GW - 140

REPORTS

YEAR(S):

10-5-11

GW-140

TALON LPE

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
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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Toll Free: 866.742.0742
www.talonlpe.com

MOBILE DUAL PHASE EXTRACTION REPORT
TNM SPS-11 PIPELINE RELEASE
LEA COUNTY, NEW MEXICO
SRS # TNM SPS-11
TALON/LPE PROJECT # 700376.101.01

RECEIVED OCD
2011 DEC -6 A 10:42

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
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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 14, 2011 to September 15, 2011 at the TNM SPS-11 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. MW1, 4, 7, & 11 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 **59.02 equivalent gallons of PSH (Total)** were removed during the event. The combined volume of PSH was comprised of approximately **12 gallons of PSH (liquid phase)** and approximately **47.02 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 132.46 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 56,496 ppmv for Hydrocarbon Composition. Laboratory analytical results can be found in Attachment 2.

C. Waste Management and Disposition

A cumulative total of 2,977 gallons of fluid were generated during this event. The fluids were temporarily transferred to an on-site storage tank prior to being transported 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:

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

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

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

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

$$\frac{\text{8.34 lbs}}{\text{gallon water}} \times \text{0.66 average specific gravity of light crude (estimated)} = \frac{\text{5.5 lbs light crude}}{\text{gallon}}$$

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)
12:30	0.5	89	19	258.57	39	129.72	50000	-	56496.00	1.00	56496	76.72	37.20	18.60	18.60
13:00	0.5	86	19	258.57	40	131.73	50000	56496.00	56496.00	1.00	56496	77.14	37.99	18.99	37.59
14:00	1	88	19	258.57	41	133.13	50000	-	56496.00	1.00	56496	76.86	38.25	38.25	75.84
15:00	1	90	19	258.57	40	131.25	50000	-	56496.00	1.00	56496	76.58	37.57	37.57	113.41
16:00	1	88	19	258.57	39	129.84	50000	-	33540.00	1.00	33540	35.01	16.99	16.99	130.40
17:00	1	85	19	258.57	40	131.85	50000	-	33540.00	1.00	33540	35.20	17.35	17.35	147.76
18:00	1	82	19	258.57	39	130.55	50000	33540.00	33540.00	1.00	33540	35.40	17.27	17.27	165.03
19:00	1	80	19	258.57	41	134.11	50000	-	33540.00	1.00	33540	35.53	17.81	17.81	182.84
20:00	1	80	19	258.57	40	132.46	50000	-	33540.00	1.00	33540	35.53	17.59	17.59	200.43
21:00	1	76	19	258.57	40	132.96	50000	-	25786.00	1.00	25786	28.72	14.28	14.28	214.71
22:00	1	74	19	258.57	41	134.86	50000	-	25786.00	1.00	25786	28.83	14.53	14.53	229.24
23:00	1	70	19	258.57	42	137.01	50000	25786.00	25786.00	1.00	25786	29.05	14.88	14.88	244.12
0:00	1	66	19	258.57	39	132.53	50000	-	25786.00	1.00	25786	29.27	14.50	14.50	258.62
Averages:		81.08	19.00	258.57	40.08	132.46	50000.00						Total	258.62	

PSH Mass Recovered in Vapor Phase = 47.02 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)
56496	33.96502531	1	0.0821	89	304.6666667	76.71522174

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

Gallons removed determined at time of pick up

PSH Volume in Gallons=	12
PSH Mass in Pounds=	66

Total Hydrocarbon Recovery

PSH Mass Recovered in Vapor Phase =	258.62	lbs
	47.02	gallons
PSH Mass Recovered in Liquid Phase =	66.00	lbs
	12.00	gallons
TOTAL =	**324.62**	**lbs**
	59.02	**gallons**

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

Compound	Molecular Weight (g/mol)	% total	=	ppmv
Methane (CH4)	16.04	3.1505		31505.00
Ethane (C2H6)	30.07	0.3005		3005.00
Propane (C3H8)	44.10	0.5833		5833.00
Iso-Butane (C4H10)	58.12	0.3395		3395.00
N-Butane (C4H10)	58.12	0.5644		5644.00
Iso-Pentane (C4H12)	72.15	0.2551		2551.00
N-Pentane (C5H12)	72.15	0.2615		2615.00
Hexane+ (C6H14)	86.18	0.1948		1948.00
			Total	**56496.00**

Molecular Weight Calculations

Total Hydrocarbon %=	5.6496
g of Methane (CH4) =	8.94470759
g of Ethane (C2H6) =	1.599411463
g of Propane (C3H8) =	4.553159516
g of Iso-Butane (C4H10) =	3.492590626
g of N-Butane (C4H10) =	5.806239026
g of Iso-Pentane (C4H12) =	3.257835068
g of N-Pentane (C5H12) =	3.339568288
g of Hexane+ (C6H14) =	2.971513735
Calculated MW (Grams)	**33.96502531**

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

Compound	Molecular Weight (g/mol)	% total	=	ppmv
Methane (CH4)	16.04	2.7066		27066.00
Ethane (C2H6)	30.07	0.0167		167.00
Propane (C3H8)	44.10	0.0681		681.00
Iso-Butane (C4H10)	58.12	0.0852		852.00
N-Butane (C4H10)	58.12	0.0991		991.00
Iso-Pentane (C4H12)	72.15	0.0769		769.00
N-Pentane (C5H12)	72.15	0.1246		1246.00
Hexane+ (C6H14)	86.18	0.1768		1768.00
			Total	**33540.00**

Molecular Weight Calculations

Total Hydrocarbon %=	3.354
g of Methane (CH4) =	12.94390698
g of Ethane (C2H6) =	0.149722421
g of Propane (C3H8) =	0.895411449
g of Iso-Butane (C4H10) =	1.47639356
g of N-Butane (C4H10) =	1.717260584
g of Iso-Pentane (C4H12) =	1.654244186
g of N-Pentane (C5H12) =	2.680348837
g of Hexane+ (C6H14) =	4.542821705
Calculated MW (Grams)	**26.06010972**

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

Compound	Molecular Weight (g/mol)	% total	=	ppmv
Methane (CH4)	16.04	2.0496		20496.00
Ethane (C2H6)	30.07	0.0033		33.00
Propane (C3H8)	44.10	0.0283		283.00
Iso-Butane (C4H10)	58.12	0.1189		1189.00
N-Butane (C4H10)	58.12	0.0478		478.00
Iso-Pentane (C4H12)	72.15	0.0595		595.00
N-Pentane (C5H12)	72.15	0.1025		1025.00
Hexane+ (C6H14)	86.18	0.1687		1687.00
			Total	**25786.00**

Molecular Weight Calculations

Total Hydrocarbon %=	2.5786
g of Methane (CH4) =	12.74939269
g of Ethane (C2H6) =	0.03848251
g of Propane (C3H8) =	0.483995191
g of Iso-Butane (C4H10) =	2.679930195
g of N-Butane (C4H10) =	1.077381525
g of Iso-Pentane (C4H12) =	1.664827814
g of N-Pentane (C5H12) =	2.867980687
g of Hexane+ (C6H14) =	5.638162569
Calculated MW (Grams)	**27.20015318**

ATTACHMENT 1

MDPE Field Logs

MDPE FIELD NOTES					
Site Name:	TNM SPS-11			Event #:	1
Location:	15 Miles W. of Hobbs, NM			Arrive at site:	9/14/2011 8:00
Date:	9/14-15/2011				
Job#:	700376.101.01	SRS#:	TNM SPS-11	Start Vac:	9/14/2011 12:30
Phase:	MDPE	Unit:	1107	Stop Vac:	9/15/2011 0:30
Onsite Personnel:	L. Jaquez & M. Coggins			Leave Site:	9/15/2011 1:35

GAUGING DATA

WELL#	BEFORE			AFTER			COMMENTS
	PSH	GW	PSH-T	PSH	GW	PSH-T	
MW1	59.56	60.09	0.53	-	59.98	-	
MW7	51.82	60.49	8.67	-	59.60	-	
MW4	59.57	61.76	2.19	-	60.78	-	
MW11	60.78	61.77	0.99	-	61.18	-	
MW10	-	61.37	-	NG			
MW19	-	62.73	-	NG			
MW3	-	60.78	-	NG			
MW2	-	60.35	-	NG			
MW21	-	62.13	-	NG			
MW18	-	61.80	-	NG			
WASTE:	H2O:	2965		PSH:	12		TOTAL (GAL): 2977

Sample Name	Analysis	Date:	Time:	Comments:
INFLUENT	ASTM D 1945	9/14/2011	13:00	FID = >50K
INFLUENT	ASTM D 1945	9/14/2011	18:00	FID = >50K
INFLUENT	ASTM D 1945	9/14/2011	23:00	FID = >50K
EFFLUENT				

Notes:	

Start Date: 9/14/2011

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		MW4		MW7		MW11			
											VAC (INH2O)	PPM	VAC (INH2O)	PPM	VAC (INH2O)	PPM	VAC (INH2O)	PPM	VAC (INH2O)	PPM
12:30		112	0.4	0.25	89	39	19	>50K	55	1410										
13:00	*	110	0.3	0.25	86	40	19	>50K	52	1414										
14:00		110	0.3	0.25	88	41	19	>50K	48	1414										
15:00		112	0.3	0.25	90	40	19	>50K	45	1414										
16:00		110	0.3	0.25	88	39	19	>50K	43	1411										
17:00		110	0.4	0.25	85	40	19	>50K	40	1410										
18:00	*	108	0.4	0.25	82	39	19	>50K	85	1412	All recovery through stinger. No data collected.									
19:00		104	0.3	0.25	80	41	19	>50K	81	1409										
20:00		100	0.2	0.25	80	40	19	>50K	78	1413										
21:00		97	0.3	0.25	76	40	19	>50K	74	1410										
22:00		93	0.2	0.25	74	41	19	>50K	69	1412										
23:00	*	90	0.2	0.25	70	42	19	>50K	65	1409										
0:00		88	0.2	0.25	66	39	19	>50K	58	1414										

Soil Vacuum Influence

Observation Well	MW10
Extraction Well (EW)	MW7
Distance (ft) to EW	83
Time:	In. H2O
14:00	0.58
19:00	0.74
0:00	1.04

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 29, 2011

Work Order: 11091917

Project Location: 15 Miles N. Hobbs, New Mexico
Project Name: TNM SPS-11
Project Number: 700376.101.01
SRS #:

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
277796	Influent Air #1	air	2011-09-14	13:00	2011-09-19

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 TNM SPS-11 were received by TraceAnalysis, Inc. on 2011-09-19 and assigned to work order 11091917. Samples for work order 11091917 were received intact at a temperature of 22.6 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 11091917 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 # 1109197

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 / CO PLAINS ALL AMERICAN

Phone #: 806-467-0607

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

Project #: 700376.101.01

Project Name: TNM SPS-11

Project Location (including state): 15 MILES N. HOBBS NEW MEXICO

Sampler Signature:

SPS# TNM SPS-11

ASTMD 1945

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
[redacted]	INFL AIR # 1	1	1 LTR			X							X	9-14-11	15:00
[redacted]	INFL AIR # 2	1	1 LTR			X							X	9-14-11	18:00
[redacted]	INFL AIR # 3	1	1 LTR			X							X	9-14-11	23:00

ANALYSIS REQUEST (Circle or Specify Method No.)

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, SO4, NO3, NO2, Alkalinity	Na, Ca, Mg, K, TDS, EC			Turn Around Time if different from standard	Hold
																		X				
																		X				
																		X				

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	TALONLPE	9-16-11	20:00					INST ___ °C
								OBS ___ °C
								COR ___ °C
								INST ___ °C
								OBS ___ °C
								COR ___ °C
				Brenda Ward	Trace Lubbock	9/19/11	8:00	INST IR °C
								OBS 22.7 °C
								COR 22.6 °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 # Courier

ORIGINAL COPY

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 #: 6960-6962

Quality Control #: 1672

Approved by:

Neil Ray

Neil Ray

Date: 9/26/11

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: 277796-1
Sample Temp.: N/A
Atmospheric Temp.: N/A
Pressure: N/A
Field Data: N/A
Sample Date: 9/14/11 Time: 1:00 pm
Sampled By: N/A
Analysis Date: 9/26/11
Analysis By: Neil Ray

Lab #: 6960
Quality Control Report: 1672

Analytical Results

Gas Composition				
	Mol %	GPM	Vol %	Wt. %
Nitrogen (N2):	86.9545	9.5180	80.2138	82.3781
Carbon Dioxide (CO2):	9.8795	1.6664	14.1365	14.6722
Hydrocarbon Composition	**Mol %**	**GPM**	**Vol. %**	**Wt. %**
Methane (CH4):	2.2156	0.3762	3.1505	1.1992
Ethane (C2H6):	0.1340	0.0357	0.3005	0.1358
Propane (C3H8):	0.2524	0.0692	0.5833	0.3753
Iso-Butane (C4H10):	0.1237	0.0403	0.3395	0.2425
N-Butane (C4H10):	0.2134	0.0669	0.5644	0.4182
Iso-Pentane (C5H12):	0.0832	0.0303	0.2551	0.2022
N-Pentane (C5H12):	0.0860	0.0310	0.2615	0.2094
Hexane+ (C6H14):	0.0577	0.0249	0.1948	0.1671
Totals	100.0000	11.8588	100.0000	100.0000

Comments - Additional Data

BTU -dry (BTU/ft^3):	51.7	Z-Comp. Factor-dry:	0.99939
BTU -water vapor sat.(BTU/ft^3):	52.0	Z-Comp. Factor-water vapor sat.:	0.99368
Specific Gravity -dry:	1.0218	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	1.0206		

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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: 277797-1
Sample Temp.: N/A
Atmospheric Temp.: N/A
Pressure: N/A
Field Data: N/A
Sample Date: 9/14/11 Time: 6:00 pm
Sampled By: N/A
Analysis Date: 9/26/11
Analysis By: Neil Ray

Lab #: 6961
Quality Control Report: 1672

Analytical Results

Gas Composition				
	Mol %	GPM	Vol %	Wt. %
Nitrogen (N2):	88.4445	9.6804	82.8912	84.3417
Carbon Dioxide (CO2):	9.4616	1.5958	13.7548	14.1442
Hydrocarbon Composition	**Mol %**	**GPM**	**Vol. %**	**Wt. %**
Methane (CH4):	1.8735	0.3181	2.7066	1.0208
Ethane (C2H6):	0.0073	0.0019	0.0167	0.0075
Propane (C3H8):	0.0290	0.0079	0.0681	0.0434
Iso-Butane (C4H10):	0.0306	0.0100	0.0852	0.0603
N-Butane (C4H10):	0.0369	0.0116	0.0991	0.0728
Iso-Pentane (C5H12):	0.0247	0.0090	0.0769	0.0604
N-Pentane (C5H12):	0.0403	0.0145	0.1246	0.0989
Hexane+ (C6H14):	0.0516	0.0223	0.1768	0.1502
Totals	100.0000	11.6715	100.0000	100.0000

Comments - Additional Data

BTU -dry (BTU/ft^3):	27.2	Z-Comp. Factor-dry:	0.99946
BTU -water vapor sat.(BTU/ft^3):	27.7	Z-Comp. Factor-water vapor sat.:	0.99403
Specific Gravity -dry:	1.0149	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	1.0136		

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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: 277798-1
Sample Temp.: N/A
Atmospheric Temp.: N/A
Pressure: N/A
Field Data: N/A
Sample Date: 9/14/11 Time: 11:00 pm
Sampled By: N/A
Analysis Date: 9/26/11
Analysis By: Neil Ray

Lab #: 6962
Quality Control Report: 1672

Analytical Results

Gas Composition				
	Mol %	GPM	Vol %	Wt. %
Nitrogen (N2):	89.4698	9.7924	84.3413	85.4321
Carbon Dioxide (CO2):	8.9454	1.5087	13.0802	13.3901
Hydrocarbon Composition	**Mol %**	**GPM**	**Vol. %**	**Wt. %**
Methane (CH4):	1.4105	0.2395	2.0496	0.7695
Ethane (C2H6):	0.0014	0.0004	0.0033	0.0015
Propane (C3H8):	0.0120	0.0033	0.0283	0.0180
Iso-Butane (C4H10):	0.0424	0.0138	0.1189	0.0837
N-Butane (C4H10):	0.0177	0.0056	0.0478	0.0350
Iso-Pentane (C5H12):	0.0190	0.0069	0.0595	0.0465
N-Pentane (C5H12):	0.0330	0.0119	0.1025	0.0809
Hexane+ (C6H14):	0.0489	0.0211	0.1687	0.1427
Totals	100.0000	11.6035	100.0000	100.0000

Comments - Additional Data

BTU -dry (BTU/ft^3):	21.1	Z-Comp. Factor-dry:	0.99948
BTU -water vapor sat.(BTU/ft^3):	21.7	Z-Comp. Factor-water vapor sat.:	0.99416
Specific Gravity -dry:	1.0136	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	1.0121		

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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: 9/26/11
Analysis By: Neil Ray

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

Quality Control Report#: 1672

Analytical Results

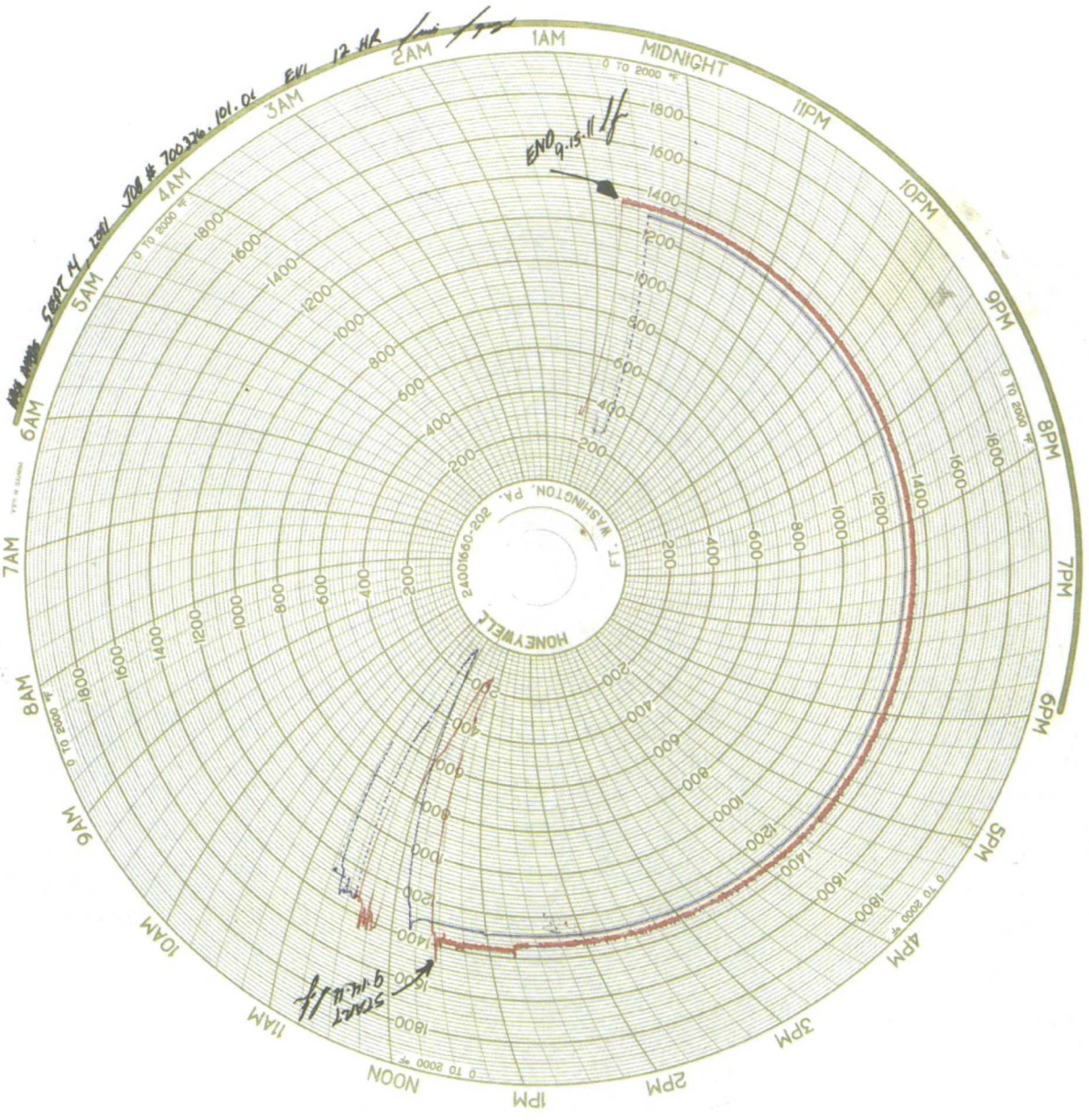
RESULTS	ACTUAL	ANALYSIS			
Gas Composition			MDL	RL	% Deviation
	Mol %	Mol %	Mol %	ppm mol	(90-100%)
Nitrogen (N2):	4.926	4.9098	0.0010	10	99.7
Carbon Dioxide (CO2):	1.489	1.4796	0.0010	10	99.4
			MDL	RL	% Deviation
Hydrocarbon Composition	Mol %	Mol %	Mol %	ppm mol	(90-100%)
Methane (CH4):	69.955	70.2404	0.0001	1	99.6
Ethane (C2H6):	9.138	9.0434	0.0001	1	99.0
Propane (C3H8):	5.947	5.8388	0.0001	1	98.2
Iso-Butane (C4H10):	3.018	2.9734	0.0001	1	98.5
N-Butane (C4H10):	3.021	2.9932	0.0001	1	99.1
Iso-Pentane (C5H12):	1.001	1.0165	0.0001	1	98.4
N-Pentane (C5H12):	1.007	0.9901	0.0001	1	98.3
Hexane+ (C6H14):	0.498	0.5148	0.0001	1	96.6
Totals	100.000	100.000			

Comments - Additional Data

ACTUAL		ANALYSIS	
BTU -dry (BTU/ft3):	1322.3	BTU -dry (BTU/ft^3):	1319.2
BTU -water vapor sat. (BTU/ft3):	1316.6	BTU -water vapor sat. (BTU/ft^3):	1313.5
Specific Gravity -dry:	0.8337	Specific Gravity -dry:	0.8314
Specific Gravity -water vapor sat.:	0.8406	Specific Gravity -water vapor sat.:	0.8383
Z-Comp. Factor -dry:	0.99565	Z-Comp. Factor -dry:	0.99568
Z-Comp. Factor -water vapor sat.:	0.98309	Z-Comp. Factor -water vapor sat.:	0.98314

ATTACHMENT 3

Oxidizer Charts


MIDNIGHT
1AM
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NOON
1PM
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11PM
0 TO 2000 FT
200
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600
800
1000
1200
1400
1600
1800
2000
WASHINGTON, PA.
HONEYWELL
24001650-202
FT.
END 9:15 AM
START 9:44 AM

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: Picins Pipeline

CONTRACT NUMBER		FIELD ORDER NUMBER 163933
A. F. E. NUMBER		DATE 9-15-11
REQ. OR PURCHASE ORDER NUMBER		ORDERED BY MIKE

DELIVERED FROM: Location
TO: Disposal
LOCATION: TNM SRS-11
WELL OR RIG NO.

TRUCK OR UNIT NO.	CAPACITY	AMOUNT HAULED	START TIME	AM/PM	END TIME	AM/PM	HOURS CHGD.
68	130	25					4

DESCRIPTION	○HR. ○BBL.		RATE		AMOUNT	
Provide V/T	4	Hrs.	82	00	328	00
Pull fluid from tank and took it		Bbls				
to Disposal 25 BBls		Bbls				
Job # 700376.101.01		KCL				
SRS # TNP SPS-11	25	Disp	1	30	32	00
		Disp				
		Helper				
		Tank Min				
		Day Rental				
		Chart Recorder				
					360	00

TOP GAUGE BOTTOM GAUGE SET DATE RELEASE DATE

FOR OFFICE USE ONLY

TAX 24.00

NET TOTAL 384 00

Thank You

Omar Hernandez
OPERATOR OR DRIVER

SRS # TNM SPS-11

Jason Henry 09/22/2011
AUTHORIZED BY: