



## Certificate of Analysis

Number: 6030-21110261-001A

Artesia Laboratory

200 E Main St.

Artesia, NM 88210

Phone 575-746-3481

Chandler Montgomery  
Occidental Petroleum  
1502 W Commerce Dr.  
Carlsbad, NM 88220

Dec. 01, 2021

Field: Sand Dunes  
Station Name: Sand Dunes CTB Production 2  
Station Number: 17012P  
Station Location: CTB  
Sample Point: Meter  
Formation: Monthly  
County: Eddy, NM  
Type of Sample: : Spot-Cylinder  
Heat Trace Used: No  
Sampling Method: : Fill and Purge  
Sampling Company: : SPL

Sampled By: Scott Beasley  
Sample Of: Gas Spot  
Sample Date: 11/23/2021 10:21  
Sample Conditions: 77.7 psig, @ 62.5 °F Ambient: 61 °F  
Effective Date: 11/23/2021 10:21  
Method: GPA-2261M  
Cylinder No: 1111-002678  
Instrument: 70142339 (Inficon GC-MicroFusion)  
Last Inst. Cal.: 11/15/2021 0:00 AM  
Analyzed: 12/01/2021 14:47:44 by ERG

## Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.65 psia
Hydrogen Sulfide	NIL	NIL	NIL	
Nitrogen	1.720	1.73503	2.237	
Carbon Dioxide	1.746	1.76105	3.568	
Methane	75.250	75.89815	56.047	
Ethane	11.338	11.43562	15.828	3.052
Propane	5.503	5.55083	11.267	1.526
Iso-Butane	0.699	0.70513	1.887	0.230
n-Butane	1.672	1.68661	4.512	0.531
Iso-Pentane	0.353	0.35584	1.182	0.130
n-Pentane	0.377	0.38035	1.263	0.138
Hexanes	0.214	0.21574	0.856	0.089
Heptanes	0.170	0.17177	0.792	0.079
Octanes	0.080	0.08109	0.426	0.041
Nonanes Plus	0.023	0.02279	0.135	0.013
	99.145	100.00000	100.000	5.829

## Calculated Physical Properties

Calculated Molecular Weight	Total	C9+
Compressibility Factor	21.72	128.26
Relative Density Real Gas	0.9963	
	0.7526	4.4283

## GPA 2172 Calculation:

Calculated Gross BTU per ft<sup>3</sup> @ 14.65 psia & 60°F

Real Gas Dry BTU	1243.1	6974.4
Water Sat. Gas Base BTU	1221.9	6852.4
Ideal, Gross HV - Dry at 14.65 psia	1238.5	6974.4
Ideal, Gross HV - Wet	1216.9	6852.4

Comments: H2S Field Content 0 ppm  
Mcf/day 24561.39

*Jesus Escobedo*

*Carly Retana*

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

**UPSET FLARING EVENT SPECIFIC JUSTIFICATIONS FORM****Facility:** Sand Dunes South Corridor CTB**Flare Date:** 08/19/2022**Duration of event:** 15 Minutes**MCF Flared:** 110**Start Time:** 12:45 PM**End Time:** 01:00 PM**Cause:** Sand Dunes East CGL > Automation Fault > All Gas Lift Compressors > Shut Down**Method of Flared Gas Measurement:** Gas Flare Meter**Comments:**

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**1. Reason why this event was beyond Operator's control:**

This emissions event was caused by the unforeseen, unexpected, sudden, and unavoidable breakdown of equipment or process that was beyond the owner/operator's control and did not stem from activity that could have been foreseen and avoided, and could not have been avoided by good design, operation, and preventative maintenance practices. Oxy engages in respectable and good facility operation practices while also maintaining its continuous facility equipment preventative maintenance program. In this case, this flaring event at the Sand Dunes South Corridor CTB was triggered by sudden and unexpected compression automation issues at Sand Dunes East CGL. Sand Dunes East CGL had an automation fault that suddenly and unexpectedly shut down all four gas lift compressors and triggered flaring at the Sand Dunes South Corridor CTB, when the gas sales line started pressuring up with the excess gas. This caused the CTB facility pressures to increase to its flare setpoint.

**2. Steps Taken to limit duration and magnitude of venting or flaring:**

It is OXY's policy to route all stranded gas to a flare during an unforeseen and unavoidable emergency or malfunction, as the part of the overall process or steps to take to limit duration and magnitude of flaring. Oxy personnel are in the field 24/7 and can physically see when we are flaring which in turn are communicated to additional Oxy field personnel. Internal OXY procedures ensure that upon gas compressor unit and/or multiple unit shutdown, increased sensor pressure alarms, etc., field production technician personnel are promptly notified, and are instructed to assess the issue as soon as possible to take prompt corrective action and minimize emissions. Oxy field production technician personnel must assess whether the issue or circumstance is due to damage and repair is needed, or whether there are other reasons for its cause. In this case, this flaring event at the Sand Dunes South Corridor CTB was triggered by sudden and unexpected compression automation issues at Sand Dunes East CGL. Sand Dunes East CGL had an automation fault that suddenly and unexpectedly shut down all four gas lift compressors and triggered flaring at the Sand Dunes South Corridor CTB, when the gas sales line started pressuring up with the excess gas. This caused the CTB facility pressures to increase to its flare setpoint. This is an unmanned facility, and an Oxy production tech was arriving at the Sand Dunes East CGL when the alarms were received. Once all gas lift compression equipment reached maximized operation optimization did flaring cease at the CTB. OXY made every effort to control and minimize emissions as much as possible.

