



Orphan Well Pre Plugging Methane Quantification Report

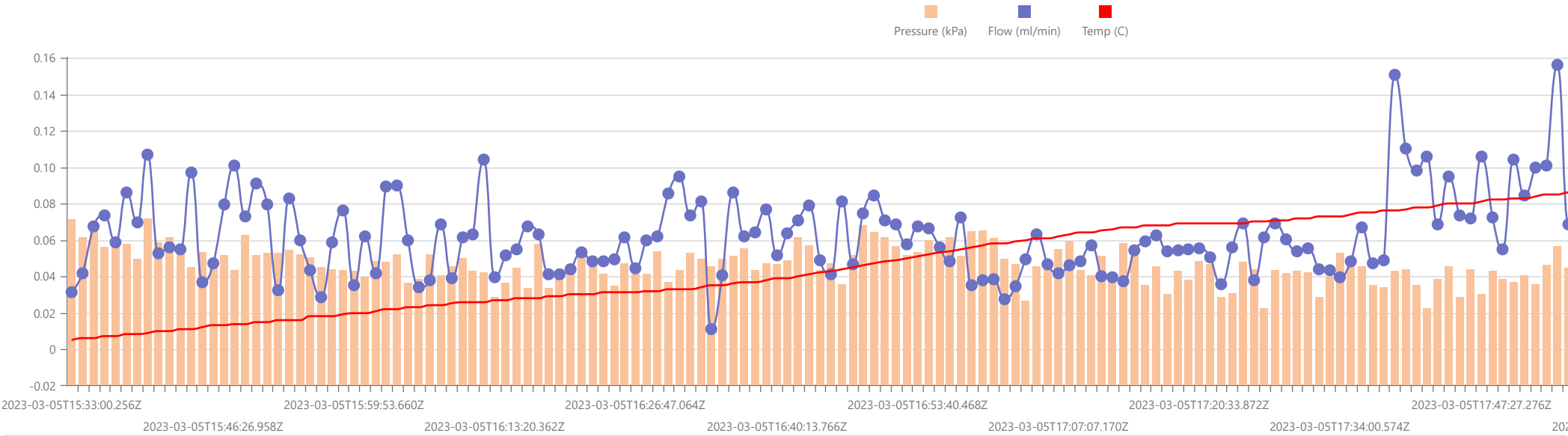
Start Date: Sat Mar 04 2023 17:45:44 GMT+0000 (Coordinated Universal Time) End Date: Sun Mar 05 2023 18:35:03 GMT+0000 (Coordinated Universal Time) Device: VB100-0044 Well Licensee: 30-005-28029 Well Name: Cato San Andres 561 UWI: 30-005-28029 Well License Number: 30-005-28029 Surface Location: State 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: 33.62742,-103.84582 Notes: GTG Prepared By: Curtis Shuck, QMS
---	--

Flow / Pressure Test

Flow Duration 3 hrs 0 minutes Duration	Average Flowrate 0.0635 m3/d	Average Pressure 3.1837 kPag	Average Flow Temperature 19.5909 °C	Average CH4 Mass 0.09 g/hr CH4 Concentration 49,180 ppm
--	------------------------------------	------------------------------------	---	--

Methane Calculation: 717 grams CH4 per cubic meter (717 g/m³ x 0.0635 m³/day = 45.53 g/day total /24 = 1.90 g/hour x 0.04918 (methane concentration) = **0.09 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 monitoring. Field gas is non detect. Collect gas sample. Rig up Semtech High Flow. Green Ribbon. Wildcat OUT!
2	2023-03-05	Arrived 11:34am 3/5/2023. Rigged down flow test. SP
3	2023-03-04	Arrived 10:42am 3/4/2023. Stopped flow test. Flipped to high flow. Started new test.
4	2023-03-03	Arrived 11:00am 3/3/2023. Rigged up Ventbuster #44 for flow testing.

Weather in Roswell, March 4

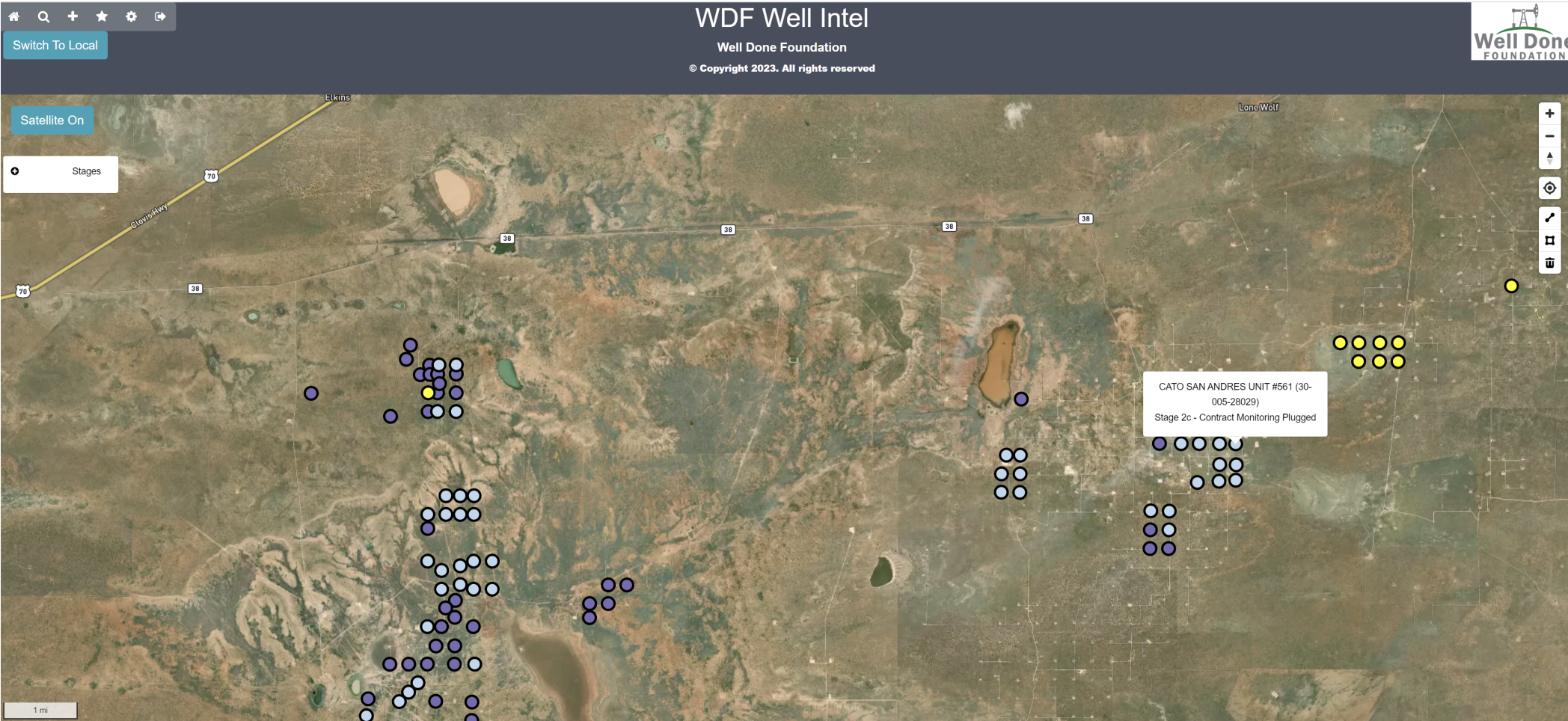
Weather Forecast for March 4 in Roswell, New Mexico - temperature, wind, atmospheric pressure, humidity and precipitations. Detailed hourly weather chart.

March 02	March 03	Select date: 📅	March 05	March 06
March 04, 2023				
Atmospheric conditions and temperature °F	RealFeel °F	Atmospheric pressure inHg	Wind speed mph	Humidity
Night 🌙 +45°	+39°	26.1	⬆️ NW 9.4	27%
Morning 🌤️ +36°	+30°	26.3	⬇️ N 5.8	43%
Day 🌤️ +63°	+63°	26.3	⬇️ SE 8.3	12%
Evening 🌙 +61°	+61°	26.3	⬆️ S 11.6	14%

Weather in Roswell, March 5

Weather Forecast for March 5 in Roswell, New Mexico - temperature, wind, atmospheric pressure, humidity and precipitations. Detailed hourly weather chart.

March 03	March 04	Select date: 📅	March 06	March 07
March 05, 2023				
Atmospheric conditions and temperature °F	RealFeel °F	Atmospheric pressure inHg	Wind speed mph	Humidity
Night 🌙 +43°	+39°	26.2	⬇️ SW 4.9	21%
Morning 🌤️ +39°	+34°	26.2	⬆️ S 7.8	30%
Day 🌤️ +77°	+77°	26.3	⬇️ SW 14.3	7%
Evening 🌙 +64°	+64°	26.3	⬆️ W 9.6	9%





Test Report

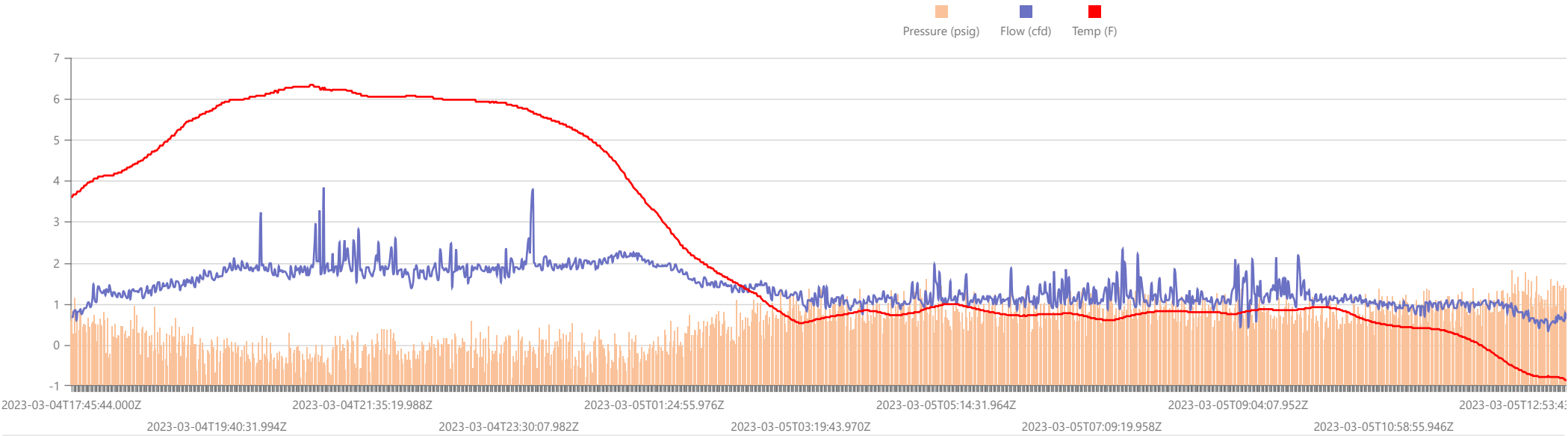
Start Date: Sat Mar 04 2023 17:45:44 GMT+0000 (Coordinated Universal Time) End Date: Sun Mar 05 2023 18:35:03 GMT+0000 (Coordinated Universal Time) Device: VB100-0044 Well Licensee: 30-005-28029 Well Name: Cato San Andres 561 UWI: 30-005-28029 Well License Number: 30-005-28029 Surface Location: State 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: 33.62742,-103.84582 Notes: GTG Prepared By: Curtis Shuck, QMS
---	--

Flow / Pressure Test

Flow Duration 24 hrs 48 minutes Duration	Average Flowrate 1.4453 cfd	Average Pressure 0.5084 psig	Average Flow Temperature 58.2467 °F	Average CH4 Mass 0.06 g/hr
--	-----------------------------------	------------------------------------	---	-------------------------------

