

AP - 54

ANNUAL MONITORING REPORT

YEAR(S):
2011



2011 FIELD ACTIVITY REPORT MONITOR WELL INSTALLATION

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**HOBBS JUNCTION MAINLINE
LEA COUNTY, NEW MEXICO
SRS #2003 - 00017
NMOCD REF. # AP-054**

Prepared for:

**PLAINS PIPELINE, L.P.
333 CLAY STREET, SUITE 1600
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Prepared by:

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2901 S. State Highway 349
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February, 2012

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**2011 FIELD ACTIVITY REPORT
MONITOR WELL INSTALLATION**

**HOBBS JUNCTION MAINLINE
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SRS #2003 - 00017
NMOCD REF. # AP-054**

**PLAINS PIPELINE, L.P.
333 CLAY STREET, SUITE 1600
HOUSTON, TEXAS**

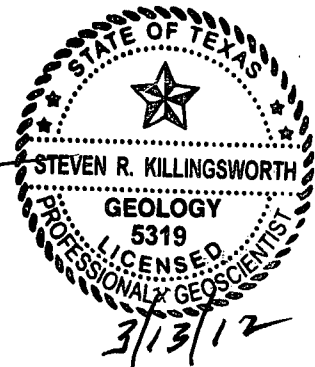
TALON/LPE PROJECT NO. 700376.052.01

Prepared by:

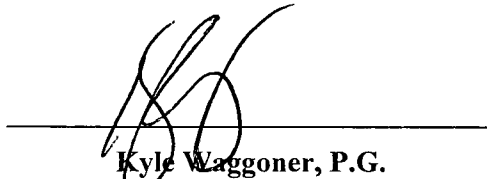


Steven R. Killingsworth, P.G.

Senior Project Manager



Reviewed by:



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**TALON/LPE
2901 S. State Highway 349
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February, 2012

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NMOCD - New Mexico Oil Conservation Division

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1.0 INTRODUCTION AND OBJECTIVES

1.1 Objectives and Site Background

The Hobbs Junction Mainline (site) is located approximately three (3) miles west of Hobbs in Lea County, New Mexico, on property owned by the State of New Mexico and by Mrs. Faye Klein. The Klein residence is located approximately 1,100 feet to the southwest of the site and a groundwater supply well (Klein irrigation well) is located approximately 700 feet to the west of the site. The City of Eunice public water supply wells are located to the east of the site. The GPS coordinates of the Hobbs Junction Mainline site are 32° 42' 40.85" latitude and 103° 13' 42.01" longitude.

The initial release occurred from an EOTT Energy (EOTT) 10-inch steel pipeline on January 23, 2003. Subsequently, EOTT changed its name to Link Energy in October 2003, and Plains Marketing, L.P. (Plains) purchased the assets of Link Energy on April 1, 2004. Initial reports estimated that 50 barrels (bbls) of crude oil were released and 24 bbls were recovered during the initial response. It was estimated that approximately 12,500 square feet of surface area was affected by the release.

1.2 Regional Setting

The site is situated in a physiogeographic area that is on the extreme south-western portion of the Southern High Plains as it grades into the Edwards Plateau to the south and southeast and the Chihuahuan Desert of the Trans-Pecos Region to the southwest.

The topography proximal to the site is typical of the Southern High Plains, which is essentially flat with shallow depressions, or playa lakes, dotting the landscape. The prominent surface features on the Southern High Plains are the approximately 19,250 ephemeral playa lakes; however the density of the playa lakes diminishes toward the southern extent of the Southern High Plains. During periods of rainfall, the playas accumulate sheet runoff from watershed areas ranging in size from less than one square mile to several square miles. Only a small portion of drainage from rainfall occurs by streams. Playa lakes that collect storm water runoff can act as a recharge mechanism for groundwater.

The average elevation of the site area is approximately 3,680 feet above mean sea level with a slight slope to the southeast. The regional slope of the land surface in the Southern High Plains is approximately 100 feet per mile in a southeasterly direction.

On February 5, 2007, Talon/LPE (Talon) was retained by Plains to assume remediation activities at the site. Remediation activities at the site were previously conducted by Environmental Plus, Inc. (EPI).

1.3 Site Geology

The surface deposits in Lea County are composed of Blackwater Draw (Illinoian) sediments, Ogallala sediments and undivided Quaternary alluvium, which is also termed 'cover sands'. The

soil in the upper two (2) feet at the site composed of gravelly loam that consists of 43% sand, 18% clay and 40% silt and also contains abundant eroded gravel to cobble size caliche fragments. Below the top soil is predominately unconsolidated sand to weakly cemented sandstone which has undergone calcification of varying extent.

Below the Blackwater Draw Formation is the Ogallala Formation of Miocene to Pliocene age. The Ogallala Formation was deposited from sediments eroded from the Southern Rockies and consists mostly of eolian sediments, silty to very fine sand or loess. During the middle to late Miocene, the Ogallala sediments were deposited by fluvial mechanism as paleovalley fill composed of gravelly to sandy braided stream deposits that trended west to east across the Southern High Plains. During the late Miocene the west to east drainage was diverted (captured) by the Pecos River. Subsequently, the Pecos River basin has experienced deflation, which facilitated eolian deposition on the Southern High Plains during the Pliocene.

1.4 Previous Monitor Well Installations

A total of 24 monitor wells were installed in the vicinity of the release (see Figure 1). Initial delineation activities began on February 13, 2003, by advancing a soil boring BH-1 to 28 feet below ground surface (bgs) where a well indurated caliche layer prevented further progress of the hollow stem auger. On March 5, 2003, using an air rotary rig, monitor wells MW-1 and MW-2 were installed to groundwater in order to evaluate the presence of phase separated hydrocarbons (PSH). Monitor wells MW-1 and MW-2 were impacted with PSH; therefore, monitor wells MW-3 through MW-6 were installed in August 2003. After developing monitor wells MW-3 through MW-6, PSH was also detected in those wells. On January 19 and 20, 2004, monitor wells MW-7 through MW-13 were installed in order to delineate the dissolved-phase plume. Subsequent to development, PSH was detected in monitor well MW-12. Monitor wells MW-14 through MW-17 were installed on May 24, 2004, outside the release perimeter. PSH was detected in monitor wells MW-14 and MW-17. Monitor wells MW-18 through MW-20 were installed in November 2006, and monitor wells MW-21 and MW-22 were installed on December 5, 2007, to further delineate the dissolved phase plume. Monitor wells MW-23 and MW-24 were installed on March 17, 2008 as requested by the New Mexico Oil Conservation Division (NMOCD), in order to further delineate the dissolved phase plume towards the southeast.

1.5 Physical Characteristics of the Water-Bearing Zone

The primary groundwater resource under the Southern High Plains, including the subject site, is referred to as the Ogallala Aquifer or High Plains Aquifer. The Southern portion of the Ogallala aquifer underlies an area of about 29,000 square miles (mi²) in western Texas and eastern New Mexico, encompassing all or part of 31 counties in Texas and six (6) counties in New Mexico.

The Ogallala Aquifer has experienced acute depletion from extensive irrigation and urban demand, which have exceeded the average annual recharge rate. Recharge of the Ogallala Aquifer on the Southern High Plains occurs predominately from rainfall runoff that accumulates in ephemeral streams and playa lakes as well as direct recharge in areas that contain permeable soils such as sand hills. Recharge rates vary depending on mechanism, but averages from 0 to 1.6 inches per year.

The Ogallala Aquifer is generally unconfined and the potentiometric surface generally mirrors the land surface elevation with the regional flow direction from the northwest to the southeast. The mean regional gradient is 15 feet per mile and the typical groundwater velocity averages seven (7) inches per day. The regional hydraulic conductivity averages 17 gallons per day per square-foot and specific yield averages 16%. The depth to groundwater at the site has historically ranged from 35 to 40 feet below ground surface (bgs) and the groundwater flow direction is to the southeast at an average of 25 feet per mile. The saturated thickness of the Ogallala formation in the Lea County area ranges from 50 feet to 100 feet. The variable thickness of the saturated zone is due to the irregularly eroded Triassic surface that underlies the Ogallala. Groundwater levels at the site have declined over two (2) feet since groundwater measurements were first obtained in 2003.

The composition of Ogallala groundwater is defined as mixed-cation- HCO_3 , therefore, Ogallala groundwater is considered hard. Problems with scale have occurred with residential and commercial water systems that use Ogallala groundwater and often treatment strategies are employed to reduce the effects of scale. The typical total dissolved solids of Ogallala groundwater in the Hobbs-Lovington area is generally less than 500 mg/L (ppm) in areas not impacted by oil-field brines. The pH of Ogallala water in the Lea County area averages 7.3.

2.0 SITE ACTIVITIES

The sections that follow summarize the installation details for the three (3) additional monitor wells at the site (MW-25, MW-26, and MW-27).

2.1 Monitor Well Installation

Monitor well installation was performed by Talon Drilling Co. under the supervision of Talon Geologist, Steven R. Killingsworth, P.G. Talon drilling and supervisory staff personnel are safety trained in accordance with 29 CFR-1910.120. The three (3) replacement monitor wells (MW-25, MW-26, and MW-27) were drilled using a truck mounted rotary drilling rig.

Each monitor well was constructed using four (4) inch, schedule 40 PVC casing from surface to TD including 30 feet of 0.010 slotted casing into the saturated section. A filter pack consisting of 8/16 graded silica sand was installed in the annulus between the casing and the formation from TD to approximately two (2) feet above the top of well screen. The annulus was then filled from the top of the filter pack to approximately two (2) feet bgs with bentonite chips. After the bentonite seal was hydrated, the well annulus was topped with cement to the surface. Two (2) steel well vaults in monitor wells MW-25 and MW-26 were installed to approximately three (3) feet above ground to provide access to the monitor well for gauging and sample collection. The vault for monitor well MW-27 was installed flush with the ground surface. State of New Mexico Well Records are included in Appendix D with the boring logs. The locations of the three (3) monitor wells are depicted on the site map located in Appendix A.

Monitor wells MW-25 and MW-26 were drilled on January 14, 2011 and monitor well MW-27 was drilled on January 15, 2011 using air rotary drilling methods and an 8 ½-inch bit. The borings were over drilled to 60 feet to ensure that casing could be set at the appropriate depth,

which was specified at approximately 20-ft into the saturated section. The bottom of casing was set at 55 feet in all three monitor wells. The well logs that portray the well construction details are found in Appendix D.

2.2 Soil Samples

Drill cuttings circulated to the surface were collected at appropriate intervals using a shovel and the samples were characterized in the field for physical properties in accordance with Unified Soil Classification System. The soil samples were also analyzed in the field for petroleum contaminants using a MiniRAE 2000 portable VOC monitor with a photo-ionization detector (PID) equipped with a 10.6 eV gas discharge lamp. The PID was calibrated prior to use with 100-ppm isobutylene. The results of the soil sample characterization are presented on the well boring logs in Appendix D.

Soil samples were collected for laboratory analyses from monitor wells MW-26 and MW-27 at 30-40 feet bgs. In addition, soil samples were collected for laboratory analyses at 10-15 feet bgs, 15-20 feet bgs, and 20-30 feet bgs in monitor well MW-25. The samples were packed in laboratory provided four (4) ounce soil jars with minimal head space. The soil jars were then placed on ice in a cooler and transported to Trace Analysis laboratory in Midland Texas. The samples were analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) by EPA Method 8021B and for total petroleum hydrocarbons (TPH) by EPA Method 418.1. Soil sample analytical results are summarized on Table 2 in Appendix B.

Analytical results from the samples collected at 35-40-ft from monitor wells MW-26 and MW-27 exhibited TPH and total BTEX concentrations, indicating that hydrocarbons are present in the capillary fringe between groundwater and the intermediate vadose zone at those locations. Samples collected in the intermediate vadose zone were not retained for laboratory analyses because they did not display readings from PID measurements.

Analytical results from samples collected from ten (10) to 30 feet from monitor well MW-25 exhibited TPH and total BTEX concentrations, indicating that hydrocarbons are present in the intermediate vadose zone at that location. The sample collected in the capillary zone was not retained for laboratory analyses because it did not display a reading from PID measurements.

Analytical results are summarized on Table 2 in Appendix B.

2.3 Drill Cuttings

Drill cuttings were transported from each monitor well drill location and stockpiled adjacent to the site system recovery tank compound. A composite sample of the drill cutting was collected and analyzed for BTEX by EPA Method 8021B and TPH by EPA Method 418.1. Analytical results indicate that the TPH concentration was 334 mg/Kg and the total BTEX concentration was 0.0449 mg/Kg. Disposition of the drill cuttings is pending. Analytical results are summarized on Table 2 in Appendix B.

2.4 Groundwater Gauging and Development Procedures

After installation, each newly installed monitor well was measured with an oil/water interface

probe. The newly installed monitor wells were not developed because gauging results indicated that the wells were impacted with PSH. The gauging results collected were incorporated in Table 1, Appendix B – Summary of Historical Fluid Level Measurements.

Groundwater samples will not be collected from the newly installed monitor wells because they are impacted with PSH.

3.0 RECOMMENDATIONS

3.1 Recommendations

Subsequent to new monitor well installation, Talon proposes the following actions:

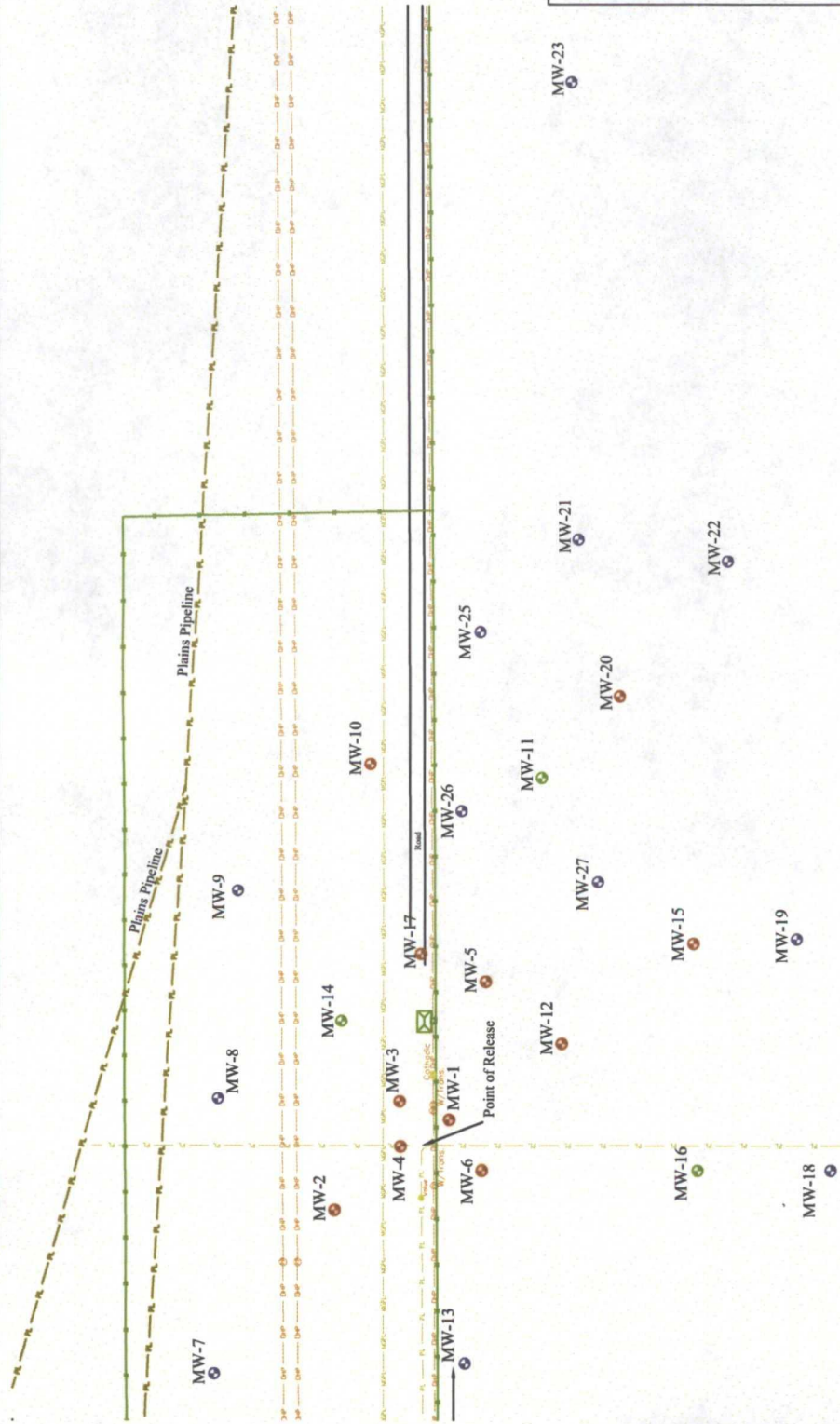
- Install pneumatic total fluids pumps in the three (3) newly installed monitor well in order to increase the drawdown capacity of the system in order to inhibit plume migration.
- Continue to monitor the PSH plume distribution and recovery volumes in order to adjust pump depths and cycles to the optimal configuration.

APPENDIX A

Figures

Figure 1 - Site Plan

Figure 2 – Topographic Map



Project # 700376.052.01



Date: 08/16/2011

Scale: 1" = 120'

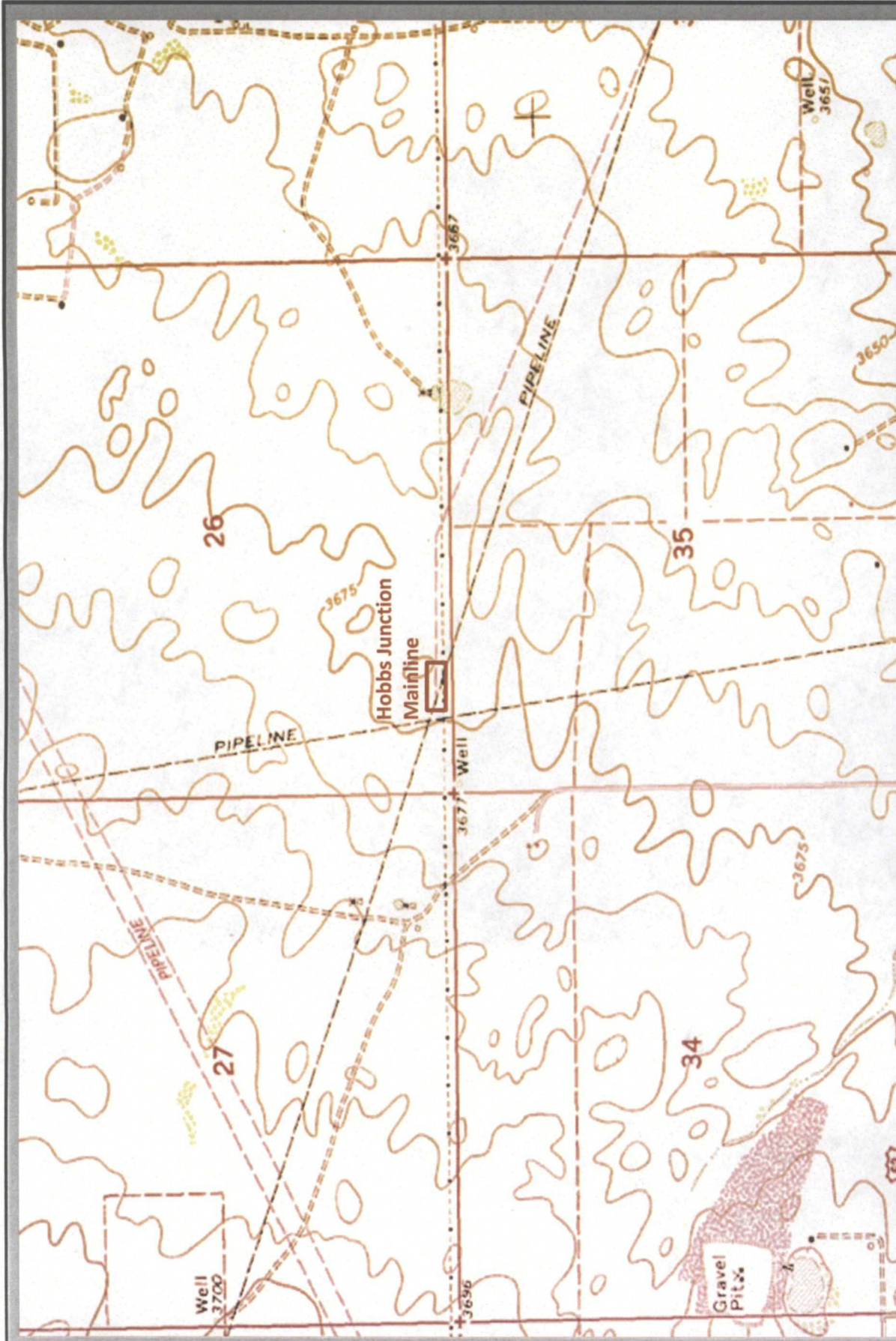
Drawn By: TJS

Hobbs Junction Mainline

SRS # 2003-00017, NMOCD REF. # AP-054

SW 1/4, SW 1/4, of Sec. 26, T18S, R37E, Lea County, New Mexico

Figure 1 - Site Map, (12/14/2011)



Topographic Map - Hobbs West, 1979
Section 26, Township 18S, Range 37E
1:24,000 - New Mexico
Date: December, 2011
Prepared by: S. R. Killingsworth, PG

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

Not to scale

APPENDIX B

Tables

Table 1 – Summary of Historical Fluid Level Measurements

Table 2 – Summary of Soil Analytical Results



TABLE 1
SUMMARY OF HISTORICAL FLUID LEVEL MEASUREMENTS
PLAINS PIPELINE, L.P.
HOBBS JUNCTION MAINLINE
NMOCD REF. # AP-054
LEA COUNTY, NEW MEXICO - SRS# 2003-00017
Talon/LPE Project Number 700376.052.01

Well	Date	Top of Casing Elevation (feet-amsl)	Depth to PSH (feet-btoc)	Depth to Water (feet-btoc)	PSH Thickness (feet)	Corrected Groundwater Elevation (feet-amsl)
		WELL INSTALLATION				
MW-25	12/14/11	WELL INSTALLATION				
	12/20/11	NM	40.20	40.20	sheen	
		WELL INSTALLATION				
MW-26	12/14/11	WELL INSTALLATION				
	12/20/11	NM	40.70	40.70	sheen	
		WELL INSTALLATION				
MW-27	12/15/11	WELL INSTALLATION				
	12/20/11	NM	38.44	38.60	0.16	
		WELL INSTALLATION				



TABLE - 1
SUMMARY OF SOIL ANALYTICAL RESULTS
PLAINS PIPELINE, L.P.
HOBBS JUNCTION MAINLINE
NMOCD REF. # AP-054
LEA COUNTY, NEW MEXICO SRS#2003-00017
TALON/LPE PROJECT NUMBER 700376.052.01

Sample ID	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	TPH
MW-25 (10-15)	12/14/2011	<0.0200	<0.0200	0.0385	0.1430	0.1815	607
MW-25 (15-20)	12/14/2011	<0.0200	0.232	2.42	10.1	12.752	2,010
MW-25 (20-30)	12/14/2011	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	119
MW-26 (35-40)	12/14/2011	<0.0200	0.142	0.773	1.87	2.785	2,030
MW-27 (35-40)	12/15/2011	<0.0200	<0.0200	0.0614	0.166	0.2274	898
SP-1	12/16/2011	<0.0200	<0.0200	<0.0200	0.0449	0.0449	334

Concentrations in milligrams per kilogram (mg/Kg)

TPH - total petroleum hydrocarbons analyzed by EPA Method 418.1

BTEX - analyzed by EPA Method 8021B

APPENDIX C

Laboratory Analytical Data Reports and Chains of Custody Documentation



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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Steve Killingsworth
Talon LPE-Midland
2901 State Highway 349
Midland, TX, 79706

Report Date: December 28, 2011

Work Order: 11121901



Project Location: Hobbs, NM
Project Name: Hobbs Junction Mainline
Project Number: 700376.052.01
SRS#: 2003-0017

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
284708	MW-25 (10-15)	soil	2011-12-14	00:00	2011-12-16
284709	MW-25 (15-20)	soil	2011-12-14	00:00	2011-12-16
284710	MW-25 (20-30)	soil	2011-12-14	00:00	2011-12-16
284711	MW-26 (35-40)	soil	2011-12-14	00:00	2011-12-16
284712	MW-27 (35-40)	soil	2011-12-15	00:00	2011-12-16
284713	Stockpile Comp.	soil	2011-12-16	10:15	2011-12-16

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 16 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Blair Leftwich

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

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Sample 284709 (MW-25 (15-20))	5
Sample 284710 (MW-25 (20-30))	6
Sample 284711 (MW-26 (35-40))	7
Sample 284712 (MW-27 (35-40))	7
Sample 284713 (Stockpile Comp.)	8
Method Blanks	10
QC Batch 87368 - Method Blank (1)	10
QC Batch 87441 - Method Blank (1)	10
Laboratory Control Spikes	11
QC Batch 87368 - LCS (1)	11
QC Batch 87441 - LCS (1)	11
QC Batch 87368 - MS (1)	12
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Case Narrative

Samples for project Hobbs Junction Mainline were received by TraceAnalysis, Inc. on 2011-12-16 and assigned to work order 11121901. Samples for work order 11121901 were received intact at a temperature of 8.1 C. Samples were received on ice.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	74188	2011-12-21 at 08:00	87368	2011-12-21 at 07:40
TPH 418.1	E 418.1	74249	2011-12-27 at 11:00	87441	2011-12-27 at 11:06

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 11121901 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: December 28, 2011
700376.052.01

Work Order: 11121901
Hobbs Junction Mainline

Page Number: 5 of 16
Hobbs, NM

Analytical Report

Sample: 284708 - MW-25 (10-15)

Laboratory: Midland
Analysis: BTEX
QC Batch: 87368
Prep Batch: 74188

Analytical Method: S 8021B
Date Analyzed: 2011-12-21
Sample Preparation: 2011-12-21

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

			RL				
Parameter		Flag	Cert	Result	Units	Dilution	RL
Benzene	u	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene			1	0.0385	mg/Kg	1	0.0200
Xylene			1	0.143	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.26	mg/Kg	1	2.00	113	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			2.19	mg/Kg	1	2.00	110	70.6 - 179

Sample: 284708 - MW-25 (10-15)

Laboratory: Lubbock
Analysis: TPH 418.1
QC Batch: 87441
Prep Batch: 74249

Analytical Method: E 418.1
Date Analyzed: 2011-12-27
Sample Preparation: 2011-12-27

Prep Method: N/A
Analyzed By: DS
Prepared By: DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
TRPHC			607	mg/Kg	1	10.0

Sample: 284709 - MW-25 (15-20)

Laboratory: Midland
Analysis: BTEX
QC Batch: 87368
Prep Batch: 74188

Analytical Method: S 8021B
Date Analyzed: 2011-12-21
Sample Preparation: 2011-12-21

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

Report Date: December 28, 2011
700376.052.01

Work Order: 11121901
Hobbs Junction Mainline

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Hobbs, NM

Parameter		Flag	Cert	RL	Units	Dilution	RL
				Result			
Benzene	u	u	1	<0.0200	mg/Kg	1	0.0200
Toluene			1	0.232	mg/Kg	1	0.0200
Ethylbenzene			1	2.42	mg/Kg	1	0.0200
Xylene			1	10.1	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.26	mg/Kg	1	2.00	113	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			3.46	mg/Kg	1	2.00	173	70.6 - 179

Sample: 284709 - MW-25 (15-20)

Laboratory: Lubbock
Analysis: TPH 418.1
QC Batch: 87441
Prep Batch: 74249

Analytical Method: E 418.1
Date Analyzed: 2011-12-27
Sample Preparation: 2011-12-27

Prep Method: N/A
Analyzed By: DS
Prepared By: DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
TRPHC			2010	mg/Kg	1	10.0

Sample: 284710 - MW-25 (20-30)

Laboratory: Midland
Analysis: BTEX
QC Batch: 87368
Prep Batch: 74188

Analytical Method: S 8021B
Date Analyzed: 2011-12-21
Sample Preparation: 2011-12-21

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

Parameter		Flag	Cert	RL	Units	Dilution	RL
				Result			
Benzene	u	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	u	1	<0.0200	mg/Kg	1	0.0200
Xylene	u	u	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.04	mg/Kg	1	2.00	102	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			1.97	mg/Kg	1	2.00	98	70.6 - 179

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Hobbs Junction Mainline

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Sample: 284710 - MW-25 (20-30)

Laboratory: Lubbock
Analysis: TPH 418.1
QC Batch: 87441
Prep Batch: 74249

Analytical Method: E 418.1
Date Analyzed: 2011-12-27
Sample Preparation: 2011-12-27

Prep Method: N/A
Analyzed By: DS
Prepared By: DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
TRPHC			119	mg/Kg	1	10.0

Sample: 284711 - MW-26 (35-40)

Laboratory: Midland
Analysis: BTEX
QC Batch: 87368
Prep Batch: 74188

Analytical Method: S 8021B
Date Analyzed: 2011-12-21
Sample Preparation: 2011-12-21

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	u	<0.0200	mg/Kg	1	0.0200
Toluene			0.142	mg/Kg	1	0.0200
Ethylbenzene			0.773	mg/Kg	1	0.0200
Xylene			1.87	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.23	mg/Kg	1	2.00	112	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			2.69	mg/Kg	1	2.00	134	70.6 - 179

Sample: 284711 - MW-26 (35-40)

Laboratory: Lubbock
Analysis: TPH 418.1
QC Batch: 87441
Prep Batch: 74249

Analytical Method: E 418.1
Date Analyzed: 2011-12-27
Sample Preparation: 2011-12-27

Prep Method: N/A
Analyzed By: DS
Prepared By: DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
TRPHC			2030	mg/Kg	1	10.0

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Hobbs Junction Mainline

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Sample: 284712 - MW-27 (35-40)

Laboratory: Midland

Analysis: BTEX

QC Batch: 87368

Prep Batch: 74188

Analytical Method: S 8021B

Date Analyzed: 2011-12-21

Sample Preparation: 2011-12-21

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

Parameter	Flag	Cert	RL		Units	Dilution	RL
			Result				
Benzene	u	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene			1	0.0614	mg/Kg	1	0.0200
Xylene			1	0.166	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.15	mg/Kg	1	2.00	108	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			2.20	mg/Kg	1	2.00	110	70.6 - 179

Sample: 284712 - MW-27 (35-40)

Laboratory: Lubbock

Analysis: TPH 418.1

QC Batch: 87441

Prep Batch: 74249

Analytical Method: E 418.1

Date Analyzed: 2011-12-27

Sample Preparation: 2011-12-27

Prep Method: N/A

Analyzed By: DS

Prepared By: DS

Parameter	Flag	Cert	RL		Units	Dilution	RL
			Result				
TRPHC				898	mg/Kg	1	10.0

Sample: 284713 - Stockpile Comp.

Laboratory: Midland

Analysis: BTEX

QC Batch: 87368

Prep Batch: 74188

Analytical Method: S 8021B

Date Analyzed: 2011-12-21

Sample Preparation: 2011-12-21

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

Parameter	Flag	Cert	RL		Units	Dilution	RL
			Result				
Benzene	u	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	u	1	<0.0200	mg/Kg	1	0.0200
Xylene			1	0.0449	mg/Kg	1	0.0200

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.27	mg/Kg	1	2.00	114	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			2.35	mg/Kg	1	2.00	118	70.6 - 179

Sample: 284713 - Stockpile Comp.

Laboratory: Lubbock
Analysis: TPH 418.1
QC Batch: 87441
Prep Batch: 74249

Analytical Method: E 418.1
Date Analyzed: 2011-12-27
Sample Preparation: 2011-12-27

Prep Method: N/A
Analyzed By: DS
Prepared By: DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
TRPHC			334	mg/Kg	1	10.0

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Method Blanks

Method Blank (1) QC Batch: 87368

QC Batch: 87368
Prep Batch: 74188

Date Analyzed: 2011-12-21
QC Preparation: 2011-12-21

Analyzed By: AG
Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.0118	mg/Kg	0.02
Toluene		1	<0.00600	mg/Kg	0.02
Ethylbenzene		1	<0.00850	mg/Kg	0.02
Xylene		1	<0.00613	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	65.9 - 111.8
4-Bromofluorobenzene (4-BFB)			1.35	mg/Kg	1	2.00	68	48.4 - 123.1

Method Blank (1) QC Batch: 87441

QC Batch: 87441
Prep Batch: 74249

Date Analyzed: 2011-12-27
QC Preparation: 2011-12-27

Analyzed By: DS
Prepared By: DS

Parameter	Flag	Cert	MDL Result	Units	RL
TRPHC			<4.79	mg/Kg	10

Report Date: December 28, 2011
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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 87368
Prep Batch: 74188

Date Analyzed: 2011-12-21
QC Preparation: 2011-12-21

Analyzed By: AG
Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.15	mg/Kg	1	2.00	<0.0118	108	77.4 - 121.7
Toluene		1	2.06	mg/Kg	1	2.00	<0.00600	103	88.6 - 121.6
Ethylbenzene		1	1.98	mg/Kg	1	2.00	<0.00850	99	74.3 - 117.9
Xylene		1	5.88	mg/Kg	1	6.00	<0.00613	98	73.4 - 118.8

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.14	mg/Kg	1	2.00	<0.0118	107	77.4 - 121.7	0	20
Toluene		1	2.09	mg/Kg	1	2.00	<0.00600	104	88.6 - 121.6	1	20
Ethylbenzene		1	1.99	mg/Kg	1	2.00	<0.00850	100	74.3 - 117.9	0	20
Xylene		1	5.93	mg/Kg	1	6.00	<0.00613	99	73.4 - 118.8	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.03	1.96	mg/Kg	1	2.00	102	98	65.5 - 116.7
4-Bromofluorobenzene (4-BFB)	1.83	1.81	mg/Kg	1	2.00	92	90	56.2 - 132.1

Laboratory Control Spike (LCS-1)

QC Batch: 87441
Prep Batch: 74249

Date Analyzed: 2011-12-27
QC Preparation: 2011-12-27

Analyzed By: DS
Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
TRPHC			273	mg/Kg	1	250	<4.79	109	84.3 - 122

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

continued ...

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control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
TRPHC			270	mg/Kg	1	250	<4.79	108	84.3 - 122	1	

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

Matrix Spike (MS-1) Spiked Sample: 284420

QC Batch: 87368
Prep Batch: 74188

Date Analyzed: 2011-12-21
QC Preparation: 2011-12-21

Analyzed By: AG
Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.97	mg/Kg	1	2.00	<0.0118	98	69.4 - 123.6
Toluene		1	1.94	mg/Kg	1	2.00	<0.00600	97	75.4 - 134.3
Ethylbenzene		1	2.02	mg/Kg	1	2.00	<0.00850	101	58.8 - 133.7
Xylene		1	6.04	mg/Kg	1	6.00	<0.00613	101	57 - 134.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.07	mg/Kg	1	2.00	<0.0118	104	69.4 - 123.6	5	20
Toluene		1	2.13	mg/Kg	1	2.00	<0.00600	106	75.4 - 134.3	9	20
Ethylbenzene		1	2.15	mg/Kg	1	2.00	<0.00850	108	58.8 - 133.7	6	20
Xylene		1	6.45	mg/Kg	1	6.00	<0.00613	108	57 - 134.2	7	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.17	2.07	mg/Kg	1	2	108	104	79.4 - 141.1
4-Bromofluorobenzene (4-BFB)	2.23	2.13	mg/Kg	1	2	112	106	71 - 167

Matrix Spike (MS-1) Spiked Sample: 285115

QC Batch: 87441
Prep Batch: 74249

Date Analyzed: 2011-12-27
QC Preparation: 2011-12-27

Analyzed By: DS
Prepared By: DS

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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
TRPHC			503	mg/Kg	1	250	279	90	43 - 161

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
TRPHC			493	mg/Kg	1	250	279	86	43 - 161	2	

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

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Calibration Standards

Standard (CCV-1)

QC Batch: 87368

Date Analyzed: 2011-12-21

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.103	103	80 - 120	2011-12-21
Toluene		1	mg/Kg	0.100	0.0982	98	80 - 120	2011-12-21
Ethylbenzene		1	mg/Kg	0.100	0.0932	93	80 - 120	2011-12-21
Xylene		1	mg/Kg	0.300	0.278	93	80 - 120	2011-12-21

Standard (CCV-2)

QC Batch: 87368

Date Analyzed: 2011-12-21

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.106	106	80 - 120	2011-12-21
Toluene		1	mg/Kg	0.100	0.103	103	80 - 120	2011-12-21
Ethylbenzene		1	mg/Kg	0.100	0.0982	98	80 - 120	2011-12-21
Xylene		1	mg/Kg	0.300	0.294	98	80 - 120	2011-12-21

Standard (CCV-3)

QC Batch: 87368

Date Analyzed: 2011-12-21

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0979	98	80 - 120	2011-12-21
Toluene		1	mg/Kg	0.100	0.0946	95	80 - 120	2011-12-21
Ethylbenzene		1	mg/Kg	0.100	0.0886	89	80 - 120	2011-12-21
Xylene		1	mg/Kg	0.300	0.265	88	80 - 120	2011-12-21

Report Date: December 28, 2011
700376.052.01

Work Order: 11121901
Hobbs Junction Mainline

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Standard (CCV-1)

QC Batch: 87441

Date Analyzed: 2011-12-27

Analyzed By: DS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC			mg/Kg	100	110	110	80 - 120	2011-12-27

Standard (CCV-2)

QC Batch: 87441

Date Analyzed: 2011-12-27

Analyzed By: DS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC			mg/Kg	100	111	111	80 - 120	2011-12-27

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-11-3	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

APPENDIX D

Boring Logs and Drilling Reports

SOIL BORING / MONITORING WELL LOG

PROJECT: Hobbs Junction Mainline
 PROJECT NUMBER: 700376.052.01
 CLIENT: Plains Pipeline, LP
 BORING / WELL NUMBER: MW-25
 TOTAL DEPTH: 55
 SURFACE ELEVATION: _____
 GEOLOGIST: Steve Killingsworth

DRILLING COMPANY: Talon LPE
 DRILLER: Gabe Perez
 DRILLING METHOD: Air Rotary
 BORE HOLE DIAMETER: 8.5"
 SCREEN: Diam. 4" Length 30' Slot Size 0.010
 CASING: Diam. 4" Length 28' Type Sched. 40 PVC
 DATE DRILLED: 12/14/11

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Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0			ND		0'-2'	0'		0
			61.1		2'-10'	2'	Top soil: sandy loam with gravel size caliche fragments, brown (7.5yr 5/6), moist Sandy caliche: white chalky, well indurated, with pink, very fine sand and wind blown loess, dry, faint petroleum odor	
12			229		10'-15'	10'	Sand with powdered caliche and gravel size caliche fragments, very pale brown (10yr 8/4), dry	12
			840		15'-20'	15'	Sand with powdered caliche and gravel size caliche fragments, very pale brown (10yr 8/4), dry	
24			119		20'-30'	20'	Sand: very fine grained to silty, wind blown loess, subround, subspherical, trace caliche fragments, light brown (7. 5yr 6/4), slightly moist	24
			5.2		30'-38'	30'	Caliche, very well indurated, hard, siliceous, drilling slow and rough	
36			1.5		38'-50'	38'	Sand: light brown (7.5yr 6/3), moist to wet, very fine to fine grained, subrounded, subspherical, poorly graded, unconsolidated	36
48			0.5		50'-60'10"	50'	Sand: as above, becoming medium grained, wet.	48
60						60'	TD borehole	60

REMARKS:

TALON
LPE

SOIL BORING / MONITORING WELL LOG

PROJECT: Hobbs Junction Mainline

DRILLING COMPANY: Talon LPE

PROJECT NUMBER: 700376.052.01

DRILLER: Gabe Perez

CLIENT: Plains Pipeline, LP

DRILLING METHOD: Air Rotary

BORING / WELL NUMBER: MW-28

BORE HOLE DIAMETER: 8.5"

TOTAL DEPTH: 65

SCREEN: Diam. 4" Length 30' Slot Size 0.010

SURFACE ELEVATION:

CASING: Diam. 4" Length 28' Type Sched. 40 PVC

GEOLOGIST: Steve Killingsworth

DATE DRILLED: 12/14/11

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Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0			ND		0'-2'	0'	Top soil: sandy loam with gravel size caliche fragments, brown (7.5yr 5/6), moist	0
			ND		2'-10'	2'	Sandy caliche: white chalky, well indurated, with pink, very fine sand and wind blown loess, dry, faint petroleum odor	
12			ND		10'-20'	10'	Sand with powdered caliche and gravel size caliche fragments, very pale brown (10yr 8/4), dry	12
24			0.8		20'-30'	20'	Sand: very fine grained to silty, wind blown loess, subround, subspherical, trace caliche fragments, light brown (7.5yr 6/4), slightly moist	24
36			475		30'-38'	30'	Caliche, very well indurated, hard, siliceous, drilling slow and rough	36
48			50.9		40'-52'	40'	Sand: light brown (7.5yr 6/3), moist to wet, very fine to fine grained, subrounded, subspherical, poorly graded, unconsolidated	48
60			NS		50'-60'10"	50'	Not sampled	
						60'	TD borehole	60

REMARKS:

TALON
LPE

SOIL BORING / MONITORING WELL LOG

PROJECT: Hobbs Junction Mainline

DRILLING COMPANY: Talon LPE

PROJECT NUMBER: 700376.052.01

DRILLER: Gabe Perez

CLIENT: Plains Pipeline, LP

DRILLING METHOD: Air Rotary

BORING / WELL NUMBER: MW-27

BORE HOLE DIAMETER: 8.6"

TOTAL DEPTH: 65

SCREEN: Diam. 4" Length 30' Slot Size 0.010

SURFACE ELEVATION: _____

CASING: Diam. 4" Length 28' Type Sched. 40 PVC

GEOLOGIST: Steve Killingsworth

DATE DRILLED: 12/15/11

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Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0			ND		0'-2'	0'	Top soil: sandy loam with gravel size caliche fragments, brown (7.5yr 5/6), moist	0
			ND		2'-10'	2'	Sandy caliche: white chalky, well indurated, with pink, very fine sand and wind blown loess, dry, faint petroleum odor	
12			0.2		10'-20'	10'	Sand with powdered caliche and gravel size caliche fragments, very pale brown (10yr 8/4), dry	12
24			4.1		20'-30'	20'	Sand: very fine grained to silty, wind blown loess, subround, subspherical, trace caliche fragments, light brown (7.5yr 6/4), slightly moist	24
36			489		30'-38'	30'	Caliche, very well indurated, hard, siliceous, drilling slow and rough	36
48			158		40'-52'	40'	Sand: light brown (7.5yr 6/3), moist to wet, very fine to fine grained, subrounded, subspherical, poorly graded, unconsolidated	48
60			47.8		50'-60'10"	50'	Sand: fine to medium grained, moderately well graded, subangular, subspherical, wet, brown (7.5yr 5/4)	60
						60'	TD borehole	

REMARKS:



KEY TO SYMBOLS

Symbol Description

Strata symbols



Clayey sand and gravel



Well graded gravel
and sand



Limestone with thin sand beds.



Poorly graded sand
with silt



Caliche



Poorly graded sand

Misc. Symbols



Water table at
boring completion

Soil Samplers



Bulk/Grab sample

Monitor Well Details



Capped riser with locking
cover



Protective casing
set in concrete



Bentonite pellets



Silica sand, blank PVC



Slotted pipe w/ sand



No pipe, filler material



End of well
Installation



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION	POD NUMBER (WELL NUMBER) Monitor Well MW-25				OSE FILE NUMBER(S)			
	WELL OWNER NAME(S) Plains Pipeline, LP				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 333 Clay St. - Suite 1600				CITY Houston		STATE TX	
	WELL LOCATION (FROM GPS)		DEGREES 32	MINUTES 42	SECONDS 40.50 N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84		
		LONGITUDE 103		13	37.50 W			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS								
2. OPTIONAL	(2.5 ACRE) 1/4	(10 ACRE) 1/4	(40 ACRE) SW 1/4	(160 ACRE) SW 1/4	SECTION 26	TOWNSHIP 18 <input type="checkbox"/> NORTH <input checked="" type="checkbox"/> SOUTH	RANGE 37 <input checked="" type="checkbox"/> EAST <input type="checkbox"/> WEST	
	SUBDIVISION NAME N/A				LOT NUMBER	BLOCK NUMBER	UNIT/TRACT	
	HYDROGRAPHIC SURVEY				MAP NUMBER		TRACT NUMBER	
3. DRILLING INFORMATION	LICENSE NUMBER W01567		NAME OF LICENSED DRILLER Shane Currie			NAME OF WELL DRILLING COMPANY Talon LPE		
	DRILLING STARTED 12/14/11		DRILLING ENDED 12/14/11		DEPTH OF COMPLETED WELL (FT) 55	BORE HOLE DEPTH (FT) 60	DEPTH WATER FIRST ENCOUNTERED (FT) 38	
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input checked="" type="checkbox"/> SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT) 38		
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD <input type="checkbox"/> ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input type="checkbox"/> OTHER - SPECIFY:							
	DEPTH (FT)		BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
	FROM	TO						
	25		55	8.5	Sched. 40 PVC	thread		0.010
	0		25	8.5	Sched. 40 PVC	thread		
4. WATER BEARING STRATA	DEPTH (FT)		THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)			YIELD (GPM)	
	FROM	TO						
	38		60	22	fine to medium grained sand			NM
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA						TOTAL ESTIMATED WELL YIELD (GPM)		

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WELL RECORD & LOG (Version 6/9/08)

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5. SEAL AND PUMP	TYPE OF PUMP: <input type="checkbox"/> SUBMERSIBLE <input type="checkbox"/> JET <input checked="" type="checkbox"/> NO PUMP – WELL NOT EQUIPPED <input type="checkbox"/> TURBINE <input type="checkbox"/> CYLINDER <input type="checkbox"/> OTHER – SPECIFY:						
	ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT)		BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
		FROM	TO				
		0	2				
		23	55				
6. GEOLOGIC LOG OF WELL	DEPTH (FT)		THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?		
	FROM	TO					
	0	2	2	sandy loam with caliche fragments (7.5yr 7/6)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
	2	30	28	sandy caliche and hard well indurated caliche (10yr 8/4)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
	30	38	8	very fine to fine grained sand (7.5yr 6/4)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
	38	60	22	fine to medium grained sand (7.5yr 6/3)	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
	ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL						
	7. TEST & ADDITIONAL INFO	WELL TEST		METHOD: <input type="checkbox"/> BAILER <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input checked="" type="checkbox"/> OTHER – SPECIFY: Not tested			
TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.							
ADDITIONAL STATEMENTS OR EXPLANATIONS:							
8. SIGNATURE	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING: <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;"> _____ SIGNATURE OF DRILLER </div> <div style="text-align: center;"> _____ DATE </div> </div>						

FOR OSE INTERNAL USE

WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER

POD NUMBER

TRN NUMBER



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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1. GENERAL AND WELL LOCATION	POD NUMBER (WELL NUMBER) Monitor Well MW-27				OSE FILE NUMBER(S)				
	WELL OWNER NAME(S) Plains Pipeline, LP				PHONE (OPTIONAL)				
	WELL OWNER MAILING ADDRESS 333 Clay St. - Suite 1600				CITY Houston		STATE TX		
	WELL LOCATION (FROM GPS)		DEGREES LATITUDE 32	MINUTES 42	SECONDS 39.20 N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND			
			LONGITUDE 103	13	39.24 W	* DATUM REQUIRED: WGS 84			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS									
2. OPTIONAL	(2.5 ACRE) 1/4	(10 ACRE) 1/4	(40 ACRE) SW 1/4	(160 ACRE) SW 1/4	SECTION 26	TOWNSHIP 18	<input type="checkbox"/> NORTH <input checked="" type="checkbox"/> SOUTH	RANGE 37	<input checked="" type="checkbox"/> EAST <input type="checkbox"/> WEST
	SUBDIVISION NAME N/A				LOT NUMBER	BLOCK NUMBER	UNIT/TRACT		
	HYDROGRAPHIC SURVEY					MAP NUMBER	TRACT NUMBER		
3. DRILLING INFORMATION	LICENSE NUMBER WD-1567		NAME OF LICENSED DRILLER Shane Currie			NAME OF WELL DRILLING COMPANY Talon LPE			
	DRILLING STARTED 12/15/11		DRILLING ENDED 12/15/11		DEPTH OF COMPLETED WELL (FT) 55		BORE HOLE DEPTH (FT) 60		
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input checked="" type="checkbox"/> SHALLOW (UNCONFINED)					DEPTH WATER FIRST ENCOUNTERED (FT) 38			
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD <input type="checkbox"/> ADDITIVES - SPECIFY:					STATIC WATER LEVEL IN COMPLETED WELL (FT) 38			
	DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input type="checkbox"/> OTHER - SPECIFY:								
	DEPTH (FT)		BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)	
	FROM	TO							
	25		55	Sched. 40 PVC	thread			0.010	
	+3		25	Sched. 40 PVC	thread				
4. WATER BEARING STRATA	DEPTH (FT)		THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)			YIELD (GPM)		
	FROM	TO							
	38		60	22	fine to medium grained sand			NM	
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA						TOTAL ESTIMATED WELL YIELD (GPM)			

FOR OSE INTERNAL USE

WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 1 OF 2

5. SEAL AND PUMP	TYPE OF PUMP: <input type="checkbox"/> SUBMERSIBLE <input type="checkbox"/> JET <input checked="" type="checkbox"/> NO PUMP - WELL NOT EQUIPPED <input type="checkbox"/> TURBINE <input type="checkbox"/> CYLINDER <input type="checkbox"/> OTHER - SPECIFY:						
	ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT)		BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
		FROM	TO				
		0	2				
		23	55				
		8.5	concrete				
		8.5	bentonite chips				
		8.5	8/16 filter sand				

6. GEOLOGIC LOG OF WELL	DEPTH (FT)		THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?	
	FROM	TO				
	0	2	2	sandy loam with caliche fragments (7.5yr 7/6)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	2	30	28	sandy caliche and hard well indurated caliche (10yr 8/4)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	30	38	8	very fine to fine grained sand (7.5yr 6/4)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	38	60	22	fine to medium grained sand (7.5yr 6/3)	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
					<input type="checkbox"/> YES	<input type="checkbox"/> NO
	ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL					

7. TEST & ADDITIONAL INFO	WELL TEST	METHOD: <input type="checkbox"/> BAILER <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input checked="" type="checkbox"/> OTHER - SPECIFY: Not tested	
	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.		
	ADDITIONAL STATEMENTS OR EXPLANATIONS:		

8. SIGNATURE	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:	
	 SIGNATURE OF DRILLER	_____ DATE



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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1. GENERAL AND WELL LOCATION	POD NUMBER (WELL NUMBER) Monitor Well MW-26					OSE FILE NUMBER(S)				
	WELL OWNER NAME(S) Plains Pipeline, LP					PHONE (OPTIONAL)				
	WELL OWNER MAILING ADDRESS 333 Clay St. - Suite 1600					CITY STATE ZIP Houston TX				
	WELL LOCATION (FROM GPS)	DEGREES 32	MINUTES 42	SECONDS 40.38 N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84					
	LONGITUDE 103 13 39.00 W									
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS										
2. OPTIONAL	(2.5 ACRE) 1/4	(10 ACRE) 1/4	(40 ACRE) SW 1/4	(160 ACRE) SW 1/4	SECTION 26	TOWNSHIP 18	<input type="checkbox"/> NORTH <input checked="" type="checkbox"/> SOUTH		RANGE 37	<input checked="" type="checkbox"/> EAST <input type="checkbox"/> WEST
	SUBDIVISION NAME N/A					LOT NUMBER	BLOCK NUMBER	UNIT/TRACT		
	HYDROGRAPHIC SURVEY					MAP NUMBER		TRACT NUMBER		
3. DRILLING INFORMATION	LICENSE NUMBER IND-1567		NAME OF LICENSED DRILLER Shane Currie			NAME OF WELL DRILLING COMPANY Talon LPE				
	DRILLING STARTED 12/14/11		DRILLING ENDED 12/14/11		DEPTH OF COMPLETED WELL (FT) 55	BORE HOLE DEPTH (FT) 60	DEPTH WATER FIRST ENCOUNTERED (FT) 38			
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input checked="" type="checkbox"/> SHALLOW (UNCONFINED)						STATIC WATER LEVEL IN COMPLETED WELL (FT) 38			
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD <input type="checkbox"/> ADDITIVES - SPECIFY:									
	DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input type="checkbox"/> OTHER - SPECIFY:									
	DEPTH (FT)		BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)		
	FROM	TO								
	25 55		8.5	Sched. 40 PVC	thread				0.010	
	0 25		8.5	Sched. 40 PVC	thread					
4. WATER BEARING STRATA	DEPTH (FT)		THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)					YIELD (GPM)	
	FROM	TO								
	38 60		22	fine to medium grained sand					NM	
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA						TOTAL ESTIMATED WELL YIELD (GPM)				

FOR OSE INTERNAL USE

WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER

POD NUMBER

TRN NUMBER

LOCATION

PAGE 1 OF 2

5. SEAL AND PUMP	TYPE OF PUMP: <input type="checkbox"/> SUBMERSIBLE <input type="checkbox"/> JET <input checked="" type="checkbox"/> NO PUMP - WELL NOT EQUIPPED <input type="checkbox"/> TURBINE <input type="checkbox"/> CYLINDER <input type="checkbox"/> OTHER - SPECIFY:						
	ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT)		BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
		FROM	TO				
		0	2				
		23	55				
		8.5	concrete				
		8.5	bentonite chips				
		8.5	8/16 filter sand				

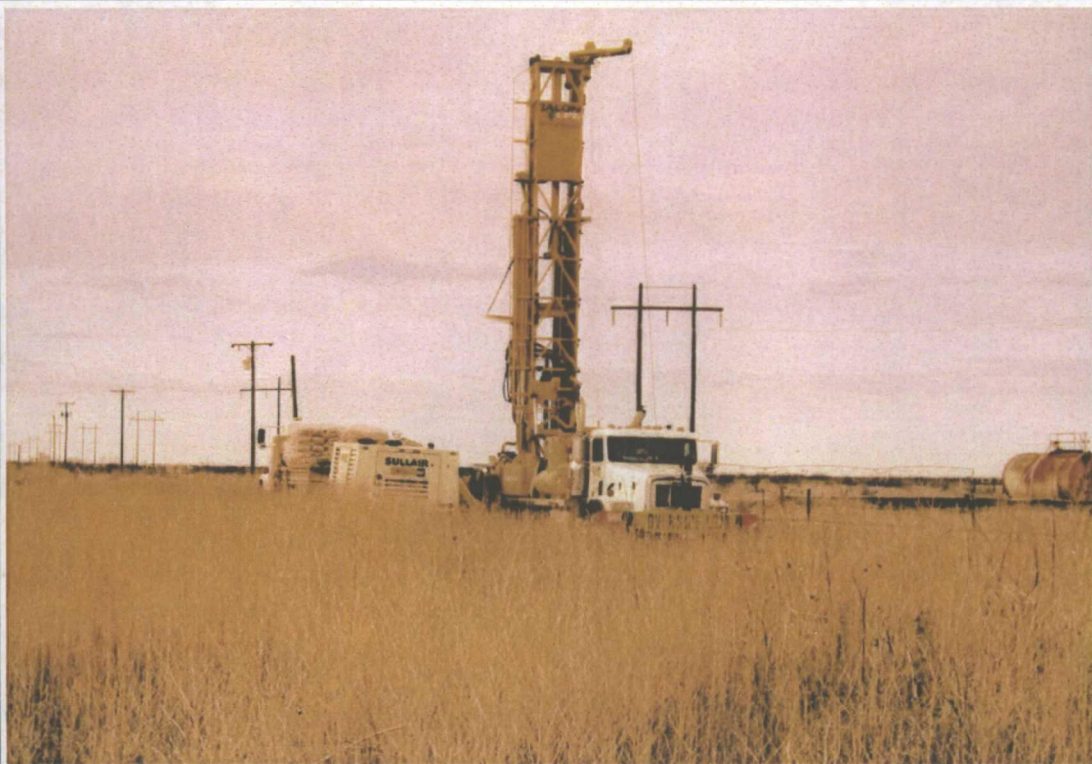
6. GEOLOGIC LOG OF WELL	DEPTH (FT)		THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?		
	FROM	TO					
	0	2	2	sandy loam with caliche fragments (7.5yr 7/6)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
	2	30	28	sandy caliche and hard well indurated caliche (10yr 8/4)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
	30	38	8	very fine to fine grained sand (7.5yr 6/4)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
	38	60	22	fine to medium grained sand (7.5yr 6/3)	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
	ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL						

7. TEST & ADDITIONAL INFO.	WELL TEST	METHOD: <input type="checkbox"/> BAILER <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input checked="" type="checkbox"/> OTHER - SPECIFY: Not tested				
		TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.				
	ADDITIONAL STATEMENTS OR EXPLANATIONS:					

8. SIGNATURE	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:	
	 _____ SIGNATURE OF DRILLER	_____ DATE

APPENDIX E

Photographic Documentation



View toward the west, drilling MW-26



Project: Hobbs Junction Mainline - MW installation
Location: Lea County, New Mexico
Date: December 14, 2011



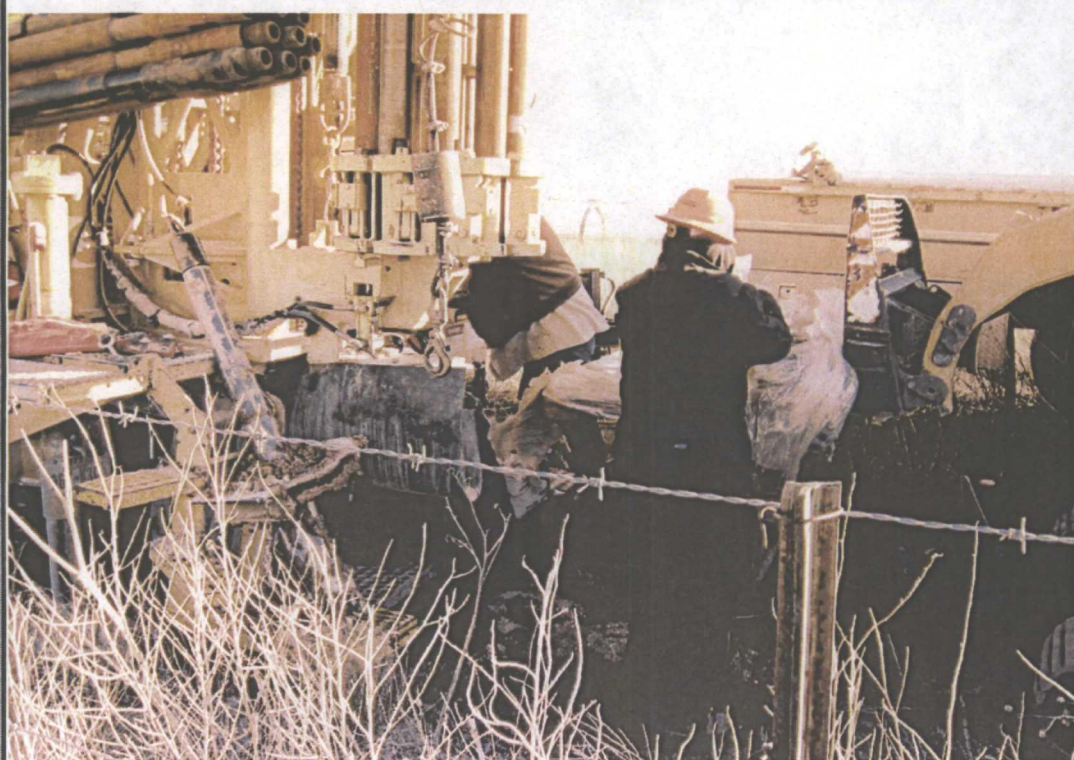
Air returns with cuttings while drilling



View toward the west, preparing to drill MW-25



Project: Hobbs Junction Mainline - MW installation
 Location: Lea County, New Mexico
 Date: December 14, 2011



Installing filter pack on MW-25



View toward the southeast, rigging up on MW-27



Project: Hobbs Junction Mainline - MW installation
 Location: Lea County, New Mexico
 Date: December 15, 2011



View toward the east of completed MW-25 & MW-26



Rigging down on MW-27



View toward the north of the Hobbs Junction Mainline site



Project: Hobbs Junction Mainline - MW installation
 Location: Lea County, New Mexico
 Date: December 15, 2011