**3. Corrective Actions taken to eliminate the cause and reoccurrence of venting or flaring:**

Oxy is limited in its ability to take any corrective actions to eliminate the cause and potential reoccurrence of compressor malfunctions, sale gas compression or gas lift compression, as notwithstanding proper gas compressor design and operation, various forms of mechanical or technical issues can be sudden, reasonably unforeseeable and unexpected which can cause compressor unit malfunctions to occur without warning or advance notice. Gas lift compressor engines are designed to operate in a precise manner and when any type of malfunction occurs, it disrupts the gas lift compressor's operating manner and cuts off engine power, which in turn, prompts an automatic shutdown of an operational unit. Oxy continually strives to maintain and operate its facility equipment in a manner consistent with good practices for minimizing emissions and reducing the number of emission events. Oxy has a strong and positive compression equipment preventative maintenance program in place. The only actions that Oxy can take and handle that is within its control, is to keep continue with its compression equipment preventative maintenance program for this facility.

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

DEFINITIONS

Action 140011

DEFINITIONS

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 140011
	Action Type: [C-129] Venting and/or Flaring (C-129)

DEFINITIONS

For the sake of brevity and completeness, please allow for the following in all groups of questions and for the rest of this application: <ul style="list-style-type: none"><li>• this application's operator, hereinafter "this operator";</li><li>• venting and/or flaring, hereinafter "vent or flare";</li><li>• any notification or report(s) of the C-129 form family, hereinafter "any C-129 forms";</li><li>• the statements in (and/or attached to) this, hereinafter "the statements in this";</li><li>• and the past tense will be used in lieu of mixed past/present tense questions and statements.</li></ul>
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QUESTIONS

Action 140011

**QUESTIONS**

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 140011
	Action Type: [C-129] Venting and/or Flaring (C-129)

**QUESTIONS****Prerequisites**

Any messages presented in this section, will prevent submission of this application. Please resolve these issues before continuing with the rest of the questions.

Incident Well	Not answered.
Incident Facility	[fAPP2127048458] Sand Dunes South Corridor CTB

**Determination of Reporting Requirements**

Answer all questions that apply. The Reason(s) statements are calculated based on your answers and may provide additional guidance.

Was this vent or flare caused by an emergency or malfunction	Yes
Did this vent or flare last eight hours or more cumulatively within any 24-hour period from a single event	No
Is this considered a submission for a vent or flare event	Yes, minor venting and/or flaring of natural gas.

An operator shall file a form C-141 instead of a form C-129 for a release that, includes liquid during venting and/or flaring that is or may be a major or minor release under 19.15.29.7 NMAC.

Was there <b>at least 50 MCF</b> of natural gas vented and/or flared during this event	Yes
Did this vent or flare result in the release of <b>ANY</b> liquids (not fully and/or completely flared) that reached (or has a chance of reaching) the ground, a surface, a watercourse, or otherwise, with reasonable probability, endanger public health, the environment or fresh water	No
Was the vent or flare within an incorporated municipal boundary or withing 300 feet from an occupied permanent residence, school, hospital, institution or church in existence	No

**Equipment Involved**

Primary Equipment Involved	Other (Specify)
Additional details for Equipment Involved. Please specify	Emergency Flare > Sand Dunes East CGL > Automation Fault > All Gas Lift Compressors > Shut Down

**Representative Compositional Analysis of Vented or Flared Natural Gas**

Please provide the mole percent for the percentage questions in this group.

Methane (CH4) percentage	76
Nitrogen (N2) percentage, if greater than one percent	2
Hydrogen Sulfide (H2S) PPM, rounded up	0
Carbon Dioxide (CO2) percentage, if greater than one percent	2
Oxygen (O2) percentage, if greater than one percent	0

If you are venting and/or flaring because of Pipeline Specification, please provide the required specifications for each gas.

Methane (CH4) percentage quality requirement	Not answered.
Nitrogen (N2) percentage quality requirement	Not answered.
Hydrogen Sulfide (H2S) PPM quality requirement	Not answered.
Carbon Dioxide (CO2) percentage quality requirement	Not answered.
Oxygen (O2) percentage quality requirement	Not answered.

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QUESTIONS, Page 2

Action 140011

QUESTIONS (continued)

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	Action Number: 140011
	Action Type: [C-129] Venting and/or Flaring (C-129)

QUESTIONS

Date(s) and Time(s)	
Date vent or flare was discovered or commenced	08/19/2022
Time vent or flare was discovered or commenced	12:45 PM
Time vent or flare was terminated	01:00 PM
Cumulative hours during this event	0

Measured or Estimated Volume of Vented or Flared Natural Gas	
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Cause: Other   Other (Specify)   Natural Gas Flared   Released: 110 Mcf   Recovered: 0 Mcf   Lost: 110 Mcf ]
Other Released Details	Not answered.
Additional details for Measured or Estimated Volume(s). Please specify	Gas Flare Meter
Is this a gas only submission (i.e. only significant Mcf values reported)	Yes, according to supplied volumes this appears to be a "gas only" report.

Venting or Flaring Resulting from Downstream Activity	
Was this vent or flare a result of downstream activity	No
Was notification of downstream activity received by this operator	Not answered.
Downstream OGRID that should have notified this operator	Not answered.
Date notified of downstream activity requiring this vent or flare	Not answered.
Time notified of downstream activity requiring this vent or flare	Not answered.

Steps and Actions to Prevent Waste	
For this event, this operator could not have reasonably anticipated the current event and it was beyond this operator's control.	True
Please explain reason for why this event was beyond this operator's control	This emissions event was caused by the unforeseen, unexpected, sudden, and unavoidable breakdown of equipment or process that was beyond the owner/operator's control and did not stem from activity that could have been foreseen and avoided, and could not have been avoided by good design, operation, and preventative maintenance practices. Oxy engages in respectable and good facility operation practices while also maintaining its continuous facility equipment preventative maintenance program. In this case, this flaring event at the Sand Dunes South Corridor CTB was triggered by sudden and unexpected compression automation issues at Sand Dunes East CGL. Sand Dunes East CGL had an automation fault that suddenly and unexpectedly shut down all four gas lift compressors and triggered flaring at the Sand Dunes South Corridor CTB, when the gas sales line started pressuring up with the excess gas. This caused the CTB facility pressures to increase to its flare setpoint.
Steps taken to limit the duration and magnitude of vent or flare	It is OXY's policy to route all stranded gas to a flare during an unforeseen and unavoidable emergency or malfunction, as the part of the overall process or steps to take to limit duration and magnitude of flaring. Oxy personnel are in the field 24/7 and can physically see when we are flaring which in turn are communicated to additional Oxy field personnel. Internal OXY procedures ensure that upon gas compressor unit and/or multiple unit shutdown, increased sensor pressure alarms, etc., field production technician personnel are promptly notified, and are instructed to assess the issue as soon as possible to take prompt corrective action and minimize emissions. Oxy field production technician personnel must assess whether the issue or circumstance is due to damage and repair is needed, or whether there are other reasons for its cause. In this case, this flaring event at the Sand Dunes South Corridor CTB was triggered by sudden and unexpected compression automation issues at Sand Dunes East CGL. Sand Dunes East CGL had an automation fault that suddenly and unexpectedly shut down all four gas lift compressors and triggered flaring at the Sand Dunes South Corridor CTB, when the gas sales line started pressuring up with the excess gas. This caused the CTB facility pressures to increase to its flare setpoint. This is an unmanned facility, and an Oxy production tech was arriving at the Sand Dunes East CGL when the alarms were received. Once all gas lift compression equipment reached maximized operation optimization did flaring cease at the CTB. OXY made every effort to control and minimize emissions as much as possible.
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ACKNOWLEDGMENTS

Action 140011

**ACKNOWLEDGMENTS**

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	Action Number: 140011
	Action Type: [C-129] Venting and/or Flaring (C-129)

**ACKNOWLEDGMENTS**

<input checked="" type="checkbox"/>	I acknowledge that I am authorized to submit a <i>Venting and/or Flaring</i> (C-129) report on behalf of this operator and understand that this report can be a <b>complete</b> C-129 submission per 19.15.27.8 and 19.15.28.8 NMAC.
<input checked="" type="checkbox"/>	I acknowledge that upon submitting this application, I will be creating a new incident file (assigned to this operator) to track any C-129 forms, pursuant to 19.15.27.7 and 19.15.28.8 NMAC and understand that this submission meets the notification requirements of Paragraph (1) of Subsection G and F respectively.
<input checked="" type="checkbox"/>	I hereby certify the statements in this report are true and correct to the best of my knowledge and acknowledge that any false statement may be subject to civil and criminal penalties under the Oil and Gas Act.
<input checked="" type="checkbox"/>	I acknowledge that the acceptance of any C-129 forms by the OCD does not relieve this operator of liability should their operations have failed to adequately investigate, report, and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment.
<input checked="" type="checkbox"/>	I acknowledge that OCD acceptance of any C-129 forms does not relieve this operator of responsibility for compliance with any other applicable federal, state, or local laws and/or regulations.

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CONDITIONS

Action 140011

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	Action Number: 140011
	Action Type: [C-129] Venting and/or Flaring (C-129)

CONDITIONS

Created By	Condition	Condition Date
marialuna2	If the information provided in this report requires an amendment, submit a [C-129] Amend Venting and/or Flaring Incident (C-129A), utilizing your incident number from this event.	8/31/2022