1R- 2136

REPORTS

DATE:

10-4-11

IR-2136

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
Fax 918.742.0876

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
Fax 903.531.9979

HOUSTON
3233 West 11th Street
Suite 400
Houston, Texas 77008
Phone 713.861.0081
Fax 713.868.3208

ENVIRONMENTAL CONSULTING
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www.talonlpe.com

MOBILE DUAL PHASE EXTRACTION REPORT
DCP PLANT TO LEA STATION 6 INCH #2 PIPELINE RELEASE
MONUMENT, LEA COUNTY, NEW MEXICO
SRS # 2009-039
TALON/LPE PROJECT # 700376.084.02

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. - MIDLAND
COPY 2 - PLAINS MARKETING, L.P. - HOUSTON
COPY 3 – NMOCD – SANTA FE
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COPY 5 - TALON/LPE

October 4, 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 on September 9, 2011 at the DCP Plant to Lea Station 6 Inch #2 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.

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 **498.75 equivalent gallons of PSH (Total)** were removed during the event. The combined volume of PSH was comprised of approximately **23 gallons of PSH (liquid phase)** and approximately **475.75 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 108.53 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 197,496 ppmv for Hydrocarbon Composition. Laboratory analytical results can be found in Attachment 2.

C. Waste Management and Disposition

A cumulative total of 362 gallons of fluid were generated during this event. The fluids were transferred to an on-site storage tank prior to being hauled to an authorized disposal facility. Copies of the waste tickets can be found in Attachment 4.

II. SYSTEM OPERATION DATA AND MASS RECOVERY CALCULATIONS

Formulae:

$$\text{Concentration (C\_mg/l)} = \frac{\text{C\_ppmv x Mol. wt. in mg(estimated) x 1000 x 0.000001}}{\text{0.0821 x Temp (K)}}$$

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

Recovery (lbs) = (lbs/hr) x (hrs)

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

$$\frac{\text{8.34 lbs}}{\text{gallon water}} \times \text{0.734 average specific gravity of light crude (estimated)} = \frac{\text{6.12156 lbs light crude}}{\text{gallon}}$$

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)
2:30	0.5	65	15	204.14	10	78.48	50000	-	197496.00	1.00	197496	646.00	189.51	94.76	94.76
3:00	0.5	65	15	204.14	10	78.48	50000	197496.00	197496.00	1.00	197496	646.00	189.51	94.76	189.51
4:00	1	65	15	204.14	10	78.48	50000	-	197496.00	1.00	197496	646.00	189.51	189.51	379.03
5:00	1	64	15.5	210.94	15	94.58	50000	-	197496.00	1.00	197496	647.24	228.85	228.85	607.87
6:00	1	65	16	217.74	20	107.21	50000	-	182183.00	1.00	182183	597.11	239.31	239.31	847.18
7:00	1	65	16	217.74	21	109.86	50000	-	182183.00	1.00	182183	597.11	245.21	245.21	1092.40
8:00	1	67	16.5	224.55	24	115.10	50000	182183.00	182183.00	1.00	182183	594.84	255.94	255.94	1348.34
9:00	1	71	16.5	224.55	26	119.35	50000	-	182183.00	1.00	182183	590.35	263.39	263.39	1611.73
10:00	1	82	16.5	224.55	28	122.59	50000	-	182183.00	1.00	182183	578.36	265.05	265.05	1876.77
11:00	1	83	19	258.57	40	132.10	50000	-	171616.00	1.00	171616	546.36	269.80	269.80	2146.57
12:00	1	84	20	272.18	40	125.81	50000	-	171616.00	1.00	171616	545.35	256.48	256.48	2403.05
13:00	1	82	20	272.18	38	122.85	50000	171616.00	171616.00	1.00	171616	547.37	251.38	251.38	2654.43
14:00	1	82	20	272.18	40	126.04	50000	-	171616.00	1.00	171616	547.37	257.91	257.91	2912.34
Averages		72.31	17.00	231.35	24.77	108.53	50000.00						Total	2912.34	

