



Orphan Well Pre Plugging Methane Quantification Report

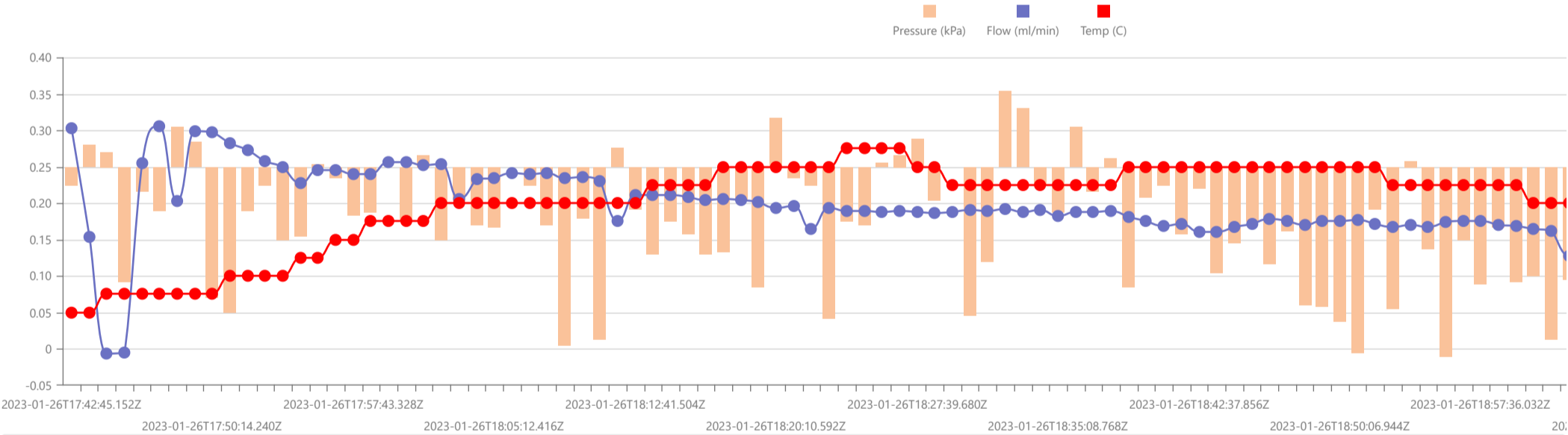
Start Date: Wed Jan 25 2023 20:56:32 GMT+0000 (Coordinated Universal Time) End Date: Thu Jan 26 2023 19:23:48 GMT+0000 (Coordinated Universal Time) Device: VB100-0052 Well Licensee: 30-005-28027 Well Name: Cato San Andres Unit 520 UWI: 30-005-28027 Well License Number: 30-005-28027 Surface Location: State of NM Bottom Hole Location: Unknown	Test Operator: Sean O. Jacobson Authorized By: State of NM Test Reason: IJJA Pre Plugging Scope Of Work: 12 hour AFE Number: 52100-00000073108 GPS: 33.63788,-103.84123 Notes: GTG Prepared By: Curtis Shuck, QMS
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Flow / Pressure Test

Flow Duration 1 hrs 39 minutes Duration	Average Flowrate 0.1892 m3/d	Average Pressure -0.3474 kPag	Average Flow Temperature 11.8542 °C	Average CH4 Mass 0.03 g/hr CH4 Concentration 4,950 ppm
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Methane Calculation: 717 grams CH4 per cubic meter (717 g/m³ x 0.1892 m³/day = 135.66 g/day total /24 = 5.65 g/hour x 0.00495 (methane concentration) = **0.03 g/hour CH4**). **Methane, gas** weighs 0.000717 *gram per cubic centimeter* or 0.717 *kilgram per cubic meter*, i.e. density of *methane, gas* is equal to 0.717 kg/m³; at 0°C (32°F or 273.15K) at standard atmospheric pressure. In imperial or US customary measurement system, the density is equal to 0.0448 *pound per cubic foot* [lb/ft³], or 0.0004144 *ounce per cubic inch* [oz/inch³].

Flow / Pressure / Temperature Timeseries



#	Date	Note
1	2023-09-23	ces: on location for post plug sampling and quantification. Non-detect with Field Gas. Rig up Semtech High Flow for 10 min test. Collect gas sample. Place green ribbon. WILDCAT OUT!
2	2023-01-26	Arrived 12:21pm January 26th, 2023. Rigged down ventbuster then secured test location.
3	2023-01-25	Arrived 1:34pm January 25th, 2023. Conducted field gas analysis then collected gas sample. Rigged up ventbuster #52 for flow testing.

Weather in Roswell, January 25

Weather Forecast for January 25 in Roswell, New Mexico - temperature, wind, atmospheric pressure, humidity and precipitations. Detailed hourly weather chart.

January 23	January 24	Select date:	January 26	January 27
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January 25, 2023

	Atmospheric conditions and temperature °F	RealFeel °F	Atmospheric pressure inHg	Wind speed mph	Humidity
Night	+32°	+27°	26.4	▲ NW 4.7	68%
Morning	+30°	+25°	26.5	▼ N 4	65%
Day	+43°	+36°	26.5	▲ NW 12.8	22%
Evening	+36°	+30°	26.5	▲ NE 4.9	53%

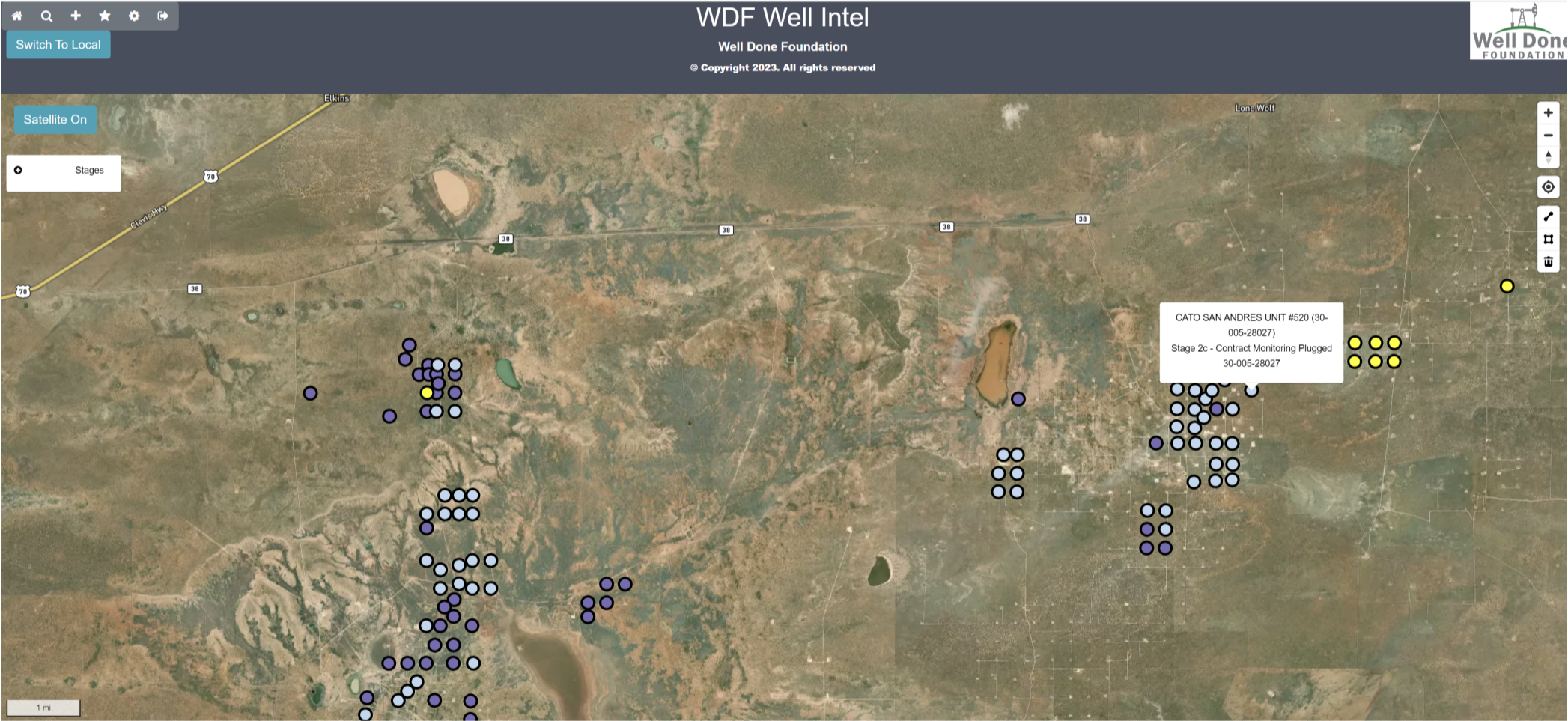
Weather in Roswell, January 26

Weather Forecast for January 26 in Roswell, New Mexico - temperature, wind, atmospheric pressure, humidity and precipitations. Detailed hourly weather chart.

January 24	January 25	Select date:	January 27	January 28
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January 26, 2023

	Atmospheric conditions and temperature °F	RealFeel °F	Atmospheric pressure inHg	Wind speed mph	Humidity
Night	+28°	+21°	26.6	▲ NW 4.9	82%
Morning	+25°	+19°	26.7	▲ NW 3.6	85%
Day	+41°	+37°	26.7	▼ SW 7.8	32%
Evening	+36°	+28°	26.6	▼ SW 7.8	53%





Test Report

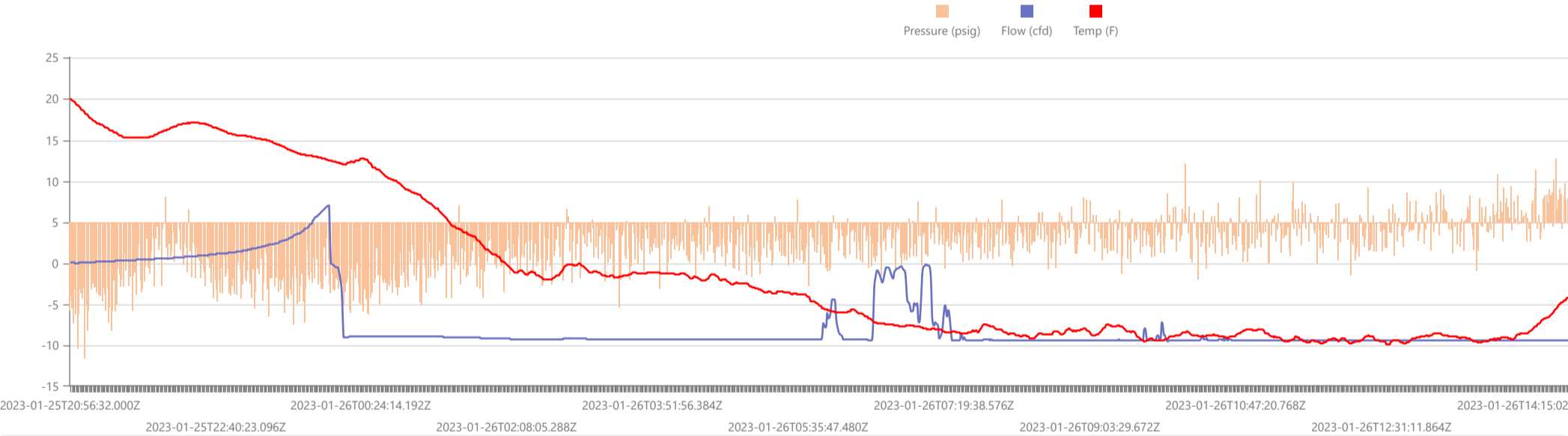
Start Date: Wed Jan 25 2023 20:56:32 GMT+0000 (Coordinated Universal Time)	Test Operator: Sean O. Jacobson
End Date: Thu Jan 26 2023 19:23:48 GMT+0000 (Coordinated Universal Time)	Authorized By: State of NM
Device: VB100-0052	Test Reason: IJJA Pre Plugging
Well Licensee: 30-005-28027	Scope Of Work: 12 hour
Well Name: Cato San Andres Unit 520	AFE Number: 52100-00000073108
UWI: 30-005-28027	GPS: 33.63788,-103.84123
Well License Number: 30-005-28027	Notes: GTG
Surface Location: State of NM	Prepared By: Curtis Shuck, QMS
Bottom Hole Location: Unknown	

Flow / Pressure Test

Flow Duration 22 hrs 26 minutes Duration	Average Flowrate -6.0416 cfd	Average Pressure -0.0494 psig	Average Flow Temperature 32.8495 °F	Average CH4 Mass -0.03 g/hr
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Methane Calculation: 717 grams CH4 per cubic meter (717 g/m³ x -0.1711 m³/day = -122.68 g/day total /24 = -5.11 g/hour x 0.00495 (methane concentration) = **-0.03 g/hour CH4**). **Methane, gas** weighs 0.000717 *gram per cubic centimeter* or 0.717 *kilgram per cubic meter*, i.e. density of *methane, gas* is equal to 0.717 kg/m³; at 0°C (32°F or 273.15K) at standard atmospheric pressure. In imperial or US customary measurement system, the density is equal to 0.0448 *pound per cubic foot* [lb/ft³], or 0.0004144 *ounce per cubic inch* [oz/inch³].

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15896G	CSAU #520 Pre Plug	CSA #520	
Sample Point Code	Sample Point Name	Sample Point Location	
Laboratory Services	2023063335	Tedlar Bag	SOJ - Spot
Source Laboratory	Lab File No	Container Identity	Sampler
USA	USA	USA	New Mexico
District	Area Name	Field Name	Facility Name
Jan 25, 2023 13:39	Jan 25, 2023 13:39	Jan 27, 2023 11:08	Jan 30, 2023
Date Sampled	Date Effective	Date Received	Date Reported
System Administrator			
Ambient Temp (°F)	Flow Rate (Mcf)	Analyst	Press PSI @ Temp °F Source Conditions
Well Done Foundation		NG	
Operator		Lab Source Description	

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	97.9590	97.96	
CO2 (CO2)	0.1900	0.19	
Methane (C1)	0.4950	0.495	
Ethane (C2)	0.3770	0.377	0.1010
Propane (C3)	0.3520	0.352	0.0970
I-Butane (IC4)	0.0490	0.049	0.0160
N-Butane (NC4)	0.1200	0.12	0.0380
I-Pentane (IC5)	0.0420	0.042	0.0150
N-Pentane (NC5)	0.0430	0.043	0.0160
Hexanes Plus (C6+)	0.3730	0.373	0.1620
TOTAL	100.0000	100.0010	0.4450

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:	Jan 23, 2023

Source	Date	Notes
Brooke Rush	Jan 31, 2023 9:52 pm	Methane = 4,950 PPM

Gross Heating Values (Real, BTU/ft³)			
14.696 PSI @ 60.00 Å°F	14.73 PSI @ 60.00 Å°F		
Dry	Saturated	Dry	Saturated
48.8	48.8	48.9	48.9

Calculated Total Sample Properties	
GPA2145-16 *Calculated at Contract Conditions	
Relative Density Real	Relative Density Ideal
0.9799	0.9799
Molecular Weight	
28.3804	

C6+ Group Properties		
Assumed Composition		
C6 - 60.000%	C7 - 30.000%	C8 - 10.000%

Field H2S
0 PPM

PROTREND STATUS:

Passed By Validator on Jan 31, 2023

DATA SOURCE:

Imported

PASSED BY VALIDATOR REASON:

First sample taken @ this point, composition looks reasonable

VALIDATOR:

Brooke Rush

VALIDATOR COMMENTS:

OK

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 278284

DEFINITIONS

Operator: CANO PETRO OF NEW MEXICO, INC. 801 Cherry Street Fort Worth, TX 76102	OGRID: 248802
	Action Number: 278284
	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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Energy, Minerals and Natural Resources
Oil Conservation Division
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QUESTIONS

Action 278284

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Operator: CANO PETRO OF NEW MEXICO, INC. 801 Cherry Street Fort Worth, TX 76102	OGRID: 248802
	Action Number: 278284
	Action Type: [UF-OMA] Pre-Plug Methane Monitoring (UF-OMA-MMA)

QUESTIONS

Prerequisites	
[OGRID] Well Operator	[248802] CANO PETRO OF NEW MEXICO, INC.
[API] Well Name and Number	[30-005-28027] CATO SAN ANDRES UNIT #520
Well Status	Reclamation Fund Approved

Monitoring Event Information

Please answer all the questions in this group.

Reason For Filing	Pre-Plug Methane Monitoring
Date of monitoring	01/25/2023
Latitude	33.63788
Longitude	-103.84123

Monitoring Event Details

Please answer all the questions in this group.

Flow rate in cubic meters per day (m³/day)	0.19
Test duration in hours (hr)	2.4
Average flow temperature in degrees Celsius (°C)	11.8
Average gauge flow pressure in kilopascals (kPag)	-0.3
Methane concentration in part per million (ppm)	4,950
Methane emission rate in grams per hour (g/hr)	0.03
Testing Method	Steady State

Monitoring Contractor

Please answer all the questions in this group.

Name of monitoring contractor	Well Done New Mexico LLC
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