1R - 411

Landfarm Closure

REPORTS

DATE:

June 2008

PLAINS MARKETING, L.P.

December 22, 2008

Mr. Ed Hansen
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Plains Marketing, L.P. (formerly Link Energy)
Clay Osborn – Landfarm Closure Report (SRS No. 2000-10614)
SE/4, NE/4, Section 13, T25S, R36E
Lea County, New Mexico

Dear Mr. Hansen:

Please find enclosed a copy of the Landfarm Closure Report you requested for the above-referenced site.

Should you have any questions or comments concerning this information, please contact me at (713) 646-4657 or Jason Henry at (575) 441-1099.

Sincerely,

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

File: n/remediation/SRSfiles2000//2000-10614-LFCover1

Site Closure Report

Clay Osborn Rocky Top Ranch
Jalmat #22A Land Farm Site

SE¼ NE¼, Section 13
T25S, R36E
Lea County, New Mexico

SRS No. 2000-10614

Prepared For

PLAINS
PIPELINE, L.P.

333 Clay Street, Suite 1600
Houston, Texas 77002

Prepared By

SDG ENVIRONMENTAL SERVICES

June 2008

Table of Contents

1.0 Introduction

SDG Environmental Services was retained by Plains Pipeline, L.P. (Plains) to provide oversight of remediation activities and prepare a closure report for the Clay Osborn Jalmat #22A Land Farm site located on the Clay Osborn Rocky Top Ranch. Plains Pipeline is the owner/operator of several pipelines present on the Clay Osborn Rocky Top Ranch in Lea County, New Mexico. Plains retained Basin Environmental Services to conduct the soil excavation/remediation activities.

The Land Farm site is located in the SE ¼ of the NE ¼ of Section 13, Township 25 South, Range 36 East, approximately 1 mile northwest of Jal at Latitude 32°07′58″ North, and Longitude 103°12′38″ West. The Land Farm Area is characterized by a cleared area approximately 82,656 ft^2. A site location map is provided as Figure 1.

Plains prepared and submitted a General Remediation Work Plan dated April 2006 to address the release sites located at the Rocky Top Ranch. The objective of the General Remediation Work Plan was to provide a framework for remediation of crude oil impacted sites consistent with the remediation/abatement goals and objectives provided in the New Mexico Oil Conservation Division (NMOCD) "NMOCD Guidelines for Remediation of Leaks, Spills, and Releases." The general Remediation Work Plan was conditionally approved by the NMOCD in a letter to Plains dated May 30, 2006.

Soil analytical data and information obtained from the EPI December 2001 Investigation Reports for the site was used to develop an Investigation Reports and Site-Specific Remediation Work Plans. The Site Investigation and Site-Specific Remediation Work Plans dated July 2006 provided for closure of the sites under three closure scenarios. The closure scenario selected to be dependent on the conditions observed in the field. These selected closure scenarios are as follows.

Work Plan Scenario 1 (Surface Restoration)

This scenario was developed for areas 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.

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

Work Plan Scenario 2 (Total Excavation)

Areas where impacts greater than 1000 mg/kg TPH were limited in vertical extent (i.e. 5 to 10 feet in depth) were recommended to be remediated under the Work Plan Scenario 2 involving the following procedures as outlined in the approved Work Plan including NMOCD conditions presented in the May 2006 NMOCD approval letter.

- Excavation of impacted soil to between 5 to 10 feet bgs or until site remediation standards are met;

• Collect and analyze soil sample from the walls and floor of the excavation to confirm that the remediation has met site guidelines;
• Relocation of excavated soil to the centralized soil treatment area for blending and aeration;
• Collect and analyze treated soil to confirm that the soil treatment activities have met site guidelines;
• Backfill the excavation with treated soil to 1000 mg/kg and restore the area to as close as possible to pre-spill conditions.

Work Plan Scenario 3 (Limited Excavation and Risk-based Closure)

At areas of the site where data indicated that soil impacts extended to below 10 feet bgs and excavation of all the impacted soil to below NMOCD guidelines is not practical, Work Plan Scenario 3 was implemented.

Scenario 3 included the permanent installation of an oversized 20-mil polyethylene liner at a minimum depth of 12 feet to inhibit vertical migration of contaminants in soil left in place below the cap. A 3-foot wide clean area buffer was established around the impacted soil in the floor of the excavations.

Once the excavation was confirmed to meet NMOCD site specific standards and the installation of the liner was completed, backfilling with clean or land farm treated soil was initiated. The backfilled excavation was contoured to the original grade surrounding the site and restored by seeding with approved grass seed.

2.0 Regulatory Framework

In New Mexico, the MNOCD oversees and regulates oil, gas and geothermal activities, including compliance with environmental regulations. The Jalmat #22A Land Farm Site was evaluated after all treated soils were used as backfill in sites consistent with the characterization and remediation/abatement goals and objectives of the NMOCD approved Remediation Work Plans and the NMOCD guidelines defined in the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* (August 13, 1993). Primary contaminants, or constituents of concern (COCs), associated with crude oil releases include total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene, and total xylenes (BTEX). Acceptable levels for these COCs are determined based on a site ranking system. The ranking system estimates the likelihood of exposures to the COCs. The more likely that human exposure will occur, the more stringent the cleanup levels. The site ranking system is set up on the three following parameters:

- Depth to groundwater
- Wellhead protection area
- Distance to surface water body

3.0 Regional and Site Characteristics

3.1 Geological Description

The site is located east of the caprock escarpment which defines the western margin of the high plains or Llano Estacado of southeastern New Mexico. The surface is comprised of rolling hills with sand dunes of Quaternary age deposits, eroded Ogallala Formation and windblown deposits.

3.2 Land Use

Land usage in the area is primarily livestock range land and oil field activities. Several gas driven electric power stations are located in the vicinity of the site and several major oil and gas transmission lines bisect the region. The area in the immediate vicinity of the site is sparsely populated.

3.3 Ground Water

The depth to groundwater at the site is greater than 75 feet below ground surface (bgs) based on soil borings installed at an adjacent site. The depth to groundwater is consistent with the information provided in the USGS Groundwater Report 6. The New Mexico Office of the State Engineer database does not list any water wells in Range 36 East of Township 25.

4.0 NMOCD Site Ranking

The depth to water at the site is greater than 75 feet bgs. Based on the analytical results of soil samples collected after land farm treatment, the hydrocarbon impacted soil did not extend below the natural ground surface, however, it is assumed that 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 10.

The site is greater than 1000 feet 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. The retention basin is located southwest of the site. There are no water bodies not constructed as part of remediation within 1000 feet of the site. 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 between 10 and 19, which establish the remediation levels as shown in the following table demonstrating the site ranking matrix:

Table 1 – Site Ranking Matrix

Depth to Groundwater	Wellhead Protection Area	Distance to Surface Water
<50 feet = 20	<1000 feet from a water source, or <200 feet from a domestic water source	<200 feet = 20
50 to 99 feet = 10	Yes = 20	200 to 1000 feet = 10
>100 feet = 0	No = 0	>1000 feet = 0
Groundwater Score = 10	Well Protection Score = 0	Surface Water Score = 0
Total Site Ranking Score = 10		
Parameter	**Score of >19 Maximum Concentrations**	
Benzene	10 ppm	
BTX	50 ppm	
TPH	1000 ppm	

Based on this ranking system the site has a total score of 10 resulting in remediation goals of 10 ppm benzene, 50 ppm BTEX and 1000 ppm TPH.

5.0 Site Assessment

On 5 July 2001, initial subsurface horizontal and vertical delineation was conducted by EPI with the installation of 4 soil borings at the site. The 4 soil borings were installed to a depth of 4 feet bgs and soil samples were collected at depths of 0-1, and 3-4 feet bgs, field screened with a PID, and analyzed for BTEX and TPH-GRO/DRO. Laboratory results indicated that constituent concentrations of BTEX and TPH were either below NMOCD regulatory standards or not detected above laboratory method detection limits on the 8 soil samples.

On 25 May 2006, one soil boring was installed and surface soil samples were collected at the Land Farm to determine the baseline prior to soils treatment at the Land Farm. Analytical results indicated that constituent concentrations of BTEX and TPH concentrations did not exceeded the site-specific remediation goals.

