



Pre-Plugging Methane Emissions Monitoring Report

James McFarland #004

Prepared by TS-Nano, Inc.

For NM Energy, Minerals and Natural Resources Department, Oil Conservation Division

PO# 52100-0000077175

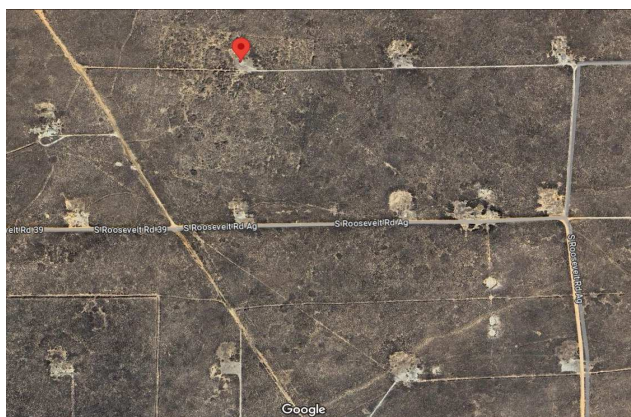
Well information

ID #: 30-041-10567

Coordinates: 33.69118, -103.59434

Name: James McFarland #004

Surface Location: Roosevelt County



Measurement notes

Device used: VentMedic #DC9447

Test operator: Jay Kitowski

Gas sample taken from well: 6/15/24 15:00

VentMedic connected to well: 6/15/24 15:02

*Continuous monitoring of well flowrate, pressure,
and temperature*

Hourly measurement of weather data

VentMedic disconnected from well: 6/17/24 10:58

Notes: Test run from Saturday until Monday

Gas sample delivered to laboratory: 6/18/24

Laboratory Name/Location: Laboratory Services / Hobbs, NM



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Measurement data

Wellhead pressure (kPa gage)*: less than detection limit (<10 kPa)

Average flow rate (L/min): 0.025

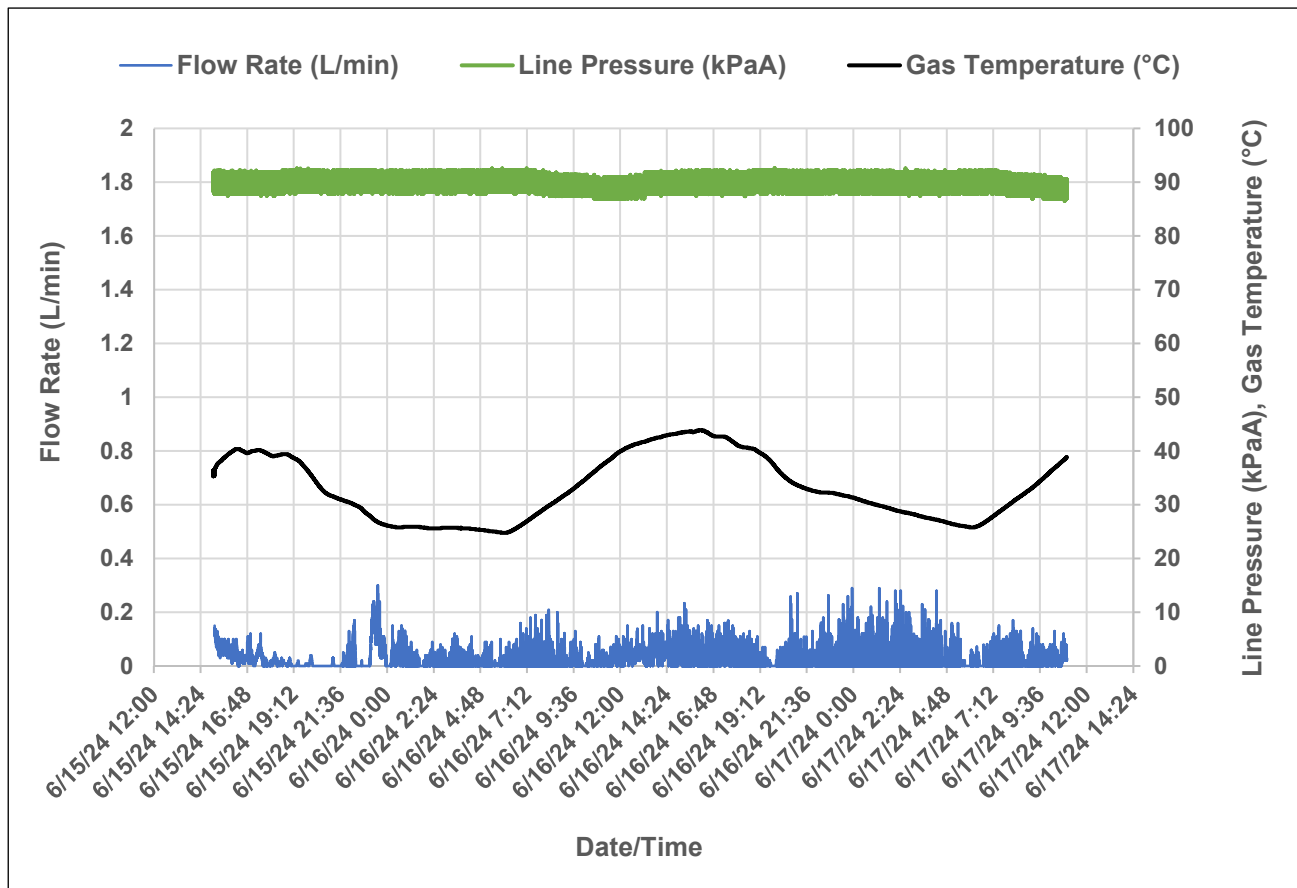
Average methane mass flow rate (g/hr)

using methane % from lab analysis: 0.01

Methane mass flowrate calculation

Variable	Unit	Value
Pressure (P)	kPaA	Measured from the Unit
Volumetric flow (V)	L gas/min	Measured from the Unit
% methane	% (methane/gas)	Measured from Unit or sample
Temperature (T)	Kelvin	Measured from the Unit
Gas constant (R)	Atmosphere·L/(mole·Kelvin)	0.0821
Molecular weight of methane (Mw)	g/mole	16.04

$$\text{Mass flow of methane } \left(\frac{g}{hr} \right) = \frac{\%, \text{methane}}{100\%} * V * P * \frac{Mw}{R T} * \frac{60}{101.3}$$



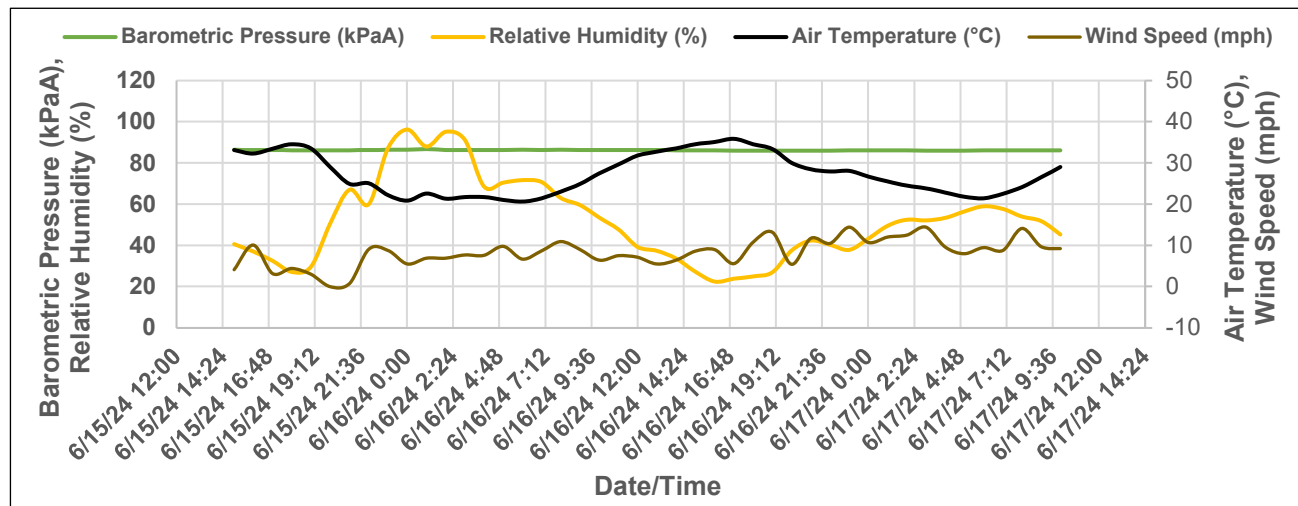


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Weather data

Precipitation during measurement period (in): 0.0



Date and Time	Air Temperature (°C)	Relative Humidity (%)	Barometric Pressure (kPaA)	Wind Speed (mph)
6/15/2024 15:00	33.1	40.6	86.35	4.1
6/15/2024 16:00	32.3	37.0	86.29	10.1
6/15/2024 17:00	33.4	32.5	86.22	3.2
6/15/2024 18:00	34.6	27.2	86.18	4.4
6/15/2024 19:00	33.5	29.6	86.18	3.0
6/15/2024 20:00	29.1	50.5	86.18	0.0
6/15/2024 21:00	24.9	67.0	86.18	0.8
6/15/2024 22:00	25.1	60.0	86.29	9.1
6/15/2024 23:00	22.2	87.2	86.35	8.8
6/16/2024 0:00	20.8	96.2	86.42	5.5
6/16/2024 1:00	22.6	87.9	86.73	6.9
6/16/2024 2:00	21.3	95.1	86.29	6.9
6/16/2024 3:00	21.7	91.2	86.29	7.7
6/16/2024 4:00	21.7	68.5	86.29	7.6
6/16/2024 5:00	21.1	70.5	86.32	9.8
6/16/2024 6:00	20.6	71.6	86.35	6.7
6/16/2024 7:00	21.4	70.7	86.32	8.7
6/16/2024 8:00	23.1	63.0	86.35	10.9
6/16/2024 9:00	24.9	59.6	86.32	9.0
6/16/2024 10:00	27.4	53.5	86.29	6.4
6/16/2024 11:00	29.6	47.8	86.29	7.5
6/16/2024 12:00	31.8	39.3	86.29	7.1
6/16/2024 13:00	32.7	37.4	86.22	5.5
6/16/2024 14:00	33.6	33.6	86.18	6.4
6/16/2024 15:00	34.6	27.3	86.12	8.6



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(Continued)

Date and Time	Air Temperature (°C)	Relative Humidity (%)	Barometric Pressure (kPaA)	Wind Speed (mph)
6/16/2024 16:00	35.1	22.5	86.05	9.0
6/16/2024 17:00	35.8	23.8	86.01	5.6
6/16/2024 18:00	34.6	25.0	85.91	10.8
6/16/2024 19:00	33.4	26.9	85.91	13.2
6/16/2024 20:00	30.1	37.5	85.91	5.4
6/16/2024 21:00	28.4	42.4	85.98	11.7
6/16/2024 22:00	27.9	40.3	86.01	10.5
6/16/2024 23:00	28.1	37.8	86.08	14.4
6/17/2024 0:00	26.7	43.3	86.08	10.7
6/17/2024 1:00	25.5	49.5	86.05	12.0
6/17/2024 2:00	24.5	52.5	86.05	12.5
6/17/2024 3:00	23.8	52.1	86.01	14.4
6/17/2024 4:00	22.8	53.3	85.98	9.6
6/17/2024 5:00	21.8	56.5	85.98	8.0
6/17/2024 6:00	21.4	59.0	86.05	9.5
6/17/2024 7:00	22.5	57.7	86.05	8.8
6/17/2024 8:00	24.2	54.0	86.08	14.1
6/17/2024 9:00	26.5	51.8	86.05	9.7
6/17/2024 10:00	29.0	45.3	86.05	9.2



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575.397.3713 2609 W Marland Hobbs NM 88240

C6+ Gas Analysis Report

21413G		30-041-10567		JAMES FARLAND #004	
Sample Point Code		Sample Point Name		Sample Point Location	
Laboratory Services		2024092595		TEDLAR BAG	
Source Laboratory		Lab File No		Container Identity	
USA		USA		USA	
District		Area Name		Field Name	
Jun 15, 2024 15:00		Jun 1, 2024		Jun 18, 2024 10:29	
Date Sampled		Date Effective		Date Received	
Jun 18, 2024		Jun 18, 2024		Jun 18, 2024	
Date Reported		Date Reported		Date Reported	
Luis		Luis		Luis	
Ambient Temp (°F)		Flow Rate (Mcf)		Analyst	
Press PSI @ Temp °F		Source Conditions		Source Conditions	
TS-Nano		NG		NG	
Operator		Lab Source Description		Lab Source Description	

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	98.6190	98.61986	
CO2 (CO2)	0.2320	0.23172	
Methane (C1)	0.9640	0.96356	
Ethane (C2)	0.0870	0.08652	0.0230
Propane (C3)	0.0300	0.03049	0.0080
I-Butane (IC4)	0.0000	0	0.0000
N-Butane (NC4)	0.0000	0	0.0000
I-Pentane (IC5)	0.0000	0	0.0000
N-Pentane (NC5)	0.0000	0	0.0000
Hexanes Plus (C6+)	0.0680	0.06785	0.0300
TOTAL	100.0000	100.0000	0.0610

Gross Heating Values (Real, BTU/ft³)

14.696 PSI @ 60.00 Å°F	14.73 PSI @ 60.00 Å°F
Dry	Saturated
15.6	16.2

Calculated Total Sample Properties

GPA2145-16 *Calculated at Contract Conditions

Relative Density Real	Relative Density Ideal
0.9661	0.9662
Molecular Weight	
27.9860	

C6+ Group Properties

Assumed Composition

C6 - 60.000%	C7 - 30.000%	C8 - 10.000%
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Field H2S

0 PPM

Method(s): Gas C6+ - GPA 2261, Extended Gas - GPA 2286, Calculations - GPA 2172

Analyzer Information			
Device Type:	Gas Chromatograph	Device Make:	Shimadzu
Device Model:	GC-2014	Last Cal Date:	Jun 3, 2024

PROTREND STATUS:
Passed By Validator on Jun 18, 2024

DATA SOURCE:
Imported

PASSED BY VALIDATOR REASON:
Close enough to be considered reasonable.

VALIDATOR:
Ashley Russell

VALIDATOR COMMENTS:
OK



LABORATORY SERVICES
Natural Gas Analysis

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

Relinquished by Jay Ktowski	Date: 6/18/24	Received by: Jess Shepker	Phone Result: ☐ Yes ☐ No Add'l Phone: ☐ Yes ☐ No
Time: 10:29		Email Result: X Yes ☐ No jstormont@ts-nano.com	
Relinquished by	Date:	Received by:	REMARKS:
Time:			
Deliver by: (circle one)	Sample Condition		Checked by
(Sampler) - UPS - Bus - other:	Cool	Intact	(Initials)
	Yes ☐	Yes ☐	
	No ☐	No ☐	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

DEFINITIONS

Action 370133

DEFINITIONS

Operator: RIDGEWAY ARIZONA OIL CORP. 575 N. Dairy Ashford Houston, TX 77079	OGRID: 164557
	Action Number: 370133
	Action Type: [UF-OMA] Pre-Plug Methane Monitoring (UF-OMA-MMA)

DEFINITIONS

The Orphan Well Mitigation Activity (OMA) forms are a subset of the OCD's forms exclusively designed for activities related to State of New Mexico's contracted plugging and reclamation activities. Specifically, these forms are used for orphan wells or associated facilities which are in a "Reclamation Fund Approved" status. This status represents wells or facilities where the OCD has acquired a hearing order allowing the OCD to perform plugging or reclamation on wells and associated facilities that no longer have a viable operator to perform the necessary work. These forms are not to be utilized for any other purpose.

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QUESTIONS

Action 370133

QUESTIONS

Operator: RIDGEWAY ARIZONA OIL CORP. 575 N. Dairy Ashford Houston, TX 77079	OGRID: 164557
	Action Number: 370133
	Action Type: [UF-OMA] Pre-Plug Methane Monitoring (UF-OMA-MMA)

QUESTIONS

Prerequisites	
[OGRID] Well Operator	[164557] RIDGEWAY ARIZONA OIL CORP.
[API] Well Name and Number	[30-041-10567] JAMES MCFARLAND #004
Well Status	Active

Monitoring Event Information	
<i>Please answer all the questions in this group.</i>	
Reason For Filing	Pre-Plug Methane Monitoring
Date of monitoring	06/15/2024
Latitude	33.69118
Longitude	-103.59434

Monitoring Event Details	
<i>Please answer all the questions in this group.</i>	
Flow rate in cubic meters per day (m³/day)	0.04
Test duration in hours (hr)	28.1
Average flow temperature in degrees Celsius (°C)	34.2
Average gauge flow pressure in kilopascals (kPag)	3.9
Methane concentration in part per million (ppm)	9,640
Methane emission rate in grams per hour (g/hr)	0.01
Testing Method	Steady State

Monitoring Contractor	
<i>Please answer all the questions in this group.</i>	
Name of monitoring contractor	TS-Nano, Inc.