PSH Mass Recovered in Vapor Phase = 475.75 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)
197496	78.23626185	1	0.0821	65	291.3333333	646.000807

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)

$\pi * r^2 * h$ = volume

Total Hydrocarbon Recovery

PSH Mass Recovered in Vapor Phase =	2912.34	lbs
	475.75	gallons
PSH Mass Recovered in Liquid Phase =	140.80	lbs
	23.00	gallons
TOTAL =	**3053.13**	**lbs**
	498.75	**gallons**

Gallons removed determined at time of pick up

PSH Volume in Gallons=	23
PSH Mass in Pounds=	140.79588

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

Compound	Molecular Weight (g/mol)	% total	=	ppmv
Methane (CH4)	16.04	0.31		3100.00
Ethane (C2H6)	30.07	0.0562		562.00
Propane (C3H8)	44.10	0.1162		1162.00
Iso-Butane (C4H10)	58.12	0.256		2560.00
N-Butane (C4H10)	58.12	1.3525		13525.00
Iso-Pentane (C4H12)	72.15	2.2528		22528.00
N-Pentane (C5H12)	72.15	3.5893		35893.00
Hexane+ (C6H14)	86.18	11.8166		118166.00
			Total	**197496.00**

Molecular Weight Calculations

Total Hydrocarbon %=	19.7496
g of Methane (CH4) =	0.251772188
g of Ethane (C2H6) =	0.085568012
g of Propane (C3H8) =	0.259469559
g of Iso-Butane (C4H10) =	0.753368169
g of N-Butane (C4H10) =	3.980197067
g of Iso-Pentane (C4H12) =	8.230015798
g of N-Pentane (C5H12) =	13.11256912
g of Hexane+ (C6H14) =	51.56330194
Calculated MW (Grams)	**78.23626185**

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

Compound	Molecular Weight (g/mol)	% total	=	ppmv
Methane (CH4)	16.04	0.0905		905.00
Ethane (C2H6)	30.07	0.0092		92.00
Propane (C3H8)	44.10	0.0874		874.00
Iso-Butane (C4H10)	58.12	0.232		2320.00
N-Butane (C4H10)	58.12	1.4908		14908.00
Iso-Pentane (C4H12)	72.15	2.3981		23981.00
N-Pentane (C5H12)	72.15	3.5162		35162.00
Hexane+ (C6H14)	86.18	10.3941		103941.00
			Total	**182183.00**

Molecular Weight Calculations

Total Hydrocarbon %=	18.2183
g of Methane (CH4) =	0.079679224
g of Ethane (C2H6) =	0.015184951
g of Propane (C3H8) =	0.211564196
g of Iso-Butane (C4H10) =	0.740126137
g of N-Butane (C4H10) =	4.755948469
g of Iso-Pentane (C4H12) =	9.497204185
g of N-Pentane (C5H12) =	13.9252197
g of Hexane+ (C6H14) =	49.16833832
Calculated MW (Grams)	**78.39326518**

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

Compound	Molecular Weight (g/mol)	% total	=	ppmv
Methane (CH4)	16.04	0.0415		415.00
Ethane (C2H6)	30.07	0.0033		33.00
Propane (C3H8)	44.10	0.0797		797.00
Iso-Butane (C4H10)	58.12	0.2409		2409.00
N-Butane (C4H10)	58.12	1.3704		13704.00
Iso-Pentane (C4H12)	72.15	2.0201		20201.00
N-Pentane (C5H12)	72.15	3.3725		33725.00
Hexane+ (C6H14)	86.18	10.0332		100332.00
			Total	**171616.00**

Molecular Weight Calculations

Total Hydrocarbon %=	17.1616
g of Methane (CH4) =	0.038787759
g of Ethane (C2H6) =	0.005782153
g of Propane (C3H8) =	0.204804331
g of Iso-Butane (C4H10) =	0.815839316
g of N-Butane (C4H10) =	4.641038598
g of Iso-Pentane (C4H12) =	8.492810402
g of N-Pentane (C5H12) =	14.17850754
g of Hexane+ (C6H14) =	50.38348266
Calculated MW (Grams)	**78.76105276**

ATTACHMENT 1

MDPE Field Logs

MDPE FIELD NOTES					
Site Name:	DCP Plant to Lea Station 6inch #2			Event #:	2
Location:	Lea County, NM			Arrive at site:	9/9/2011 1:30
Date:	9/9/2011				
Job#:	700376.084.02	SRS#:	2009-039	Start Vac:	9/9/2011 2:00
Phase:	MDPE2	Unit:	1107	Stop Vac:	9/9/2011 14:00
Onsite Personnel:	M.L.Coggins, L.C.Jaquez			Leave Site:	9/9/2011 16:00

GAUGING DATA

WELL#	BEFORE			AFTER			COMMENTS
	PSH	GW	PSH-T	PSH	GW	PSH-T	
MW3	-	79.44	-	-	79.52	-	
MW2	-	78.53	-	-	78.56	-	
MW5	-	80.09	-	-	80.20	-	
MW4	-	80.34	-	-	80.37	-	
MW1	79.59	83.90	4.31	-	79.86	-	Stinger @ 81'
WASTE:	H2O:	339		PSH:	23		TOTAL (GAL): 362

Sample Name	Analysis	Date:	Time:	Comments:
INFLUENT	ASTM D 1945	9/9/2011	3:00	fid=>50k
INFLUENT	ASTM D 1945	9/9/2011	8:00	fid=>50k
INFLUENT	ASTM D 1945	9/9/2011	13:00	fid=>50k
EFFLUENT				

Notes:	

Start Date: 9/9/2011

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 (INH2O)	VAC (INH2O)	VAC (INH2O)	VAC (INH2O)	VAC (INH2O)
2:30		86	3.8	1.2	65	10	15	>50k	43	1414	193				
3:00	*	86	3.5	1.1	65	10	15	>50k	42	1410	196				
4:00	ow	86	3.7	1.1	65	10	15	>50k	41	1416	195				
5:00		85	3.3	1.15	64	15	15.5	>50k	40	1419	198				
6:00		85	3.4	1.12	65	20	16	>50k	39	1417	196				
7:00		85	3.6	1.15	65	21	16	>50k	38	1406	200				
8:00	**	85	3.8	1.15	67	24	16.5	>50k	36	1412	204				
9:00	ow	89	4	1.15	71	26	16.5	>50k	35	1411	202				
10:00		100	4.2	1.15	82	28	16.5	>50k	33	1414	211				
11:00		98	4.1	1.4	83	40	19	>50k	32	1415	214				
12:00		100	4	1.4	84	40	20	>50k	31	1412	217				
13:00	*	100	4.1	1.38	82	38	20	>50k	30	1414	215				
14:00	ow	104	4.2	1.4	82	40	20	>50k	28	1413	217				

Soil Vacuum Influence

Observation Well	MW5
Extraction Well (EW)	MW1
Distance (ft) to EW	53
Time:	In.H2O
4:00	0.11
9:00	0.3
14:00	0.89

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: 11091209

Project Location: Monument, Lea Co., NM
Project Name: DCP Plant to Lea Station 6 in. #2
Project Number: 700376.084.02
SRS #: 2009-039

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
276766	Inf. Air #1	air	2011-09-09	03:00	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. #2 were received by TraceAnalysis, Inc. on 2011-09-09 and assigned to work order 11091209. Samples for work order 11091209 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 11091209 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
1	NELAP	T104704219-11-4	Lubbock

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 # 1109209

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: TALONLPE

Phone #: 806-467-0607

Address: (Street, City, Zip) 921 N. BIVINS AMARILLO TX 79107

Fax #: 806-467-0622

Contact Person: SIMON WALSHE

E-mail: S.WALSHE@TALONLPE.COM

Invoice to: (If different from above) JASON HENRY PLAINS

Project #: 700376.084.02 SRS # 2009-039

Project Name: DCP PLANT TO LEA STATION 6INCH #2

Project Location (including state): S. OF MONUMENT NEW MEXICO

Sampler Signature:

ANALYSIS REQUEST

(Circle or Specify Method No.)

