chain of Custody?	(Yes)	ć		and transmiss ordered it was been to	
Chain of Custody signed when relinquished and received?	Yes			The state of the same of	
Chain of custody agrees with sample label(s)	Yes	No.		And the second of the second of	
	Yes	No.			
Container labels legible and intact?					
Sample Matrix and properties same as on chain of custody?	Yes			NEW Systems (procedure of 1 to graphs and 4 to 5	
Samples in proper container/bottle?	العقاب			***************************************	
Samples properly preserved?	Yes			production of the second section is	
Sample bottles intact?	Yes	<u>No</u>		MA Square 1975-1984	
Preservations documented on Chain of Custody?	Yes	<u>No</u>	and proceedings of the process of the state	T. S. LA S. LILLEY CO. MICHIGAN V. S.	
Containers documented on Chain of Custody?	Yes	<u>No</u>			
Sufficient sample amount for indicated test?	الخشير ا	No_			
All samples received within sufficient hold time?	(VEE)	No		T enter to the terminal and the terminal	
VOC samples have zero headspace?	Year	No	. Not Applic	at e	
Other observations:					
Variance Docur	mentatio	n:			
Contact Person: Date/Time: Regarding:		************	Contacted	by:	APPLICATION OF THE PROPERTY OF
Corrective Action Taken:					
				ar ya taga a salah gagagangan a mengagan ya a talaga	
		gangganistra ya kiku <b>ara</b> Ma	And the state of t	and the second second second second	and the second section of the second section is a second section of the second section section is a second section sec

# APPENDIX C SOIL BORING LOGS

<b>Dep</b> th	Son Column	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
5		1012 ppm	Heavy	Heavy	Caliche Layer
10		889 ppm	Heavy	Heavy	Caliche Layer
15		712 ppm	Slight	None	Sand (SP) Red-Brown, Very Fine Grained, Well Sorted, Dry
20		625 ppm	Slight	None	
25		29.9 ppm	None	None	TD: 40 feet bgs
30		30.2 ppm	None	None	Soil Boring plugged with 8 bags of Bentonite  Samples selected for analysis
35		25.6 ppm	None	None	TITLE DESCRIPTION Saunders 8" # 4 Soil Boring 1
40	TD	13.4 ppm	None	None	DRAWN BY DATE KAD 15 Nov 04

Depth	Soil Column	PID	Petroleum	Petroleum		_
		Reading	Odor	Stain	Description	
	20 m					,
5		47.8 ppm	None	None	Caliche Layer	
	a ye teri Seriasis Garage					
	Junear in Alfologina Egit of					
	1					
10		3.0 ppm	None	None	Caliche Layer	
	(3/1/2/2) (4/2/2/2) (4/2/2/2)				TD: 15 feet bgs	
					Soil Boring plugged with 3 bags of Bentonite	
					Samples selected for	
					analysis	
4-					Sand (SP) Red-Brown, Very TITLE DESCRIPTION	<b>-</b>
15		4.2 ppm	None	None	Fine Grained, Well Sorted, Dry Saunders 8" # 4 Soil Boring 2	_
					DRAWN BY KAD DATE 15 Nov 04	

**APPENDIX D** 

NMOCD C-141

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

\* Attach Additional Sheets If Necessary

## State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505 Form C-141 Revised October 10, 2003 omit 2 Copies to appropriate

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

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			Rele	ase Notific	atio	n and Co	orrective A	ction							
						OPERA	ATOR		x Initi	al Report		Final I	Repo		
Name of Co	mpany Pla	ains Marketii	ig, LP			Contact Car	nille Reynolds		T						
		vy. 80, Midla		79706			No. 505-441-096	55							
Facility Nar			,			Facility Type 8"Steel Pipeline									
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Surface Ow	ner Norma	ın Hahn	··-	Mineral C	)wner				Lease N	ło.		<del></del>			
				LOCA	OITA	N OF REI	LEASE								
Unit Letter	Section	Township	Range	Feet from the		h/South Line	Feet from the	East/\	West Line	County					
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Type of Rele							Release 15 barre			lecovered					
Source of Re	lease 8" Ste	el Pipeline				Date and H 8-12-04 @	Hour of Occurrence  06:00	e	Date and 8-12-04 @	Hour of D  13:45	iscover	У			
Was Immedia	ate Notice (					If YES, To	Whom?		· · · · · · · · · · · · · · · · · · ·	<del></del>					
☐ Yes ☐ No ☐ Not Require															
By Whom? Camille Reynolds						Date and Hour 8-12-04 @ 19:00									
Was a Water	course Reac	hed?		If YES, Vo	olume Impacting t	he Wate	ercourse.								
If a Watercou	irse was Im	pacted. Descri	be Fully.*												
Describe Cau	se of Proble	em and Remed	lial Action	Taken.* Extern	al corr	osion of the 8"	steel pipeline. A	line cla	mp was ins	stalled to r	nitigate	the releas	se.		
							rels of crude per d								
psi and the gr	ravity of the	sweet crude	il is 38-42	2. The sweet cruc	ie has	an H <sub>2</sub> S content	t of less than 10 p	pm	-						
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7,176 ft <sup>2</sup> .	a Affected	and Cleanup A	споп так	en. The impacte	a son	was excavated	and stockpiled or	piasue	. Aenai ex 000		race im	pact was			
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	1			OIL CONSERVATION DIVISION											
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Signature!	Signature am ule humolds														
							District Supervise	sor:							
Printed Name	Printed Name: Camille Reynolds						•	T							
Title: Remed	Title: Remediation Coordinator						Approval Date: Expiration 1				on Date:				
		<del></del>													
E-mail Addre	ss: cjreyno	lds@paalp.coi	n			Conditions of	f Approval:			Attached					
Date: 8-17-04	1			Phone:505-441-	0965						-				



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

Governor

Joanna Prukop

Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

November 29, 2004

Ms. Camille Reynolds

cireynolds@paalp.com

Plains All American Pipeline

Re:

Plan Approval, Saunders 8" #4

Site Reference UL-F Sec-35 T-13S R-33E

Initial C-144 Dated: 8-12-04 Request Plan Dated: 11-15-04

Dear Ms. Reynolds,

The Remediation Work Plan Proposal submitted to the New Mexico Oil Conservation Division (OCD) by Basin Environmental for Plains All American Pipeline (PAAP) is **hereby approved for 120 days** with the following considerations:

- Immediate notification if additional contamination is discovered during excavation (any contamination undetected by borehole delineation)
- 48 hour notification to OCD prior to final sampling
- Progress reports of lift installations
- Disturbed areas to be seeded for re-vegetation of native grasses and other plants must demonstrate growth within a reasonable time after site remediation operations cease

Please be advised that OCD approval of this plan does not relieve PAAP of responsibility should their operations fail to adequately investigate and remediate contaminants that threaten ground water, surface water, human health or the environment. Additionally, OCD approval does not relieve PAAP of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you have any questions or need assistance please call (505) 393-6161, x111 or e-mail lwjohnson@state.nm.us

Sincerely,

Tolowon

Larry Johnson - Environmental Engineer

Cc:

Chris Williams - District I Supervisor
Ed Martin - Environmental Engineer
Paul Sheeley - Environmental Engineer
Ken Dutton – Basin Environmental Project Consultant

kdutton@basinenv.com