1R - 2166

REPORTS

DATE:

10-5-11

IR-2166

AMARILLO
921 North Bivins
Amarillo, Texas 79107
Phone 806.467.0607
Fax 806.467.0622

AUSTIN
3003 Tom Gary Cove
Building C-100
Round Rock, Texas 78664
Phone 512.989.3428
Fax 512.989.3487

MIDLAND
2901 State Highway 349
Midland, Texas 79706
Phone 432.522.2133
Fax 432.522.2180

SAN ANTONIO
17170 Jordan Road
Suite 102
Selma, Texas 78154
Phone 210.579.0235
Fax 210.568.2191

TULSA
9906 East 43rd Street
Suite G
Tulsa, Oklahoma 74146
Phone 918.742.0871
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HOBBS
318 East Taylor Street
Hobbs, New Mexico 88241
Phone 505.393.4261
Fax 505.393.4658

TYLER
719 West Front Street
Suite 255
Tyler, Texas 75702
Phone 903.531.9971
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HOUSTON
3233 West 11th Street
Suite 400
Houston, Texas 77008
Phone 713.861.0081
Fax 713.868.3208

ENVIRONMENTAL CONSULTING
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Toll Free: 866.742.0742
www.talonlpe.com

MOBILE DUAL PHASE EXTRACTION REPORT
DCP PLANT TO LEA STATION 6 INCH SEC. 31 PIPELINE RELEASE
MONUMENT, LEA COUNTY, NEW MEXICO
SRS # 2009-084
TALON/LPE PROJECT # 700376.085.02

PREPARED FOR:

PLAINS MARKETING, L.P.
333 CLAY STREET
SUITE 1600
HOUSTON, TEXAS 77002

PREPARED BY:

TALON/LPE
921 N. BIVINS
AMARILLO, TEXAS 79107

DISTRIBUTION:

COPY 1 - PLAINS MARKETING, L.P. – DENVER CITY
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COPY 3 – NMOCD – SANTA FE
COPY 4 – BASIN ENVIRONMENTAL
COPY 5 - TALON/LPE

October 5, 2011

PLAINS
PIPELINE, L.P.

RECEIVED OCD
2011 DEC -6 A 10:43

December 2, 2011

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

RE: Plains Pipeline, L.P.
Reports for MDPE Events at Seven (7) Remediation Sites in Lea County, NM

Dear Mr. Hansen:

Plains Pipeline, L.P. is pleased to submit the attached reports which provide details regarding the Mobile Dual Phase Extraction (MDPE) events that were conducted at the following sites during September 2011:

HDO 90-23	NMOCD Reference #AP-009
SPS-11	NMOCD Reference #GW-140
Livingston Ridge to Hugh P. Sims	NMOCD Reference #1R-0398
Monument 10	NMOCD Reference #1R-0119
Monument 18	NMOCD Reference #1R-0124
DCP Plant to Lea Station 6-inch #2	NMOCD Reference #1R-2136
DCP Plant to Lea Station 6-inch Sec. 31	NMOCD Reference #1R-2166

Should you have any questions or comments, please contact me at (575) 441-1099.

Sincerely,

Jason Henry
Remediation Coordinator
Plains Pipeline, L.P.

Enclosure

TABLE OF CONTENTS

Section Page

Attachments:

I. MDPE SUMMARY REPORT AND WASTE DISPOSITION

A. MDPE Results

The following report summarizes data collected during the 12-hour High Vacuum Multi-Phase Extraction (MDPE) event conducted from September 7, 2011 to September 9, 2011 at the DCP Plant to Lea Station 6 Inch Sec. 31 Pipeline release site, located in Lea County, New Mexico. The objective of the MDPE treatment was to remove both vapor and liquid phase separated hydrocarbons (PSH) from onsite groundwater wells. Talon/LPE utilized an MDPE unit which consisted of an SVE extraction pump capable of generating vacuum up to 25" hg. Off gas vapors extracted from the extraction wells were destroyed using a propane-fired 1000-SCFM thermal oxidizer capable of processing 172.96 lbs/hr of gasoline.

A total of 12 hours (0.5 days) of PSH recovery was performed. MW-1 for 12 hours.

Prior to and immediately following the event, the groundwater wells were gauged for groundwater elevation and PSH. Depth to groundwater ranges were measured in feet below the top of casing. Refer to Attachment 1 for a summary of data collected during the MDPE event.

The volume of PSH removed during the MDPE event is shown to reflect the portions of PSH in the liquid phase and as off-gas vapor. Air removal rates were calculated from velocity measurements recorded at the influent manifold prior to entry into the MDPE unit. PSH recovery and air flow data has been detailed and is contained in Table 1. Three influent air samples were collected over the course of the event. These samples were submitted for laboratory testing in order to compare the predicted vapor concentrations (based on field-screening or calculated based on fuel consumption) to the actual vapor concentrations. All three influent samples were tested for Total-Gas Analysis (Hydrocarbon Composition) by ASTM method D 1945. Laboratory analytical results can be found in Attachment 2.

Based on a combination of field vapor screening and collected laboratory samples, a combined estimated total of **706.74 equivalent gallons of PSH (Total)** were removed during the event. The combined volume of PSH was comprised of approximately **31 gallons of PSH (liquid phase)** and approximately **675.74 gallons as off-gas vapor**.

The cumulative air flow measurements for the MDPE event were calculated using a combination of field data measurements and Preso® B+ manufacturer provided formulas. **Air flow rates extracted from the recovery wells averaged 153.68 SCFM** during the event.

A portion of the extracted air flow rates measured is attributable to compressed air, which was "injected" into the extraction wells. This "injected" air is introduced into the extraction wells for the purpose of enhancing liquid recovery rates.

B. Air Quality

Three influent air samples were collected during the event. These samples were submitted for laboratory testing in order to compare the predicted vapor concentrations (based on field-screening or calculated based on fuel consumption) to the actual vapor concentrations. The maximum concentration in air influent was recorded as 210,365 ppmv for Hydrocarbon Composition. Laboratory analytical results can be found in Attachment 2.

C. Waste Management and Disposition

A cumulative total of 524 gallons of fluid were generated during this event. The fluids were temporarily transferred to an on-site storage tank prior to being transferred to an authorized disposal facility. A copy of the waste ticket can be found in Attachment 4.

II. SYSTEM OPERATION DATA AND MASS RECOVERY CALCULATIONS

Formulae:

$$\text{Concentration (C\_mg/l)} = \frac{\text{C\_ppmv x Mol. wt. in mg(estimated) x 0.000001}}{\text{0.0821 x Temp (K)}}$$

$$\text{Recovery Rate (lbs/hr)} = \frac{\text{(C\_mg/l) x 2.2 x (Flowrate) x 60 x 28.32}}{\text{1,000,000}}$$

$$\text{Recovery (lbs)} = \text{(lbs/hr) x (hrs)}$$

$$\text{Correction Factor (CF)} = \frac{\text{FID Reading(ppmv)}}{\text{FID Reading at Time of Laboratory Analysis}}$$

$$\frac{\text{8.34 lbs}}{\text{gallon water}} \times \text{0.734 average specific gravity of light crude (estimated)} = \frac{\text{6.12 lbs light crude}}{\text{gallon}}$$

Table 1
System Operation Data and Mass Recovery Calculations

Time	Period (hours)	Influent Temp. (°f)	Vacuum (In. hg)	Vacuum (In. h20)	Differential pressure (In. h20)	Flow (SCFM)	FID Readings (ppmv)	Lab Result (ppmv)	Assigned Lab Result (ppmv)	Correction Factor (CF)	Adjusted Lab Result (ppmv)	Adjusted Lab Result (mg/L)	Recovery (lbs/hr)	Recovery in Period (lbs)	Total Recovery (lbs)
10:30	0	88	5	68.05	25	156.88	50000	-	160577.00	1.00	160577	502.40	294.63	0.00	0.00
11:30	1	86	5.5	74.85	28	164.65	50000	160577.00	160577.00	1.00	160577	504.25	310.37	310.37	310.37
15:00	1	88	5.5	74.85	18	131.77	50000	-	210365.00	1.00	210365	616.57	303.72	303.72	614.09
16:00	1	87	5.8	78.93	19	134.67	50000	-	210365.00	1.00	210365	617.70	310.98	310.98	925.06
17:00	1	89	6	81.65	20	137.35	50000	-	210365.00	1.00	210365	615.45	316.00	316.00	1241.06
18:00	1	88	6	81.65	22	144.18	50000	-	210365.00	1.00	210365	616.57	332.33	332.33	1573.39
19:00	1	82	5.5	74.85	24	153.00	50000	210365.00	210365.00	1.00	210365	623.40	356.55	356.55	1929.94
20:00	1	73	5	68.05	26	162.22	50000	-	210365.00	1.00	210365	633.94	384.43	384.43	2314.37
21:00	1	70	5	68.05	26	162.68	50000	-	210365.00	1.00	210365	637.53	387.70	387.70	2702.07
22:00	1	70	6	81.65	27	162.42	50000	-	180302.00	1.00	180302	588.13	357.09	357.09	3059.16
23:00	1	70	6	81.65	27	162.42	50000	-	180302.00	1.00	180302	588.13	357.09	357.09	3416.25
0:00	1	69	6	81.65	27	162.57	50000	180302.00	180302.00	1.00	180302	589.25	358.11	358.11	3774.36
1:00	1	66	6	81.65	27	163.04	50000	-	180302.00	1.00	180302	592.61	361.18	361.18	4135.54
Averages:		78.92	5.64	76.73	24.31	153.68	50000.00						Total	4135.54	

PSH Mass Recovered in Vapor Phase = 675.74 gallons

FID maximum Concentration = 50,000 PPM

Ex: Conversion from ppmv to mg/L (influent 1)

Measured Conc.	Molecular Wt.	Pressure	Gas Constant	Temp.	Temp.	Conc.
(C_ppmv)	(Grams)	(atm)	(atm.liter/K.mole)	(F)	(K)	(C_mg/l)
160577	78.11696937	1	0.0821	88	304.1111111	502.4042225

Inputs are the green values.
Calculated values are yellow.
Constants are purple values.
Outpus are the blue values.

Liquid-phase Hydrocarbon Recovery

(assumes gasoline product)

[] * r^2 * h = volume

Gallons removed determined at time of pick up

PSH Volume in Gallons=	31
PSH Mass in Pounds=	189.72

Total Hydrocarbon Recovery

PSH Mass Recovered in Vapor Phase =	4135.54	lbs
	675.74	gallons
PSH Mass Recovered in Liquid Phase =	189.72	lbs
	31.00	galons
TOTAL =	**4325.26**	**lbs**
	706.74	**gallons**

% Total Hydrocarbon to mg/m³ to ppmv - Influent 1

Compound	Molecular Weight (g/mol)	% total	=	ppmv
Methane (CH4)	16.04	0.1703		1703.00
Ethane (C2H6)	30.07	0.0008		8.00
Propane (C3H8)	44.10	0.0417		417.00
Iso-Butane (C4H10)	58.12	0.2303		2303.00
N-Butane (C4H10)	58.12	1.1515		11515.00
Iso-Pentane (C4H12)	72.15	2.2232		22232.00
N-Pentane (C5H12)	72.15	3.2619		32619.00
Hexane+ (C6H14)	86.18	8.978		89780.00
			Total	**160577.00**

Molecular Weight Calculations

Total Hydrocarbon %=	16.0577
g of Methane (CH4) =	0.170112283
g of Ethane (C2H6) =	0.001498097
g of Propane (C3H8) =	0.114522628
g of Iso-Butane (C4H10) =	0.833558729
g of N-Butane (C4H10) =	4.167793644
g of Iso-Pentane (C4H12) =	9.989218879
g of N-Pentane (C5H12) =	14.65627612
g of Hexane+ (C6H14) =	48.18398899
Calculated MW (Grams)	**78.11696937**

% Total Hydrocarbon to mg/m³ to ppmv - Influent 2

Compound	Molecular Weight (g/mol)	% total	=	ppmv
Methane (CH4)	16.04	1.3772		13772.00
Ethane (C2H6)	30.07	0.3098		3098.00
Propane (C3H8)	44.10	0.7925		7925.00
Iso-Butane (C4H10)	58.12	0.4447		4447.00
N-Butane (C4H10)	58.12	1.327		13270.00
Iso-Pentane (C4H12)	72.15	2.0582		20582.00
N-Pentane (C5H12)	72.15	3.3916		33916.00
Hexane+ (C6H14)	86.18	11.3355		113355.00
			Total	**210365.00**

Molecular Weight Calculations

Total Hydrocarbon %=	21.0365
g of Methane (CH4) =	1.050093314
g of Ethane (C2H6) =	0.442834407
g of Propane (C3H8) =	1.661362394
g of Iso-Butane (C4H10) =	1.228624724
g of N-Butane (C4H10) =	3.66625817
g of Iso-Pentane (C4H12) =	7.059117724
g of N-Pentane (C5H12) =	11.63235044
g of Hexane+ (C6H14) =	46.43801916
Calculated MW (Grams)	**73.17866033**

% Total Hydrocarbon to mg/m³ to ppmv - Influent 3

Compound	Molecular Weight (g/mol)	% total	=	ppmv
Methane (CH4)	16.04	0.2608		2608.00
Ethane (C2H6)	30.07	0.0169		169.00
Propane (C3H8)	44.10	0.2736		2736.00
Iso-Butane (C4H10)	58.12	0.3403		3403.00
N-Butane (C4H10)	58.12	0.8731		8731.00
Iso-Pentane (C4H12)	72.15	1.8397		18397.00
N-Pentane (C5H12)	72.15	3.0715		30715.00
Hexane+ (C6H14)	86.18	11.3543		113543.00
			Total	**180302.00**

Molecular Weight Calculations

Total Hydrocarbon %=	18.0302
g of Methane (CH4) =	0.232012512
g of Ethane (C2H6) =	0.028185101
g of Propane (C3H8) =	0.669197236
g of Iso-Butane (C4H10) =	1.09695045
g of N-Butane (C4H10) =	2.814420916
g of Iso-Pentane (C4H12) =	7.361779403
g of N-Pentane (C5H12) =	12.29097431
g of Hexane+ (C6H14) =	54.27081086
Calculated MW (Grams)	**78.76433079**

ATTACHMENT 1

MDPE Field Logs

MDPE FIELD NOTES					
Site Name:	DCP Plant to Lea Station 6inch Sec.31			Event #:	2
Location:	S. of Monument, NM			Arrive at site:	9/7/11 9:30
Date:	9/7-9/2011				
Job#:	700376.085.02	SRS#:	2009-084	Start Vac:	9/7/11 10:30
Phase:	MDPE2	Unit:	1107	Stop Vac:	9/9/11 1:00
Onsite Personnel:	M.L.Coggins, L.C.Jaquez			Leave Site:	9/9/11 1:30

GAUGING DATA

WELL#	BEFORE			AFTER			COMMENTS
	PSH	GW	PSH-T	PSH	GW	PSH-T	
MW-5	-	83.60	-	-	83.62	-	
MW-4	-	83.95	-	-	83.97	-	
MW-3	-	82.93	-	-	82.97	-	
MW-1	84.33	87.94	3.61	-	88.63	-	Stinger @ 88'
MW-2	-	82.61	-	-	82.64	-	
WASTE:	H2O:	493		PSH:	31		TOTAL (GAL): 524

Sample Name	Analysis	Date:	Time:	Comments:
INFLUENT	ASTM D 1945	7-Sep-11	11:30	FiD 50,000+
INFLUENT	ASTM D 1945	8-Sep-11	19:00	FiD 50,000+
INFLUENT	ASTM D 1945	9-Sep-11	0:00	FiD 50,000+
EFFLUENT				

Notes:	Equipment malfunctions caused a delay durring event. 12 hours MDPE was completed

Start Date: 9/7/2011

MDPE FIELD DATA

		Total Flow			Well Flow						Well Data									
TIME	SAMPLE TAKEN *	Inflent temp. (°f)	Diff. Pressure (INH20) 6" Pitot	Pressure (In. h2O)	Inflent temp. (°f)	Diff. Pressure (INH20) 2" Preso	Vac (In.Hg)	FID Composite (PPM)	Propane Tank (%-size) 250 Gal.	EXHAUST TEMP F	COMMENTS: MW1 VAC (INH20)	PPM	VAC (INH20)	PPM	VAC (INH20)	PPM	VAC (INH20)	PPM	VAC (INH20)	PPM
10:30		110	1.35		88	25	5	50000+	77%	1430	50.4	50000+								
11:30	*	107	1.35		86	28	5.5	50000+	75%	1415	62.1	50000+								
Event paused due to mechanical fault @ 11:45 9/7/2011																				
Resumed @ 14:00 9/8/2011																				
15:00		111	1.25		88	18	5.5	50000+	65%	1422	58.2	50000+								
16:00		108	1.25		87	19	5.8	50000+	62%	1419	57.4	50000+								
17:00		108	1.25		89	20	6	50000+	60%	1414	58.5	50000+								
18:00		108	1.25		88	22	6	50000+	60%	1410	60.3	50000+								
19:00	*	101	1.25		82	24	5.5	50000+	60%	1423	63.8	50000+								
20:00		96	1.25		73	26	5	50000+	59%	1406	66.1	50000+								
21:00		93	1.25		70	26	5	50000+	58%	1410	64.2	50000+								
22:00		89	1.25		70	27	6	50000+	56%	1418	63.9	50000+								
23:00		89	1.25		70	27	6	50000+	54%	1408	63.4	50000+								
0:00	*	89	1.25		69	27	6	50000+	52%	1411	64.1	50000+								
1:00		88	1.25		66	27	6	50000+	50%	1407	62.4	50000+								

Soil Vacuum Influence

Observation Well	MW-5
Extraction Well (EW)	MW-1
Distance (ft) to EW	63
Time:	In.H2O
11:30	0.02
16:00	0.27
19:00	1.05
0:00	0.99

ATTACHMENT 2

Laboratory Analytical Results

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
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

Simon Walshe
Talon LPE-Amarillo
921 North Bivins
Amarillo, TX, 79107

Report Date: September 20, 2011

Work Order: 11091210

Project Location: Monument, Lea Co., NM
Project Name: DCP Plant to Lea Station 6 in. Sec. 31
Project Number: 700376.085.02
SRS #: 2009-084

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
276769	Influent #1	air	2011-09-07	11:30	2011-09-09

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.

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

Report Contents

Case Narrative

Samples for project DCP Plant to Lea Station 6 in. Sec. 31 were received by TraceAnalysis, Inc. on 2011-09-09 and assigned to work order 11091210. Samples for work order 11091210 were received intact at a temperature of 22.8 C.

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

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 11091210 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.

Analytical Report

Appendix

Laboratory Certifications

C.	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

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.

LAB Order ID # 1109120

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: TALON LPE / PLAINS ALL AMERICAN
Phone #: 866-742-0742 / 575-441-1099
Address: (Street, City, Zip) 921 N. BIVINS, AMARILLO, TX 79107
Fax #:
Contact Person: SIMON WALSHE
E-mail: SWALSHE@TALONLPE.COM
Invoice to: (If different from above) JASON HENRY - PLAINS ALL AMERICAN - SRS# 2009-084
Project #: 700376.085.02
Project Name: DCP PLANT TO LEA STATION 6" SEC 31
Project Location (including state): S of MONUMENT, NM
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

SRS # 2009-084

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
276769	INFLUENT #1	1	1 LTR			X							X	7 SEPT 2011	11:30
770	INFLUENT #2	1	1 LTR			X							X	8 SEPT 2011	19:00
771	INFLUENT #3	1	1 LTR			X							X	8 SEPT 2011	00:00

MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, Fl, S04, NO3, NO2, Alkalinity	Na, Ca, Mg, K, TDS, EC						Turn Around Time if different from standard	Hold
																			X						
																			X						
																			X						

ASTM D 1945

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
M.L. COGGINS	TALON LPE	9 SEPT 11	17:00					INST ____ °C OBS ____ °C COR ____ °C
								INST ____ °C OBS ____ °C COR ____ °C
				Brandelland	Trac Lubbock	9/9/11	5:45	INST IR °C OBS 22.6 °C COR 22.8 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review

REMARKS:

- Dry Weight Basis Required
- TRRP Report Required
- Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

pm

Carrier # Courier

806-665-0750
806-665-0753
877-788-0750

Midwest Precision Testing LLC
135 N Price Rd
Pampa, TX 79065

www.mwptlab.com

The following analytical results were produced using the strictest quality control and most current methods:

COC #: N/A

Lab #: 6740-6742

Quality Control #: 1649

Approved by:

Neil Ray

Neil Ray

Date: 9/17/11

806-665-0750
806-665-0753
877-788-0750

Midwest Precision Testing LLC
135 N Price Rd
Pampa, TX 79065

www.mwptlab.com

Sample Matrix: Gas
Sample Type: Spot
Preservative: N/A
Sample Container: Tedlar Bag

Method(s): ASTM D 1945
Gas Analysis by Gas Chromatography

Client: Trace Analysis, Inc.
Project Location: N/A

Sample Id.: Influent #1
Trace: 276769
Sample Temp.: N/A
Atmospheric Temp.: N/A
Pressure: N/A
Field Data: N/A
Sample Date: 9/07/11 Time: 11:30 am
Sampled By: N/A
Analysis Date: 9/16/11
Analysis By: Neil Ray

Lab #: 6740
Quality Control Report: 1649

Analytical Results

Gas Composition				
	Mol %	**GPM**	**Vol %**	**Wt. %**
Nitrogen (N2):	86.6088	9.4863	73.6088	75.9713
Carbon Dioxide (CO2):	7.8385	1.3230	10.3337	10.7787
Hydrocarbon Composition	**Mol %**	**GPM**	**Vol. %**	**Wt. %**
Methane (CH4):	0.1300	0.0221	0.1703	0.0651
Ethane (C2H6):	0.0004	0.0001	0.0008	0.0004
Propane (C3H8):	0.0196	0.0054	0.0417	0.0269
Iso-Butane (C4H10):	0.0911	0.0297	0.2303	0.1653
N-Butane (C4H10):	0.4725	0.1483	1.1515	0.8575
Iso-Pentane (C5H12):	0.7872	0.2866	2.2232	1.7710
N-Pentane (C5H12):	1.1638	0.4200	3.2619	2.6250
Hexane+ (C6H14):	2.8881	1.2477	8.9780	7.7389
Totals	100.0000	12.9692	100.0000	100.0000

Comments - Additional Data

BTU -dry (BTU/ft^3):	246.0	Z-Comp. Factor-dry:	0.99873
BTU -water vapor sat.(BTU/ft^3):	244.5	Z-Comp..Factor-water vapor sat.:	0.99089
Specific Gravity -dry:	1.1117	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	1.1118		

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Sample Matrix: Gas
Sample Type: Spot
Preservative: N/A
Sample Container: Tedlar Bag

Method(s): ASTM D 1945
Gas Analysis by Gas Chromatography

Client: Trace Analysis, Inc.
Project Location: N/A

Sample Id.: Influent #2
Trace: 276770
Sample Temp.: N/A
Atmospheric Temp.: N/A
Pressure: N/A
Field Data: N/A
Sample Date: 9/08/11 Time: 7:00 pm
Sampled By: N/A
Analysis Date: 9/16/11
Analysis By: Neil Ray

Lab #: 6741
Quality Control Report: 1649

Analytical Results

Gas Composition				
	Mol %	GPM	Vol %	Wt. %
Nitrogen (N2):	82.6486	9.0559	67.4014	70.8023
Carbon Dioxide (CO2):	9.1401	1.5432	11.5621	12.2746
Hydrocarbon Composition	**Mol %**	**GPM**	**Vol. %**	**Wt. %**
Methane (CH4):	1.0956	0.1862	1.3772	0.5362
Ethane (C2H6):	0.1563	0.0416	0.3098	0.1432
Propane (C3H8):	0.3879	0.1064	0.7925	0.5214
Iso-Butane (C4H10):	0.1833	0.0597	0.4447	0.3249
N-Butane (C4H10):	0.5675	0.1782	1.3270	1.0058
Iso-Pentane (C5H12):	0.7595	0.2766	2.0582	1.6687
N-Pentane (C5H12):	1.2611	0.4553	3.3916	2.7780
Hexane+ (C6H14):	3.8003	1.6424	11.3355	9.9450
Totals	100.0000	13.5456	100.0000	100.0000

Comments - Additional Data

BTU -dry (BTU/ft^3):	323.4	Z-Comp. Factor-dry:	0.99836
BTU -water vapor sat.(BTU/ft^3):	321.5	Z-Comp. Factor-water vapor sat.:	0.98964
Specific Gravity -dry:	1.1410	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	1.1419		

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Sample Matrix: Gas
Sample Type: Spot
Preservative: N/A
Sample Container: Tedlar Bag

Method(s): ASTM D 1945
Gas Analysis by Gas Chromatography

Client: Trace Analysis, Inc.
Project Location: N/A

Sample Id.: Influent #3
Trace: 276771
Sample Temp.: N/A
Atmospheric Temp.: N/A
Pressure: N/A
Field Data: N/A
Sample Date: 9/09/11 Time: 12:00 am
Sampled By: N/A
Analysis Date: 9/16/11
Analysis By: Neil Ray

Lab #: 6742
Quality Control Report: 1649

Analytical Results

Gas Composition				
	Mol %	GPM	Vol %	Wt. %
Nitrogen (N2):	84.1213	9.2162	69.7566	72.2571
Carbon Dioxide (CO2):	9.4951	1.6030	12.2132	12.7854
Hydrocarbon Composition	**Mol %**	**GPM**	**Vol. %**	**Wt. %**
Methane (CH4):	0.2040	0.0347	0.2608	0.1001
Ethane (C2H6):	0.0084	0.0022	0.0169	0.0077
Propane (C3H8):	0.1317	0.0361	0.2736	0.1775
Iso-Butane (C4H10):	0.1379	0.0449	0.3403	0.2451
N-Butane (C4H10):	0.3672	0.1153	0.8731	0.6526
Iso-Pentane (C5H12):	0.6676	0.2431	1.8397	1.4708
N-Pentane (C5H12):	1.1232	0.4054	3.0715	2.4808
Hexane+ (C6H14):	3.7436	1.6177	11.3543	9.8229
Totals	100.0000	13.3187	100.0000	100.0000

Comments - Additional Data

BTU -dry (BTU/ft^3):	285.3	Z-Comp. Factor-dry:	0.99848
BTU -water vapor sat.(BTU/ft^3):	283.6	Z-Comp. Factor-water vapor sat.:	0.99002
Specific Gravity -dry:	1.1376	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	1.1383		

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Sample Type: Standard
Preservative: N/A
Sample Container: Industrial Cylinder

Sample Id.: DCG
Reference Std. 47366AW
Sample Temp.: 120° F
Analysis Date: 9/16/11
Analysis By: Neil Ray

Method(s): ASTM D 1945
Gas Analysis by Gas Chromatography

Quality Control Report#: 1649

Analytical Results

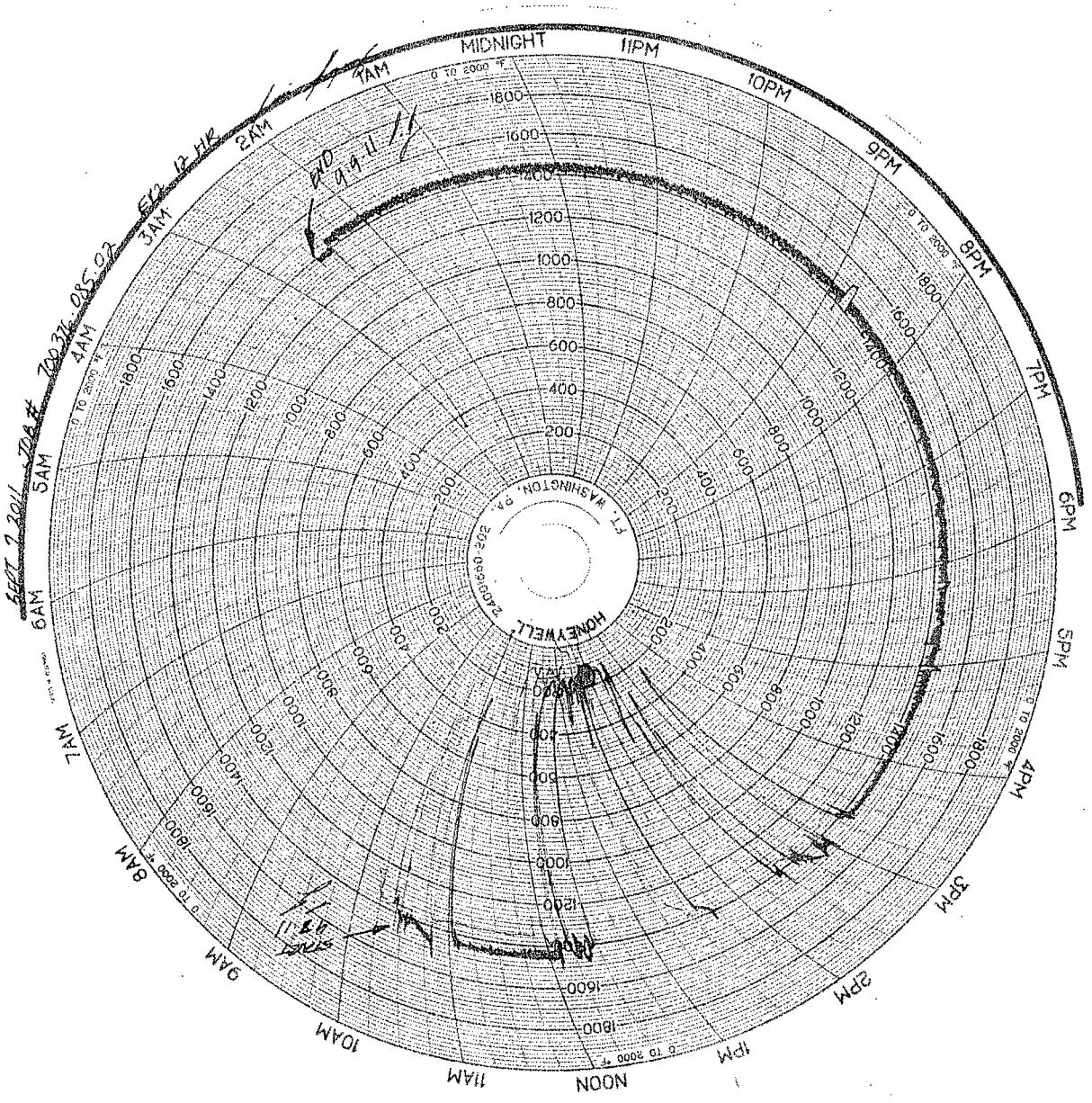
RESULTS	ACTUAL	ANALYSIS			
Gas Composition			**MDL**	**RL**	**% Deviation**
	Mol %	**Mol %**	**Mol %**	**ppm mol**	**(90-100%)**
Nitrogen (N2):	4.926	4.9609	0.0010	10	99.3
Carbon Dioxide (CO2):	1.489	1.4664	0.0010	10	98.5
			MDL	**RL**	**% Deviation**
Hydrocarbon Composition	**Mol %**	**Mol %**	**Mol %**	**ppm mol**	**(90-100%)**
Methane (CH4):	69.955	70.2611	0.0001	1	99.6
Ethane (C2H6):	9.138	9.0816	0.0001	1	99.4
Propane (C3H8):	5.947	5.8440	0.0001	1	98.3
Iso-Butane (C4H10):	3.018	2.9809	0.0001	1	98.8
N-Butane (C4H10):	3.021	2.9629	0.0001	1	98.1
Iso-Pentane (C5H12):	1.001	0.9649	0.0001	1	96.4
N-Pentane (C5H12):	1.007	0.9594	0.0001	1	95.3
Hexane+ (C6H14):	0.498	0.5179	0.0001	1	96.0
Totals	100.000	100.000			

Comments - Additional Data

ACTUAL		ANALYSIS	
BTU -dry (BTU/ft3):	1322.3	BTU -dry (BTU/ft^3):	1316.3
BTU -water vapor sat. (BTU/ft3):	1316.6	BTU -water vapor sat. (BTU/ft^3):	1310.6
Specific Gravity -dry:	0.8337	Specific Gravity -dry:	0.8298
Specific Gravity -water vapor sat.:	0.8406	Specific Gravity -water vapor sat.:	0.8367
Z-Comp. Factor -dry:	0.99565	Z-Comp. Factor -dry:	0.99570
Z-Comp. Factor -water vapor sat.:	0.98309	Z-Comp. Factor -water vapor sat.:	0.98318

ATTACHMENT 3

Oxidizer Charts


MIDNIGHT
1AM
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3AM
4AM
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8AM
9AM
10AM
11AM
NOON
1PM
2PM
3PM
4PM
5PM
6PM
7PM
8PM
9PM
10PM
11PM
0 TO 2000 FT
200
400
600
800
1000
1200
1400
1600
1800
HONEYWELL
WASHINGTON, D.C.
FT.

ATTACHMENT 4

Waste Ticket

S. C. C. 35434
ICC MC #259649

TRANSPORTS
FRAC TANKS
VAC TRUCKS
WINCH TRUCKS

PATE TRUCKING CO.

Denver City(806) 592-2772
Hobbs (575) 397-6264
Levelland(806) 897-1705
Seminole(432) 758-2166

BILL TO: PLAINS PIPELINE

CONTRACT NUMBER		FIELD ORDER NUMBER 164241
A F E NUMBER		DATE 9-13-11
REQ OR PURCHASE ORDER NUMBER		ORDERED BY

DELIVERED FROM DCP PLANT TO LEA STATION 6 INCH #31 TO COOPER'S SWD

LOCATION: DCP PLANT TO LEA STATION 6 INCH #31

WELL OR RIG NO.

TRUCK OR UNIT NO.	CAPACITY	AMOUNT HAULED	START TIME AM/PM	END TIME AM/PM	HOURS CHGD.
111	130	25			2.5

DESCRIPTION	OHR. OBBL.		RATE		AMOUNT	
PROVIDED V/T.	2.5	Hrs.	82	00	205	00
DRIVE TO LOC. EMTIED THE TANK ON		Bbls				
LOC HAULED FLUIDS TO COOPER'S SWD		Bbls				
		KCL				
	25	Disp	1	10	27	50
		Disp				
		Helper				
		Tank Min				
		Day Rental				
		Chart Recorder				

TOP GAUGE BOTTOM GAUGE SET DATE RELEASE DATE

FOR OFFICE USE ONLY

TAX 15 84

NET TOTAL 248.34

Thank You

Pablo Martinez
OPERATOR OR DRIVER

SRS# 2009-084

Jason Henry 09/22/2011
AUTHORIZED BY: