1R - 455

REPORTS

DATE:

1-15-13

TALON LPE

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MOBILE DUAL PHASE EXTRACTION REPORT
VACUUM TO JAL 14 INCH MAINLINE 3 PIPELINE RELEASE
LEA COUNTY, NEW MEXICO
SRS # 2003-00117
NMOCD# 1R-0455

PREPARED FOR:

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

PREPARED BY:

TALON/LPE
921 N. BIVINS
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2/7/13

TALON/LPE
F-6802

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JANUARY 15, 2013

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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 November 19th, 2012, to November 20th, 2012 at the Vacuum to Jal 14 Inch Mainline 3 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. RW-1, RW-2, RW-3, RW-4, & RW-5 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. Two 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. Both 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 **324.78 equivalent gallons of hydrocarbons (Total)** were removed during the event. The combined volume of hydrocarbons were comprised of approximately **284 gallons of PSH (liquid phase)** and approximately **40.78 gallons as off-gas vapor**. The calculations used to estimate the off-gas vapor mass recovered reflect the mass of total hydrocarbons recovered and does not necessarily equate to an equal mass of the product released. The mass recovery calculations may be affected by variations in the specific gravity of hydrocarbon released, age of release, activity of aerobic and/or anaerobic processes, and site specific geochemical factors.

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 308.41 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

Two 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 influent concentration was recorded as 16,694 ppmv for Hydrocarbon Composition. Laboratory analytical results can be found in Attachment 2.

C. Waste Management and Disposition

A cumulative total of 2,025 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. A copy of the disposal 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)

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

$$\frac{\text{8.34 lbs}}{\text{gallon water}} \times \text{0.82 average specific gravity of light crude (estimated)} = \frac{\text{6.84 lbs light crude}}{\text{gallon}}$$

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 (ppm)	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)
17:30	0.5	62	12	163.31	118.7	297.10	50000	-	16694.00	1.00	16694	20.04	22.25	11.13	11.13
18:00	0.5	62	12	163.31	116.9	294.83	50000	16694.00	16694.00	1.00	16694	20.04	22.08	11.04	22.17
19:00	1	62	12	163.31	122.2	301.44	50000	-	16694.00	1.00	16694	20.04	22.58	22.58	44.75
20:00	1	62	12	163.31	126.4	306.58	46114	-	16694.00	0.92	15397	18.48	21.18	21.18	65.92
21:00	1	60	11.5	156.50	125.1	309.81	44223	-	16694.00	0.88	14765	17.79	20.60	20.60	86.53
22:00	1	59	11.5	156.50	126.4	311.72	46782	-	16694.00	0.94	15620	18.85	21.97	21.97	108.50
23:00	1	56	11.5	156.50	125.9	312.00	38254	-	16694.00	0.77	12772	15.51	18.09	18.09	126.58
0:00	1	56	11.5	156.50	121.8	306.88	30576	-	16470.00	1.15	19003	23.17	26.58	26.58	153.17
1:00	1	56	11.5	156.50	124.3	310.01	28576	-	16470.00	1.08	17760	21.66	25.10	25.10	178.27
2:00	1	56	11.5	156.50	122.3	307.51	29372	-	16470.00	1.11	18254	22.26	25.59	25.59	203.85
3:00	1	54	11	149.70	124.6	315.17	28781	-	16470.00	1.09	17887	21.90	25.80	25.80	229.65
4:00	1	54	11	149.70	127.1	318.32	26501	16470.00	16470.00	1.00	16470	20.16	23.99	23.99	253.65
5:00	1	54	11	149.70	126.8	317.94	27931	-	16470.00	1.05	17359	21.25	25.26	25.26	278.90
Averages:		57.92	11.54	157.03	123.73	308.41	38239.23						Total	278.90	

PSH Mass Recovered in Vapor Phase = 40.78 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.
(ppmv)	(Grams)	(atm)	(atm.liter/K.mole)	(F)	(K)	(C_mg/l)
16694	28.5422	1	0.0821	62	289.6666667	20.03580061

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

Liquid-phase Hydrocarbon Recovery

∏ * r2 * h = volume

Total Hydrocarbon Recovery

PSH Mass Recovered in Vapor Phase =	278.90	lbs
	40.78	gallons
PSH Mass Recovered in Liquid Phase =	1942.56	lbs
	284.00	gallons
TOTAL =	**2221.46**	**lbs**
	324.78	**gallons**

Gallons removed determined at time of pick up

PSH Volume in Gallons=	284
PSH Mass in Pounds=	1942.56

% Vol. Hydrocarbon to ppmv - Influent 1

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0.475		4750.00
Ethane (C2H6)	30.07	0.0024		24.00
Propane (C3H8)	44.10	0.0152		152.00
Iso-Butane (C4H10)	58.12	0.0465		465.00
N-Butane (C4H10)	58.12	0.1302		1302.00
Iso-Pentane (C4H12)	72.15	0.1668		1668.00
N-Pentane (C5H12)	72.15	0.1292		1292.00
Hexane+ (C6H14)	97.40	0.7041		7041.00
			Total	**16694.00**

*Hexane+ is treated as 60% hexanes, 30 % heptanes, and 10 % octanes, as such its (0.6*93.1887)+(0.3*100.2019)+(0.1*114.2285) = 97.3966

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	97.0314
Methane (CH4)	16.0425	0.3153
Carbon Dioxide (CO2)	44.011	2.2953
Ethane (C2H6)	30.069	0.0010
Propane (C3H8)	44.0956	0.0062
Iso-Butane (C4H10)	58.1222	0.0160
N-Butane (C4H10)	58.1222	0.0465
Iso-Pentane (C4H12)	72.1488	0.0514
N-Pentane (C5H12)	72.1488	0.0401
Hexane+	97.3966	0.1969
	Total	100.0001
	Calculated MW	**28.5422**

% Vol. Hydrocarbon to ppmv - Influent 2

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0.5569		5569.00
Ethane (C2H6)	30.07	0.0156		156.00
Propane (C3H8)	44.10	0.0293		293.00
Iso-Butane (C4H10)	58.12	0.0526		526.00
N-Butane (C4H10)	58.12	0.1077		1077.00
Iso-Pentane (C4H12)	72.15	0.1301		1301.00
N-Pentane (C5H12)	72.15	0.1306		1306.00
Hexane+ (C6H14)	97.40	0.6242		6242.00
			Total	**16470.00**

*Hexane+ is treated as 60% hexanes, 30 % heptanes, and 10 % octanes, as such its (0.6*93.1887)+(0.3*100.2019)+(0.1*114.2285) = 97.3966

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	96.0524
Methane (CH4)	16.0425	0.3713
Carbon Dioxide (CO2)	44.011	3.2446
Ethane (C2H6)	30.069	0.0066
Propane (C3H8)	44.0956	0.0120
Iso-Butane (C4H10)	58.1222	0.0182
N-Butane (C4H10)	58.1222	0.0386
Iso-Pentane (C4H12)	72.1488	0.0402
N-Pentane (C5H12)	72.1488	0.0407
Hexane+	97.3966	0.1754
	Total	100
	Calculated MW	**28.6671**

Calculated MW= $\frac{\text{sum (individual component MW x their reported mol\%)}}{100}$

ppmv= **% Vol x 10,000**

ATTACHMENT 1

MDPE Field Logs

MDPE FIELD NOTES					
Site Name:	Vac to Jal 14 Inch #3			Event #:	2
Location:	Eunice, NM			Arrive at site:	11/19/2012 16:30
Date:	11/19/2012				
Job#:	700376.128.02	SRS#:	2003-00117	Start Vac:	11/19/2012 17:00
Phase:	MDPE2	Unit:	1107	Stop Vac:	11/20/2012 5:00
Onsite Personnel:	L. Bridges & B. Huntington.			Leave Site:	11/20/2012 5:30

GAUGING DATA

WELL#	BEFORE			AFTER			COMMENTS
	PSH	GW	PSH-T	PSH	GW	PSH-T	
RW-1	48.75	49.44	0.69	-	48.79	-	Stinger set @ 49'
RW-2	49.08	49.27	0.19	-	48.73	-	Stinger set @ 49'
RW-3	49.61	49.76	0.15	-	49.78	-	Stinger set @ 50'
RW-4	48.21	48.49	0.28	-	48.25	-	Stinger set @ 49'
RW-5	48.81	50.57	1.76	-	49.89	-	Stinger set @ 50'
WASTE:	H2O:	1741		PSH:	284		TOTAL (GAL): 2025

Sample Name	Analysis	Date:	Time:	Comments:
INFLUENT 1	ASTM D 1945	11/19/2012	18:00	FID = >50000
INFLUENT 2	ASTM D 1945	11/20/2012	4:00	FID = 26501

Notes:	

Start Date: 11/19/2012

MDPE FIELD DATA

		Well Flow						Well Data				
TIME	SAMPLE TAKEN *	Inflent temp. (°f)	Diff. Pressure (INH20) 2" Preso	Vac (In.Hg)	FID Composite (PPM)	Propane Tank (%-size) 500 Gal.	EXHAUST TEMP F	COMMENTS: RW-1 VAC (INH2O)	RW-2 VAC (INH2O)	RW-3 VAC (INH2O)	RW-4 VAC (INH2O)	RW-5 VAC (INH2O)
17:30		62	118.7	12	>50000	86	1417	No Data collected at 17:30				
18:00	*	62	116.9	12	>50000	84	1411	30.8	30.5	17.3	18.9	16.9
19:00		62	122.2	12	>50000	83	1408	30.7	30.7	17.1	21.4	20.5
20:00		62	126.4	12	46114	81	1403	30.4	31.2	18	21	22.7
21:00		60	125.1	11.5	44223	79	1406	31.7	31.7	18.4	19.7	22.9
22:00		59	126.4	11.5	46782	77	1402	30.8	30.9	18.7	20.3	21.3
23:00		56	125.9	11.5	38254	75	1409	31.6	31.3	18.1	21.7	22.3
0:00		56	121.8	11.5	30576	73	1409	30.6	31.7	18.4	20.9	22.6
1:00		56	124.3	11.5	28576	71	1411	31.7	30.6	18.6	21.2	21.9
2:00		56	122.3	11.5	29372	69	1407	30.5	31.1	18.2	21.1	22.5
3:00		54	124.6	11	28781	67	1410	31.2	30.7	18.5	19	26.2
4:00	*	54	127.1	11	26501	66	1411	31.9	31	18.3	18.2	26.8
5:00		54	126.8	11	27931	64	1409	30.7	31.4	18.7	19.2	26

Soil Vacuum Influence

Observation Well	MW-1
Extraction Well (EW)	RW-1
Time:	In. H2O
18:00	0.1
4:00	0.1

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 | 915-585-3443 | FAX 915-585-4944
5002 Basin Street, Suite A1 | Midland, Texas 79703 | 432-689-6301 | FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100, Carrollton, Texas 75006 | 972-242-7750
E-Mail: lab@traceanalysis.com | WEB: www.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: December 4, 2012

Work Order: 12112709

Project Location: Eunice, NM
Project Name: Vac. to Jal 14" #3
Project Number: 700376.128.02 MDPE Event #1
SRS #: 2003-00117

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
314982	Influent #2	air	2012-11-20	04:00	2012-11-27

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 Vac. to Jal 14" #3 were received by TraceAnalysis, Inc. on 2012-11-27 and assigned to work order 12112709. Samples for work order 12112709 were received intact at a temperature of 20.2 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 12112709 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

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

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.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
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 # 12112709

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
Phone #: 8064670607
Address: (Street, City, Zip) 921 N Bivins Amarillo Tx 79107
Fax #:
Contact Person: Simon Walshe
E-mail:
Invoice to: (If different from above) Plains (Jason Henry) SRS # 2003-00117
Project #: 700376.128.02
Project Name: Var to Jal 14" #3
Project Location (including state): Eunice, NM
Sampler Signature: [signature]

ANALYSIS REQUEST
(Circle or Specify Method No.)

Analysis options: 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, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity; Na, Ca, Mg, K, TDS, EC; ASTM D 1945; Turn Around Time if different from standard; Hold

LAB # (LAB USE ONLY)	FIELD CODE (HDPE EVENT#1)	# CONTAINERS	Volume / Amount	MATRIX: AIR	PRESERVATIVE METHOD: NONE	SAMPLING DATE	SAMPLING TIME	ASTM D 1945
314982	Influent #2	1	1	✓	✓	11-20-12	0400	✓
983	Influent #1	1	1	✓	✓	11-19-12	1800	✓

Relinquished by	Company	Date	Time	Received by	Company	Date	Time	Temp.
[signature]	Talon	11-21-12	11:30	J. Holloyan		11/21/12	11:30	INST ___ °C, OBS ___ °C, COR ___ °C
								INST ___ °C, OBS ___ °C, COR ___ °C
W Holloyan		11-26-12	1730	Brenda Ward	Trace Lubbock	11/27/12	9:45	INST IR-3, OBS 20.5 °C, COR 20.2 °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

Carrier # LS ZP 160906

ORIGINAL COPY

Office: 806-665-0790
Fax: 806-665-0745

MIDWEST PRECISION TESTING, LLC.

615 N. Price Rd.
Pampa, TX 79065

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

COC #: N/A

Lab #: 16835-16836

Quality Control #: 2338

Approved by:

Neil Ray

Neil Ray

Date: 11/30/12

Office: 806-665-0750
Fax: 806-665-0745

MIDWEST PRECISION TESTING, LLC.

615 N. Price Rd.
Pampa, TX 79065

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 Air #2
Trace: 314982-1
Sample Temp.: N/A
Atmospheric Temp.: N/A
Pressure: N/A
Field Data: N/A
Sample Date: 11/20/12 Time: N/A
Sampled By: N/A
Analysis Date: 11/29/12
Analysis By: Jessica Cabezudo

Lab #: 16835
Quality Control Report: 2338

Analytical Results

Gas Composition					
	Mol %	GPM	Vol %	ppm vol.	Wt. %
Nitrogen (N2):	96.0524	10.5115	93.4563	934563	93.9499
Carbon Dioxide (CO2):	3.2446	0.5471	4.8968	48968	4.9750
Hydrocarbon Composition	**Mol %**	**GPM**	**Vol. %**		**Wt. %**
Methane (CH4):	0.3713	0.0630	0.5569	5569	0.2075
Ethane (C2H6):	0.0066	0.0018	0.0156	156	0.0069
Propane (C3H8):	0.0120	0.0033	0.0293	293	0.0184
Iso-Butane (C4H10):	0.0182	0.0059	0.0526	526	0.0367
N-Butane (C4H10):	0.0386	0.0121	0.1077	1077	0.0781
Iso-Pentane (C5H12):	0.0402	0.0146	0.1301	1301	0.1010
N-Pentane (C5H12):	0.0407	0.0147	0.1306	1306	0.1024
Hexanes+ (C6H14):	0.1754	0.0757	0.6242	6242	0.5240
Totals	100.000	11.2497	100.000		100.000

Comments - Additional Data

BTU -dry (BTU/ft^3):	18.2	Z-Comp. Factor-dry:	0.99961
BTU -water vapor sat.(BTU/ft^3):	18.9	Z-Comp. Factor-water vapor sat.:	0.99496
Specific Gravity -dry:	0.9895	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	0.9877	Molecular Weight	28.6671

Office: 806-665-0750
Fax: 806-665-0745

MIDWEST PRECISION TESTING, LLC.

615 N. Price Rd.
Pampa, TX 79065

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 Air #1
Trace: 314983-1
Sample Temp.: N/A
Atmospheric Temp.: N/A
Pressure: N/A
Field Data: N/A
Sample Date: 11/19/12 Time: N/A
Sampled By: N/A
Analysis Date: 11/29/12
Analysis By: Jessica Cabezudo

Lab #: 16836
Quality Control Report: 2338

Analytical Results

Gas Composition					
	Mol %	GPM	Vol %	ppm vol.	Wt. %
Nitrogen (N2):	97.0314	10.6184	94.8502	948502	95.3288
Carbon Dioxide (CO2):	2.2953	0.3871	3.4803	34803	3.5350
Hydrocarbon Composition	**Mol %**	**GPM**	**Vol. %**		**Wt. %**
Methane (CH4):	0.3153	0.0535	0.4750	4750	0.1770
Ethane (C2H6):	0.0010	0.0003	0.0024	24	0.0011
Propane (C3H8):	0.0062	0.0017	0.0152	152	0.0095
Iso-Butane (C4H10):	0.0160	0.0052	0.0465	465	0.0325
N-Butane (C4H10):	0.0465	0.0146	0.1302	1302	0.0944
Iso-Pentane (C5H12):	0.0514	0.0187	0.1668	1668	0.1294
N-Pentane (C5H12):	0.0401	0.0145	0.1292	1292	0.1013
Hexanes+ (C6H14):	0.1969	0.0850	0.7041	7041	0.5910
Totals	100.000	11.1989	100.000		100.000

Comments - Additional Data

BTU -dry (BTU/ft^3):	19.1	Z-Comp. Factor-dry:	0.99963
BTU -water vapor sat.(BTU/ft^3):	19.7	Z-Comp. Factor-water vapor sat.:	0.99508
Specific Gravity -dry:	0.9851	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	0.9833	Molecular Weight	28.5422

Office: 806-665-0750
Fax: 806-665-0745

MIDWEST PRECISION TESTING, LLC.

615 N. Price Rd.
Pampa, TX 79065

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

Sample Id.: DCG
Reference Std. 53619AW
Sample Temp.: 120° F
Analysis Date: 11/29/12
Analysis By: Jessica Cabezudo

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

Quality Control Report#: 2338

Analytical Results

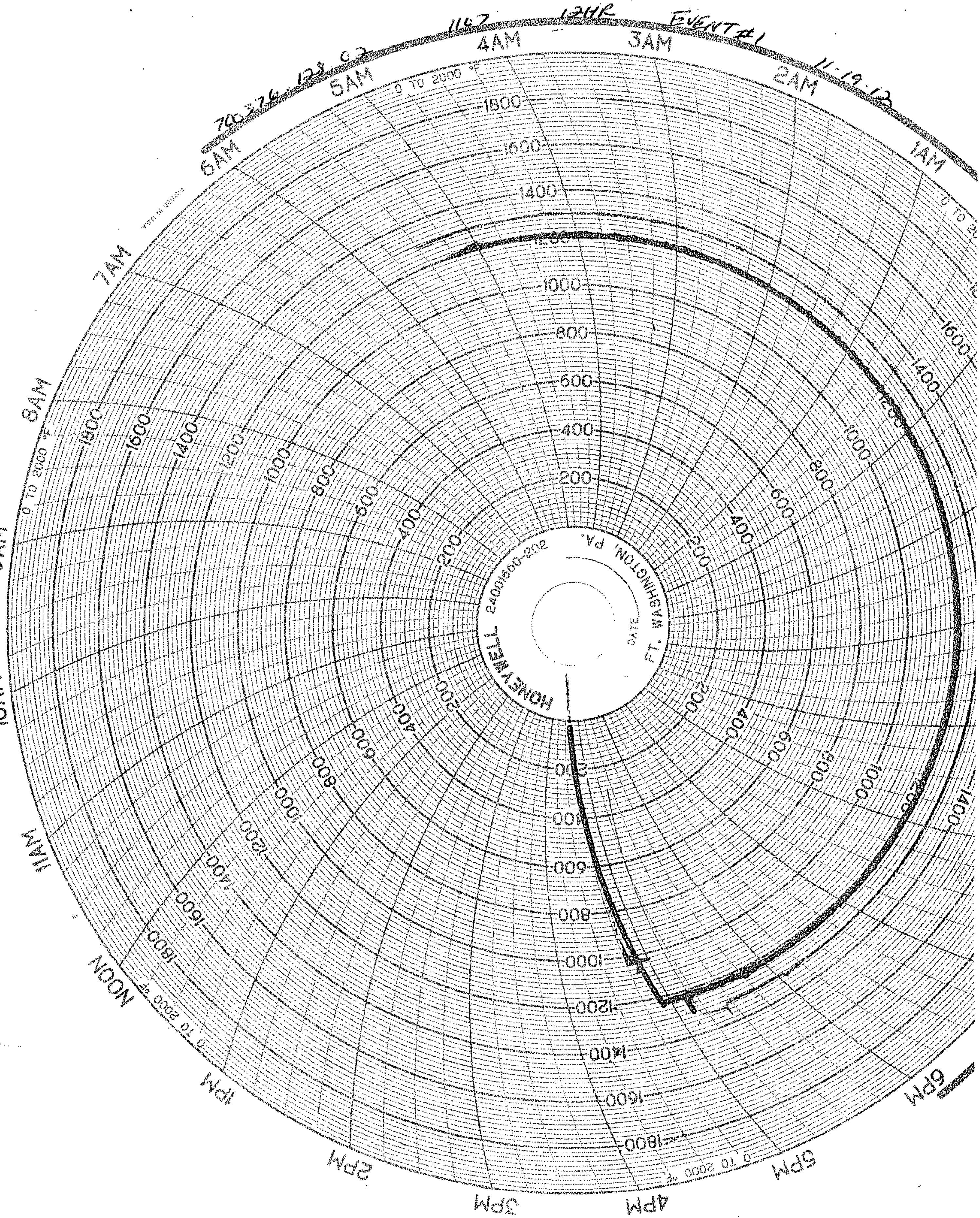
RESULTS	ACTUAL	ANALYSIS			
Gas Composition			MDL	RL	% Deviation
	Mol %	Mol %	Mol %	ppm mol	(90-100%)
Nitrogen (N2):	4.918	4.9766	0.0010	10	98.8
Carbon Dioxide (CO2):	1.499	1.4929	0.0010	10	99.6
			MDL	RL	% Deviation
Hydrocarbon Composition	Mol %	Mol %	Mol %	ppm mol	(90-100%)
Methane (CH4):	69.891	69.7445	0.0001	1	99.8
Ethane (C2H6):	9.111	9.1362	0.0001	1	99.7
Propane (C3H8):	5.984	6.0127	0.0001	1	99.5
Iso-Butane (C4H10):	3.024	3.0474	0.0001	1	99.2
N-Butane (C4H10):	3.040	2.9582	0.0001	1	97.3
Iso-Pentane (C5H12):	1.012	1.0449	0.0001	1	96.7
N-Pentane (C5H12):	1.018	1.0494	0.0001	1	96.9
Hexane+ (C6H14):	0.503	0.5371	0.0001	1	93.2
Totals	100.000	100.000			

Comments - Additional Data

ACTUAL		ANALYSIS	
BTU -dry (BTU/ft3):	1324.0	BTU -dry (BTU/ft^3):	1326.2
BTU -water vapor sat. (BTU/ft3):	1318.4	BTU -water vapor sat. (BTU/ft^3):	1320.6
Specific Gravity -dry:	0.8349	Specific Gravity -dry:	0.8368
Specific Gravity -water vapor sat.:	0.8419	Specific Gravity -water vapor sat.:	0.8438
Z-Comp. Factor -dry:	0.99564	Z-Comp. Factor -dry:	0.99562
Z-Comp. Factor -water vapor sat.:	0.98306	Z-Comp. Factor -water vapor sat.:	0.98302

ATTACHMENT 3

Oxidizer Charts


700376.128.02
1167
12HR
EVENT#1
11-19-13
HONEYWELL 24001660-202 FT. WASHINGTON, PA.
DATE
0 TO 2000 °F
1AM
2AM
3AM
4AM
5AM
6AM
7AM
8AM
9AM
10AM
11AM
NOON
1PM
2PM
3PM
4PM
5PM
6PM

ATTACHMENT 4

Waste Ticket

24-HOUR SERVICE, CALL
LOVINGTON 396-4948
TATUM 398-4960

GANDY CORPORATION

KILL TRUCKS – VACUUM TRUCKS – WINCH TRUCKS
TANK CLEANING – ROUSTABOUTING
PRC #14225

P.O. BOX 2140
LOVINGTON, NEW MEXICO 88260

485904

Date 11·20·12 Truck No. 369

Company PLAINS PIPELINE Purchase Order No. _____ Invoice Number _____

From VAC TO JAL LI #3 Rig No. _____ Location _____

To Lease SPRINKLE Well No. _____ Location _____

Time Out _____ A.M. P.M. Time In _____ A.M. P.M.

Diesel Brine Water Fresh Water
Crude Oil Salt Water Acid Bbls. Hauled 50

	TIME	RATE	AMOUNT
		1.10	55.00
Driver, Operator or Pusher DENNIS HARDROVE	2.5	102.00	255.00
Helper			
Helper			
Helper			
Other Charges			

Description of Work: UNLOAD OUT POLYTANK BOX TO DISPOSAL

Sprinkle SWD 6561?

Sub Total	310.00
Sales Tax	17.05
TOTAL	327.05

Authorized by:

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