5.1 Distribution of Hydrocarbons in the Unsaturated Zone

Impacted soils above the NMOCD guidelines did not extend below the ground surface during the period of Land Farm operation. No free phase hydrocarbons were treated at the Land Farm.

5.2 Distribution of Hydrocarbons in the Saturated Zone

No saturated conditions were reported in any of the borings or observed during later site remediation activities. Soil borings installed to 75 feet bgs at a nearby site did not encounter groundwater. Therefore, there is no indication that hydrocarbons from the historical release have impacted the saturated zone.

6.0 Site Remediation

Soils from the various Osborn Ranch remediation sites were hauled to the land farm and treated by blending and aeration. Following treatment to site-specific standards per the individual work plans, the soils were removed from the land farm area and reused in the individual remediation sites as backfill. No soils from offsite sources or other remediation sites were allowed in this land farm.

7.0 Confirmation Sampling and Comparison to Remediation Guideline Standards

After all soils were treated and removed, confirmation samples were collected from the four quadrants of the Land Farm area and submitted to Environmental Lab of Texas for laboratory analyses of total petroleum hydrocarbons (TPH) by EPA Method 8015M, and for benzene, toluene, ethyl benzene, and total xylenes (BTEX) by EPA Method 8021B, a copy of the laboratory report is presented in Appendix B.

Sample results were compared to the site-specific soil remediation guidelines. As indicated by the confirmation soil sampling data, all constituents for soils remaining in place are below the Jalmat 22A Land Farm site-specific cleanup guidelines. Therefore, remediation at this site is considered complete.

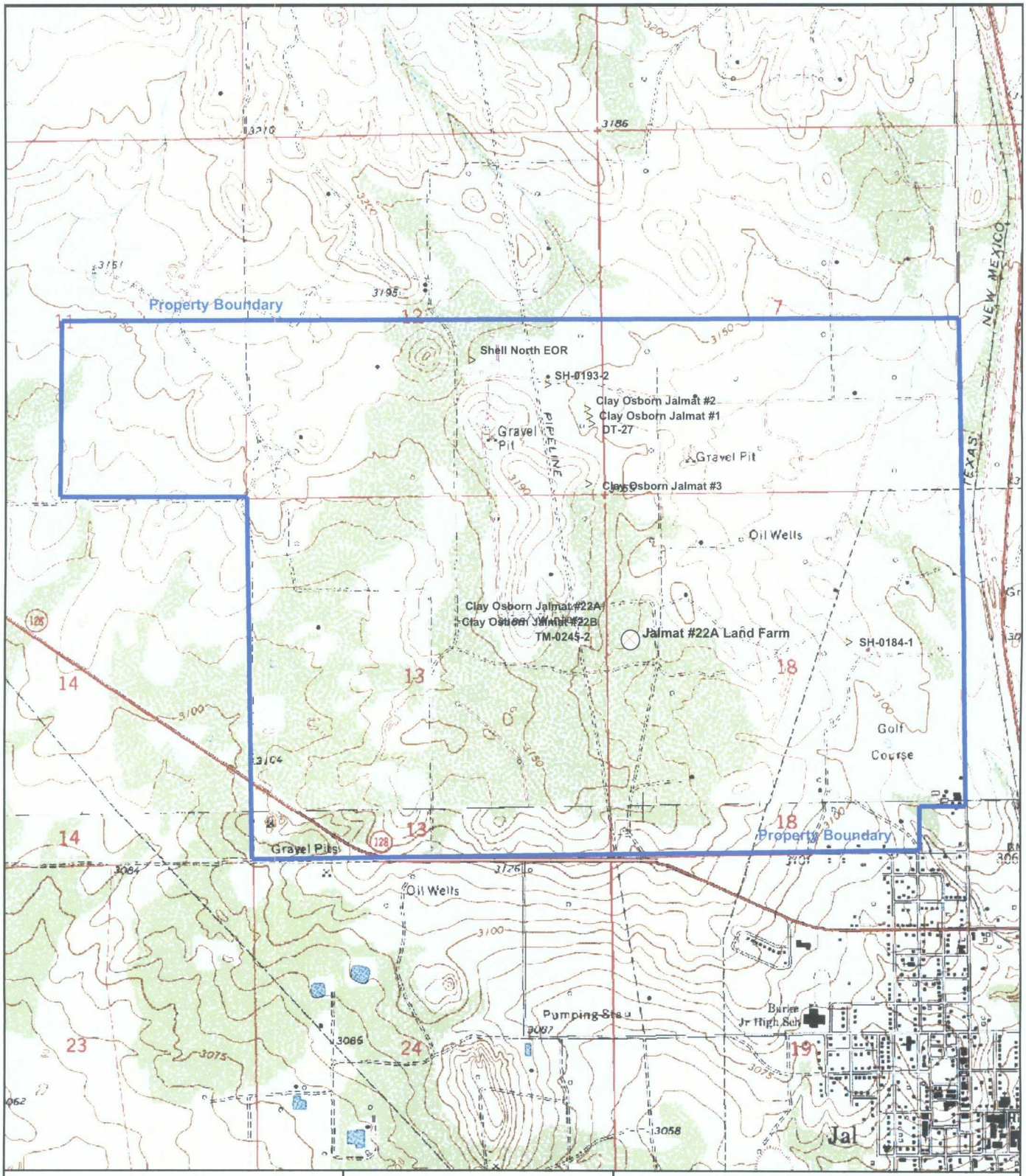
8.0 Conclusion

SDG Environmental Services was retained by Plains Pipeline, L.P. (Plains) to provide oversight of remediation activities and prepare a closure report for the Clay Osborn Jalmat #22A Land Farm site located on the Clay Osborn Rocky Top Ranch. The site is located in the SE ¼ of the NE ¼ of Section 13, Township 25 South, Range 36 East, approximately 1 mile northwest of Jal at Latitude 32°07′58″ North, and Longitude 103°12′38″ West.

The hydrocarbon impacted soils treated at the Land Farm area was the result of remediation at nearby historical release sites. A Site-Specific Remediation Work Plan dated April 2006 provided for closure of the release sites under three closure scenarios which were implemented in January through March 2007. Impacted soils were treated to NMOCD standards specified in the individual sites work plans. All treated soils were reused as backfill at the appropriate site and were closed in March 2008.

Confirmation soil samples were collected and were below the standards specified in the NMOCD approved Site-Specific Work Plan. Therefore, the Land Farm has been closed and no further investigation is warranted.

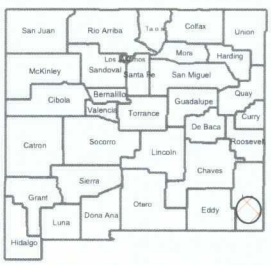
Appendix A
Figures



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

Site: Clay Osborn Jalmat 22A
SRS ID: 2000-10614

Legal Desc.: Section 13, T25N, R36E
Lat : 32 07 58 N
Long: 103 12 38 W



ENVIRONMENTAL SERVICES

Clay Osborn Jalmat 22A
SRS ID: 2000-10614
Plains Pipeline L.P.
Lea County, New Mexico

Figure 1: Site Location Map

Appendix B

Analytical Reports

Analytical Report 298830

for

PLAINS ALL AMERICAN EH&S

Project Manager: Camille Reynolds

Osborn Treatment Cell

2007-345

10-MAR-08

ENVIRONMENTAL LAB OF

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

10-MAR-08

Project Manager: **Camille Reynolds**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **298830**
Osborn Treatment Cell
Project Address: Lea County, NM

Camille Reynolds:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 298830. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 298830 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 298830

PLAINS ALL AMERICAN EH&S, Midland, TX

Osborn Treatment Cell

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
LF-1	S	Feb-29-08 14:45		298830-001
LF-2	S	Feb-29-08 14:55		298830-002
LF-3	S	Feb-29-08 15:05		298830-003
LF-4	S	Feb-29-08 15:20		298830-004

Certificate of Analysis Summary 298830

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Osborn Treatment Cell

Project Id: 2007-345
Contact: Camille Reynolds
Project Location: Lea County, NM

Date Received in Lab: Tue Mar-04-08 01:05 pm
Report Date: 10-MAR-08
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	298830-001		298830-002		298830-003		298830-004					
	Field Id:	LF-1		LF-2		LF-3		LF-4					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Feb-29-08 14:45		Feb-29-08 14:55		Feb-29-08 15:05		Feb-29-08 15:20					
BTEX by EPA 8021B	***Extracted:***	Mar-07-08 08:07		Mar-07-08 08:07		Mar-07-08 08:07		Mar-07-08 08:07					
	Analyzed:	Mar-07-08 11:11		Mar-07-08 12:06		Mar-07-08 17:57		Mar-07-08 18:15					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		ND	0.0010	ND	0.0010	0.0027	0.0010	0.0015	0.0010				
Toluene		ND	0.0020	ND	0.0020	0.0115	0.0020	0.0075	0.0020				
Ethylbenzene		ND	0.0010	ND	0.0010	0.0028	0.0010	0.0014	0.0010				
m,p-Xylenes		ND	0.0020	0.0025	0.0020	0.0079	0.0020	0.0047	0.0020				
o-Xylene		ND	0.0010	ND	0.0010	0.0021	0.0010	0.0017	0.0010				
Xylenes, Total		ND		0.0025		0.01		0.0064					
Total BTEX		ND		0.0025		0.027		0.0168					
Percent Moisture	***Extracted:***												
	Analyzed:	Mar-04-08 15:00		Mar-04-08 15:00		Mar-04-08 15:00		Mar-04-08 15:00					
	Units/RL:	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		.905		1.07		.969		.861					
TPH By SW8015 Mod	***Extracted:***	Mar-04-08 15:45		Mar-04-08 15:45		Mar-04-08 15:45		Mar-04-08 15:45					
	Analyzed:	Mar-08-08 00:13		Mar-08-08 00:39		Mar-08-08 01:05		Mar-08-08 01:31					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	15.1	ND	15.2	ND	15.1	ND	15.1				
C12-C28 Diesel Range Hydrocarbons		55.9	15.1	35.6	15.2	50.8	15.1	53.9	15.1				
C28-C35 Oil Range Hydrocarbons		38.4	15.1	36.6	15.2	44.8	15.1	44.9	15.1				
Total TPH		94.3		72.2		95.6		98.8					

Brent Barron
Odessa Laboratory Director

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL(PQL) and above the SQL(MDL).

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

* Outside XENCO'S scope of NELAC Accreditation

Form 2 - Surrogate Recoveries

Project Name: Osborn Treatment Cell

Work Order #: 298830 **Project ID:** 2007-345

Lab Batch #: 716530 **Sample:** 298830-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	80-120	
4-Bromofluorobenzene	0.0240	0.0300	80	80-120	

Lab Batch #: 716530 **Sample:** 298830-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0335	0.0300	112	80-120	

Lab Batch #: 716530 **Sample:** 298830-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 716530 **Sample:** 298830-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0338	0.0300	113	80-120	
4-Bromofluorobenzene	0.0240	0.0300	80	80-120	

Lab Batch #: 716530 **Sample:** 505608-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0352	0.0300	117	80-120	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Osborn Treatment Cell

Work Order #: 298830 **Project ID:** 2007-345

Lab Batch #: 716530 **Sample:** 505608-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 716530 **Sample:** 505608-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 716649 **Sample:** 298830-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.2	100	77	70-135	
o-Terphenyl	41.6	50.0	83	70-135	

Lab Batch #: 716649 **Sample:** 298830-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	59.7	50.0	119	70-135	

Lab Batch #: 716649 **Sample:** 298830-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	60.2	50.0	120	70-135	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Osborn Treatment Cell

Work Order #: 298830 **Project ID:** 2007-345

Lab Batch #: 716649 **Sample:** 298830-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.0	100	83	70-135	
o-Terphenyl	43.9	50.0	88	70-135	

Lab Batch #: 716649 **Sample:** 298830-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.1	100	78	70-135	
o-Terphenyl	41.6	50.0	83	70-135	

Lab Batch #: 716649 **Sample:** 298830-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.9	100	77	70-135	
o-Terphenyl	42.4	50.0	85	70-135	

Lab Batch #: 716649 **Sample:** 505649-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.3	100	96	70-135	
o-Terphenyl	51.9	50.0	104	70-135	

Lab Batch #: 716649 **Sample:** 505649-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	100	94	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Osborn Treatment Cell

Work Order #: 298830 **Project ID:** 2007-345

Lab Batch #: 716649 **Sample:** 505649-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.8	100	99	70-135	
o-Terphenyl	55.1	50.0	110	70-135	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Osborn Treatment Cell

Work Order #: 298830 **Project ID:** 2007-345

Analyst: SHE **Date Prepared:** 03/07/2008 **Date Analyzed:** 03/07/2008

Lab Batch ID: 716530 **Sample:** 505608-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1055	106	0.1	0.1019	102	3	70-130	35	
Toluene	ND	0.1000	0.1093	109	0.1	0.1027	103	6	70-130	35	
Ethylbenzene	ND	0.1000	0.1149	115	0.1	0.1074	107	7	71-129	35	
m,p-Xylenes	ND	0.2000	0.2350	118	0.2	0.2081	104	12	70-135	35	
o-Xylene	ND	0.1000	0.1194	119	0.1	0.1100	110	8	71-133	35	

Analyst: SHE **Date Prepared:** 03/04/2008 **Date Analyzed:** 03/07/2008

Lab Batch ID: 716649 **Sample:** 505649-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	843	84	1000	846	85	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	843	84	1000	848	85	1	70-135	35	

Relative Percent Difference RPD = 200*|(D-F)/(D+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

ENVIRONMENTAL LAB OF

Form 3 - MS / MSD Recoveries

Project Name: Osborn Treatment Cell

ACCREDITED IN ACCORDANCE WITH nelac

Work Order # : 298830 **Project ID:** 2007-345

Lab Batch ID: 716649 **QC- Sample ID:** 298830-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/10/2008 **Date Prepared:** 03/04/2008 **Analyst:** SHE

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1010	906	90	1010	962	95	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	55.9	1010	986	92	1010	1050	98	6	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Osborn Treatment Cell

Work Order #: 298830

Lab Batch #: 716178 **Project ID:** 2007-345

Date Analyzed: 03/04/2008 **Date Prepared:** 03/04/2008 **Analyst:** RBA

QC- Sample ID: 298807-007 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	3.54	4.23	18	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

Project Manager: Camille Reynolds PAGE 01 OF 01 Project Name: OSBORN TREATMENT CELL

Company Name: Plains Pipeline Project #: 2007-345

Company Address: 3112 West US Hwy 82 Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260 PO #: PAA - C. Reynolds

Telephone No: (505) 441-0965 Fax No: (505) 396-1429 Report Format: [X] Standard [ ] TRRP [ ] NPDES

Sampler Signature: Ben Dutton e-mail: cjreynolds@paalp.com

(lab use only) ORDER #: 298830

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW - Drinking Water SL - Sludge; GW - Groundwater S - Soil/Solid; NP - Non-Potable Specify Other	Analyze For: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	HCl	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
01	LF-1			29-Feb-08	1445		1	X								SOIL	X								X				X
02	LF-2			29-Feb-08	1455		1	X								SOIL	X								X				X
03	LF-3			29-Feb-08	1505		1	X								SOIL	X								X				X
04	LF-4			29-Feb-08	1520		1	X								SOIL	X								X				X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Ben Dutton	04MAR08	0745	Billy Blackwood	3-4-08	0745
Relinquished by:	Date	Time	Received by:	Date	Time
Billy Blackwood	3-4-08	1:05			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Cindy Parra	3-4-08	1105

Laboratory Comments:

Sample Containers Intact?	N	
VOCs Free of Headspace?	N	
Labels on container(s)	N	
Custody seals on container(s)	N	
Custody seals on cooler(s)	N	
Sample Hand Delivered	N	
by Sampler/Client Rep. ?		
by Couner? UPS DHL FedEx Lone Star	790291955	
Temperature Upon Receipt:	3.5 °C	

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Plains

Date/ Time: 3-4-08 1105

Lab ID # : 298830

Initials: AL

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	3.5 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont / Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20	VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

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

Hansen, Edward J., EMNRD

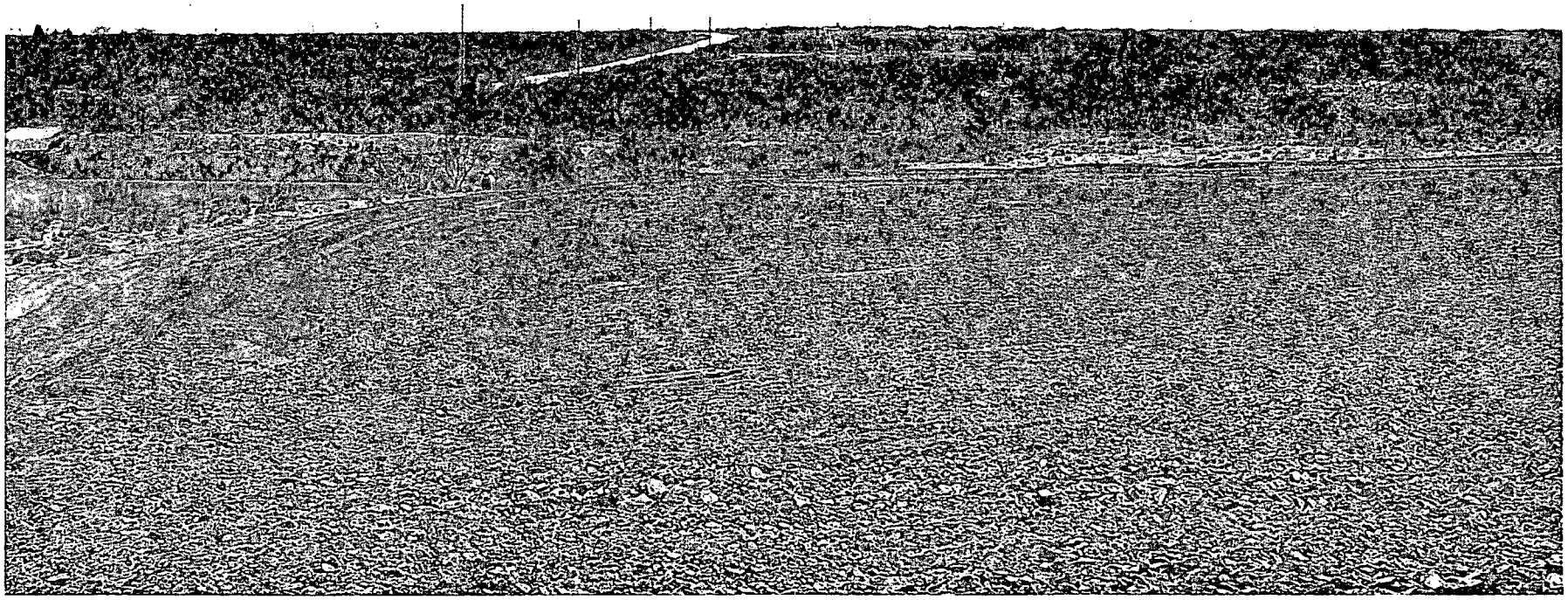
From: Jason Henry [JHenry@paalp.com]
Sent: Thursday, October 22, 2009 3:37 PM
To: Hansen, Edward J., EMNRD
Subject: Re-seeding documentation for Plains Osborn Landfarm site
Attachments: Osborn -Jalmat Seeding info.pdf

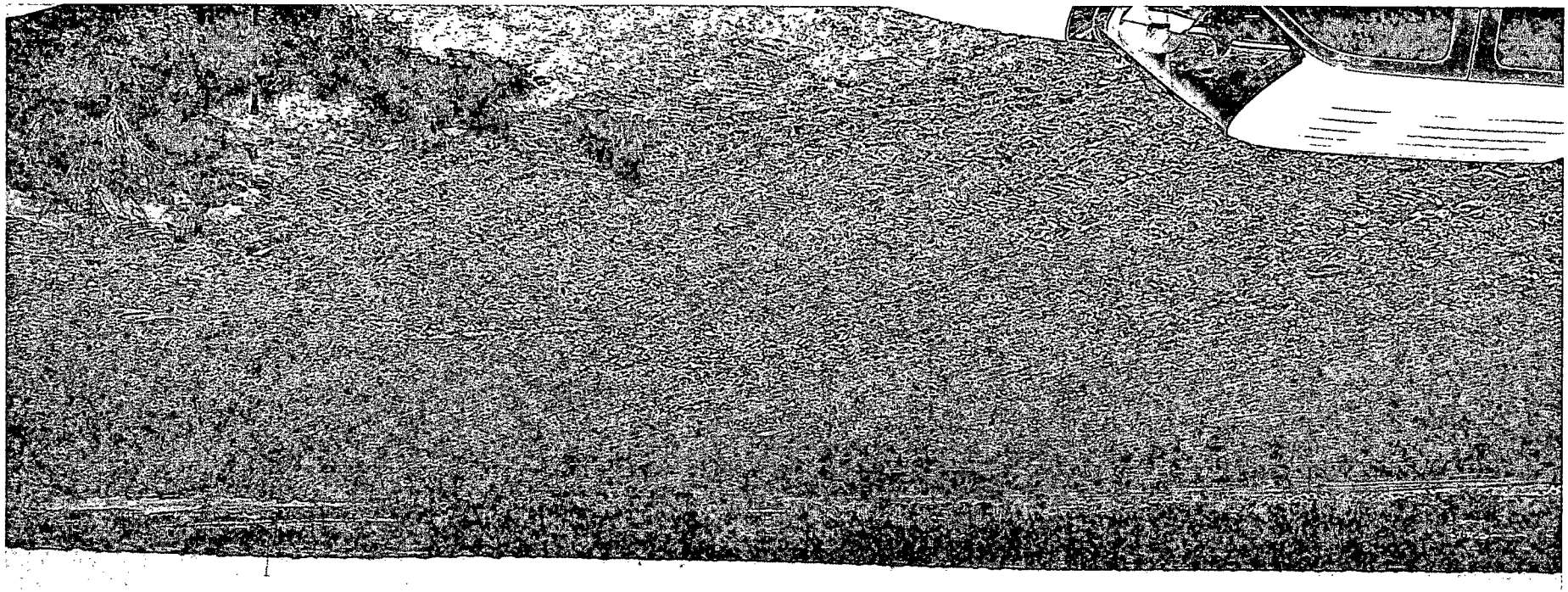
Ed,

The Osborn Landfarm site was re-seeded with a custom seed mix on May 24, 2007 by Basin Environmental personnel. Attached are a copy of the seed tag and some photographs of the site following re-seeding activities. The seed tag indicates that the seed mix was for the Osborn – Jalmat 22B site but the same seed mix was used at the landfarm site.

Please let me know if you have any questions or need more information.

Thank you,
Jason Henry
575-441-1099






JALMAT
22B
Curtis
&

Curtis & Curtis Seed
4500 N. Prince
Clovis, NM 88101
Phone: 505-762-4759

Basin Environmental
Jalmat 22 B (Deeded) SRS# 2000-10616
3.5 Acre Custom Mix
3-1 Acre bags @ 20.42 Bulk Pounds
1-1/2 Acre Bag @ 10.20 Bulk Pounds

Lot#: M-7430

Item	Origin	Purity	Germ	Dormant	Germ & Dormant	Test Date	Total PLS Pounds
Plains Bristlegrass Not Stated	Texas	11.95%	20.50%	61.50%	82.00%	11/06	7.00
Blue Grama Lovington	Colorado	21.77%	90.00%	00.00%	90.00%	02/07	14.00
Sideoats Grama Vaughn	Texas	34.99%	78.00%	06.00%	84.00%	02/07	21.00
Sand Dropseed Not Stated	New Mexico	10.00%	79.00%	19.00%	98.00%	02/07	7.00

Other Crop: 00.07%
Weed Seed: 00.10%
Inert Matter: 21.12%

There Are 4 Bags For This Mix
This Bags Weighs 20.42 Bulk Pounds
Use This Bag For 1 Acre

Total Bulk Pounds: 71.45