Methane Calculation: 717 grams CH4 per cubic meter (717 g/m³ x 0.0409 m³/day = 29.33 g/day total /24 = 1.22 g/hour x 0.04918 (methane concentration) = **0.06 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 monitoring. Field gas is non detect. Collect gas sample. Rig up Semtech High Flow. Green Ribbon. Wildcat OUT!
2	2023-03-05	Arrived 11:34am 3/5/2023. Rigged down flow test. SP
3	2023-03-04	Arrived 10:42am 3/4/2023. Stopped flow test. Flipped to high flow. Started new test.
4	2023-03-03	Arrived 11:00am 3/3/2023. Rigged up Ventbuster #44 for flow testing.





16223G	CSAU #561 Pre Plug	CSA #561	
Sample Point Code	Sample Point Name	Sample Point Location	
Laboratory Services	2023065367	Tedlar Bag	SOJ - Spot
Source Laboratory	Lab File No	Container Identity	Sampler
USA	USA	USA	New Mexico
District	Area Name	Field Name	Facility Name
Mar 3, 2023 11:05	Mar 3, 2023 11:05	Mar 9, 2023 11:42	Mar 9, 2023
Date Sampled	Date Effective	Date Received	Date Reported
Ambient Temp (°F)	Flow Rate (Mcf)	Luis	Press PSI @ Temp °F
		Analyst	Source Conditions
Well Done Foundation			NG
Operator			Lab Source Description

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	89.7950	89.79486	
CO2 (CO2)	0.3630	0.36333	
Methane (C1)	4.9180	4.91828	
Ethane (C2)	1.4420	1.44163	0.3860
Propane (C3)	1.4970	1.49709	0.4120
I-Butane (IC4)	0.2640	0.26393	0.0860
N-Butane (NC4)	0.6130	0.61318	0.1930
I-Pentane (IC5)	0.2630	0.26271	0.0960
N-Pentane (NC5)	0.2230	0.22332	0.0810
Hexanes Plus (C6+)	0.6220	0.62167	0.2700
TOTAL	100.0000	100.0000	1.5240

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:	Feb 13, 2023

Source	Date	Notes
Brooke Rush	Mar 13, 2023 9:14 am	Methane = 49,180 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
193.5	191.000	193.9	191.4

Calculated Total Sample Properties	
GPA2145-16 *Calculated at Contract Conditions	
Relative Density Real	Relative Density Ideal
0.9891	0.9888
Molecular Weight	
28.6371	

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

Field H2S
0 PPM

PROTREND STATUS: Passed By Validator on Mar 13, 2023
DATA SOURCE: Imported

PASSED BY VALIDATOR REASON:
 Close enough to be considered 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 278316

DEFINITIONS

Operator: CANO PETRO OF NEW MEXICO, INC. 801 Cherry Street Fort Worth, TX 76102	OGRID: 248802
	Action Number: 278316
	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.

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

QUESTIONS

Action 278316

QUESTIONS

Operator: CANO PETRO OF NEW MEXICO, INC. 801 Cherry Street Fort Worth, TX 76102	OGRID: 248802
	Action Number: 278316
	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	[30-005-28029] CATO SAN ANDRES UNIT #561
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	03/04/2023
Latitude	33.62742
Longitude	-103.84582

Monitoring Event Details*Please answer all the questions in this group.*

Flow rate in cubic meters per day (m³/day)	0.64
Test duration in hours (hr)	3.0
Average flow temperature in degrees Celsius (°C)	19.5
Average gauge flow pressure in kilopascals (kPag)	3.1
Methane concentration in part per million (ppm)	49,180
Methane emission rate in grams per hour (g/hr)	0.09
Testing Method	Steady State

Monitoring Contractor*Please answer all the questions in this group.*

Name of monitoring contractor	Well Done New Mexico LLC
-------------------------------	--------------------------