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
376766	INF AIR #1	1	1 LTR			X								9-9-11	03:00
767	INF AIR #2	1	1 LTR			X								9-9-11	08:00
768	INF AIR #3	1	1 LTR			X								9-9-11	13:00

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	SRS # 2009-039 ASTM D 1945	Turn Around Time if different from standard	Hold
																			X X X		

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	TALONLPE	9-9-11	17:00		TA	9-9-11	5:45	INST 1 °C OBS 22.6 °C COR 22.8 °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ____ °C OBS ____ °C COR ____ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ____ °C OBS ____ °C COR ____ °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.

Carrier # carry-in Nora Terry

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 #: 6737-6739

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: 276766
Sample Temp.: N/A
Atmospheric Temp.: N/A
Pressure: N/A
Field Data: N/A
Sample Date: 9/09/11 Time: 3:00 am
Sampled By: N/A
Analysis Date: 9/16/11
Analysis By: Neil Ray

Lab #: 6737
Quality Control Report: 1649

Analytical Results

Gas Composition				
	Mol %	GPM	Vol %	Wt. %
Nitrogen (N2):	89.1099	9.7612	75.0581	78.1218
Carbon Dioxide (CO2):	3.9741	0.6708	5.1923	5.4616
Hydrocarbon Composition	**Mol %**	**GPM**	**Vol. %**	**Wt. %**
Methane (CH4):	0.2388	0.0406	0.3100	0.1196
Ethane (C2H6):	0.0275	0.0073	0.0562	0.0258
Propane (C3H8):	0.0551	0.0151	0.1162	0.0757
Iso-Butane (C4H10):	0.1022	0.0333	0.2560	0.1853
N-Butane (C4H10):	0.5600	0.1758	1.3525	1.0157
Iso-Pentane (C5H12):	0.8049	0.2931	2.2528	1.8097
N-Pentane (C5H12):	1.2921	0.4664	3.5893	2.9129
Hexane+ (C6H14):	3.8356	1.6572	11.8166	10.2719
Totals	100.0000	13.1207	100.0000	100.0000

Comments - Additional Data

BTU -dry (BTU/ft^3):	306.1	Z-Comp. Factor-dry:	0.99864
BTU -water vapor sat.(BTU/ft^3):	304.1	Z-Comp. Factor-water vapor sat.:	0.99055
Specific Gravity -dry:	1.1148	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	1.1152		

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 #2
Trace: 276767
Sample Temp.: N/A
Atmospheric Temp.: N/A
Pressure: N/A
Field Data: N/A
Sample Date: 9/09/11 Time: 8:00 am
Sampled By: N/A
Analysis Date: 9/16/11
Analysis By: Neil Ray

Lab #: 6738
Quality Control Report: 1649

Analytical Results

Gas Composition				
	Mol %	GPM	Vol %	Wt. %
Nitrogen (N2):	88.9372	9.7415	75.4783	78.2552
Carbon Dioxide (CO2):	4.7883	0.8082	6.3034	6.6047
Hydrocarbon Composition	**Mol %**	**GPM**	**Vol. %**	**Wt. %**
Methane (CH4):	0.0692	0.0118	0.0905	0.0348
Ethane (C2H6):	0.0045	0.0012	0.0092	0.0042
Propane (C3H8):	0.0411	0.0113	0.0874	0.0568
Iso-Butane (C4H10):	0.0919	0.0299	0.2320	0.1673
N-Butane (C4H10):	0.6126	0.1923	1.4908	1.1152
Iso-Pentane (C5H12):	0.8504	0.3096	2.3981	1.9190
N-Pentane (C5H12):	1.2563	0.4534	3.5162	2.8425
Hexane+ (C6H14):	3.3485	1.4466	10.3941	9.0004
Totals	100.0000	13.0058	100.0000	100.0000

Comments - Additional Data

BTU -dry (BTU/ft^3):	280.4	Z-Comp. Factor-dry:	0.99872
BTU -water vapor sat.(BTU/ft^3):	278.6	Z-Comp. Factor-water vapor sat.:	0.99082
Specific Gravity -dry:	1.1094	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	1.1097		

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135 N Price Rd
Pampa, TX 79065

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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: 276768
Sample Temp.: N/A
Atmospheric Temp.: N/A
Pressure: N/A
Field Data: N/A
Sample Date: 9/09/11 Time: 1:00 pm
Sampled By: N/A
Analysis Date: 9/16/11
Analysis By: Neil Ray

Lab #: 6739
Quality Control Report: 1649

Analytical Results

Gas Composition				
	Mol %	GPM	Vol %	Wt. %
Nitrogen (N2):	90.1842	9.8771	77.4987	80.1547
Carbon Dioxide (CO2):	4.0058	0.6760	5.3395	5.5812
Hydrocarbon Composition	**Mol %**	**GPM**	**Vol. %**	**Wt. %**
Methane (CH4):	0.0314	0.0053	0.0415	0.0159
Ethane (C2H6):	0.0016	0.0004	0.0033	0.0015
Propane (C3H8):	0.0370	0.0102	0.0797	0.0517
Iso-Butane (C4H10):	0.0942	0.0307	0.2409	0.1733
N-Butane (C4H10):	0.5561	0.1745	1.3704	1.0227
Iso-Pentane (C5H12):	0.7074	0.2576	2.0201	1.6126
N-Pentane (C5H12):	1.1900	0.4294	3.3725	2.7197
Hexane+ (C6H14):	3.1921	1.3789	10.0332	8.6668
Totals	100.0000	12.8402	100.0000	100.0000

Comments - Additional Data

BTU -dry (BTU/ft^3):	261.7	Z-Comp. Factor-dry:	0.99882
BTU -water vapor sat.(BTU/ft^3):	260.0	Z-Comp. Factor-water vapor sat.:	0.99120
Specific Gravity -dry:	1.0978	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	1.0979		

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

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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

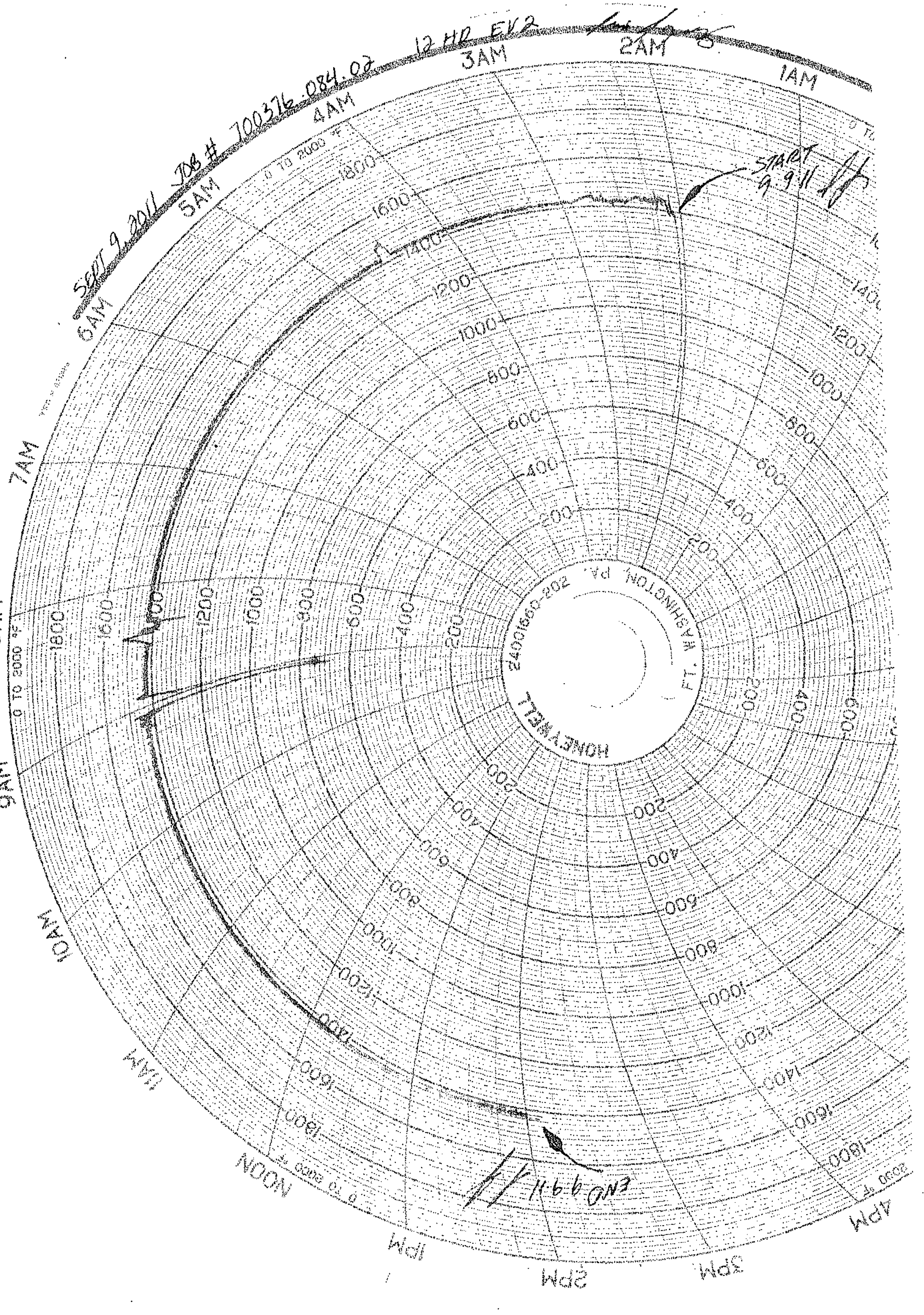
RESULTS	ACTUAL	ANALYSIS			
Gas Composition			MDL	RL	% Deviation
	Mol %	Mol %	Mol %	ppm mol	(90-100%)
Nitrogen (N2):	4.926	4.9609	0.0010	10	99.3
Carbon Dioxide (CO2):	1.489	1.4664	0.0010	10	98.5
			MDL	RL	% Deviation
Hydrocarbon Composition	Mol %	Mol %	Mol %	ppm mol	(90-100%)
Methane (CH4):	69.955	70.2611	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


SEPT 9, 2011 JOB # 700376.084.02 12 HR EV2
START 9.9.11
END 9.9.11
HONEYWELL
FT. WASHINGTON, PA.
24001660-202
0 TO 2000 °F
1AM
2AM
3AM
4AM
5AM
6AM
7AM
8AM
9AM
10AM
11AM
NOON
1PM
2PM
3PM
4PM

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 164240
A F E. NUMBER		DATE 9-13-11
REQ OR PURCHASE ORDER NUMBER		ORDERED BY

DELIVERED FROM: DCP PLANT TO LEA STATION 6 INCH #2 TO: COOPER'S SWD

LOCATION: DCP PLANT TO LEA STATION 6 INCH #2 WELL OR RIG NO.

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

DESCRIPTION	○HR. ○BBL.		RATE		AMOUNT	
PROVIDED V/T	2.5	Hrs.	82	00	205	00
DRIVE TO LOC. EMTIED THE TANK ON LOC.		Bbls				
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 # 2009-039

Jason Henry 09/22/2011
AUTHORIZED BY: