Certificate of Analysis

Number: 6030-22080419-002A

Artesia Laboratory
200 E Main St.
Artesia, NM 88210
Phone 575-746-3481

Paul Martinez
Earthstone
801 Cherry St, Suite 1200
Fort Worth, TX 76102

Aug. 30, 2022

Station Name:	Ram 2-11 1BS Fed Com 10H	Sampled By:	Arnulfo Hererra
Station Number:	89410039	Sample Of:	Gas Spot
Station Location:	Chisholm	Sample Date:	08/26/2022
Sample Point:	Meter Run	Sample Conditions:	114.5 psig, @ 115.4 °F Ambient: 80 °F
Type of Sample:	Spot-Cylinder	Effective Date:	08/26/2022
Heat Trace Used:	N/A	Method:	GPA 2286
Sampling Method:	Fill and Purge	Cylinder No:	1111-007985
Sampling Company:	SPL	Instrument:	6030_GC2 (Agilent GC-7890B)
Analyzed:	08/30/2022 13:11:03 by KNF	Last Inst. Cal.:	08/29/2022 14:11 PM

Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.73 psia		
Hydrogen Sulfide	0.000	0.10000	0.137		GPM TOTAL C2+	8.078
Nitrogen	2.719	2.71200	3.062		GPM TOTAL C3+	4.413
Methane	65.437	65.27800	42.207		GPM TOTAL iC5+	0.919
Carbon Dioxide	3.787	3.77800	6.701			
Ethane	13.676	13.64300	16.534	3.665		
Propane	8.472	8.45100	15.019	2.338		
Iso-butane	0.998	0.99600	2.333	0.328		
n-Butane	2.620	2.61400	6.123	0.828		
Iso-pentane	0.649	0.64700	1.881	0.238		
n-Pentane	0.679	0.67700	1.969	0.247		
Hexanes Plus	1.107	1.10400	4.034	0.434		
	100.144	100.00000	100.000	8.078		

Calculated Physical Properties	Total	C6+
Relative Density Real Gas	0.8605	3.1355
Calculated Molecular Weight	24.81	90.81
Compressibility Factor	0.9953	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.73 psia & 60°F		
Real Gas Dry BTU	1348	4852
Water Sat. Gas Base BTU	1324	4767
Ideal, Gross HV - Dry at 14.73 psia	1341.2	4851.8
Ideal, Gross HV - Wet	1317.9	0.000

Comments: H2S Field Content .1 %

Data reviewed by: Krystle Fitzwater, Laboratory Manager

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

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Sample Point:	Meter Run	Sample Conditions:	114.5 psig, @ 115.4 °F
Type of Sample:	Spot-Cylinder	Method:	GPA 2286
Heat Trace Used:	N/A	Cylinder No:	1111-007985
Sampling Method:	Fill and Purge	Analyzed:	08/30/2022 13:09:41 by KNF
Sampling Company:	SPL		

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.73 psia
Hydrogen Sulfide	0.100	0.137	
Nitrogen	2.712	3.062	
Methane	65.278	42.207	
Carbon Dioxide	3.778	6.701	
Ethane	13.643	16.534	3.665
Propane	8.451	15.019	2.338
Iso-Butane	0.996	2.333	0.328
n-Butane	2.614	6.123	0.828
Iso-Pentane	0.647	1.881	0.238
n-Pentane	0.677	1.969	0.247
i-Hexanes	0.266	0.897	0.106
n-Hexane	0.142	0.490	0.058
Benzene	0.082	0.259	0.023
Cyclohexane	0.111	0.376	0.038
i-Heptanes	0.196	0.722	0.079
n-Heptane	0.042	0.169	0.019
Toluene	0.076	0.281	0.026
i-Octanes	0.123	0.520	0.054
n-Octane	0.011	0.049	0.006
Ethylbenzene	0.010	0.045	0.004
Xylenes	0.013	0.052	0.005
i-Nonanes	0.023	0.116	0.011
n-Nonane	0.004	0.022	0.002
Decanes Plus	0.005	0.036	0.003
	100.000	100.000	8.078

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Type of Sample:	Spot-Cylinder	Method:	GPA 2286
Heat Trace Used:	N/A	Cylinder No:	1111-007985
Sampling Method:	Fill and Purge	Analyzed:	08/30/2022 13:09:41 by KNF
Sampling Company:	SPL		

Calculated Physical Properties	**Total**	**C10+**
Calculated Molecular Weight	24.81	143.45
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.73 psia & 60°F		
Real Gas Dry BTU	1347.6	7720.2
Water Sat. Gas Base BTU	1324.2	7549.9
Relative Density Real Gas	0.8605	4.9528
Compressibility Factor	0.9953	
Ideal, Gross HV - Wet	1317.9	
Ideal, Gross HV - Dry at 14.73 psia	1341.2	
Net BTU Dry Gas - real gas	1227	
Net BTU Wet Gas - real gas	1205	

Comments: H2S Field Content .1 %

Data reviewed by: Krystle Fitzwater, Laboratory Manager

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

Calculations for the total Mcf flared
End Meter Volume – the Begin Meter Volume.

***Composition for the gas has been entered into the question portion of the C-129.
If further back up is needed please let us know and will provide requested data.

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District IV
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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

Operator: Earthstone Operating, LLC 1400 Woodloch Forest; Ste 300 The Woodlands, TX 77380	OGRID: 331165
	Action Number: 183924
	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:

- this application's operator, hereinafter "this operator";
- venting and/or flaring, hereinafter "vent or flare";
- any notification or report(s) of the C-129 form family, hereinafter "any C-129 forms";
- the statements in (and/or attached to) this, hereinafter "the statements in this";
- and the past tense will be used in lieu of mixed past/present tense questions and statements.

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QUESTIONS

Action 183924

QUESTIONS

Operator: Earthstone Operating, LLC 1400 Woodloch Forest; Ste 300 The Woodlands, TX 77380	OGRID: 331165
	Action Number: 183924
	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	*Unavailable.*
Incident Facility	**[fAPP2123755453] BUFFALO WEST 2 STATE COM NE BATTERY**

Determination of Reporting Requirements	
Answer all questions that apply. The Reason(s) statements are calculated based on your answers and may provide addional 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	Yes
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 **at least 50 MCF** of natural gas vented and/or flared during this event	Yes
Did this vent or flare result in the release of **ANY** 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	*Not answered.*
Additional details for Equipment Involved. Please specify	*Not answered.*

Representative Compositional Analysis of Vented or Flared Natural Gas	
Please provide the mole percent for the percentage questions in this group.	
Methane (CH4) percentage	65
Nitrogen (N2) percentage, if greater than one percent	3
Hydrogen Sulfide (H2S) PPM, rounded up	1,000
Carbon Dioxide (C02) percentage, if greater than one percent	4
Oxygen (02) 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 Sufide (H2S) PPM quality requirement	*Not answered.*
Carbon Dioxide (C02) percentage quality requirement	*Not answered.*
Oxygen (02) percentage quality requirement	*Not answered.*

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QUESTIONS (continued)

Operator: Earthstone Operating, LLC 1400 Woodloch Forest; Ste 300 The Woodlands, TX 77380	OGRID: 331165
	Action Number: 183924
	Action Type: [C-129] Venting and/or Flaring (C-129)

QUESTIONS

Date(s) and Time(s)	
Date vent or flare was discovered or commenced	01/28/2023
Time vent or flare was discovered or commenced	12:00 AM
Time vent or flare was terminated	11:59 PM
Cumulative hours during this event	24

Measured or Estimated Volume of Vented or Flared Natural Gas	
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	Cause: Equipment Failure | Other (Specify) | Natural Gas Flared | Released: 64 Mcf | Recovered: 0 Mcf | Lost: 64 Mcf.
Other Released Details	*Not answered.*
Additional details for Measured or Estimated Volume(s). Please specify	*Not answered.*
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	Yes
Was notification of downstream activity received by this operator	No
Downstream OGRID that should have notified this operator	[372603] 3BEAR FIELD SERVICES, LLC
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	Equipment downtime emissions controlled by flare.
Steps taken to limit the duration and magnitude of vent or flare	Standard emission control of equipment downtime. Working with vendor to coordinate service time and minimize downtime.
Corrective actions taken to eliminate the cause and reoccurrence of vent or flare	No way to avoid periodic downtime for repairs to address unforeseen condition. Process equipment emissions controlled by flare.

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ACKNOWLEDGMENTS

Operator: Earthstone Operating, LLC 1400 Woodloch Forest; Ste 300 The Woodlands, TX 77380	OGRID: 331165
	Action Number: 183924
	Action Type: [C-129] Venting and/or Flaring (C-129)

ACKNOWLEDGMENTS

☑	I acknowledge that I am authorized to submit a *Venting and/or Flaring* (C-129) report on behalf of this operator and understand that this report can be **a complete** C-129 submission per 19.15.27.8 and 19.15.28.8 NMAC.
☑	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.
☑	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.
☑	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.
☑	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

Operator: Earthstone Operating, LLC 1400 Woodloch Forest; Ste 300 The Woodlands, TX 77380	OGRID: 331165
	Action Number: 183924
	Action Type: [C-129] Venting and/or Flaring (C-129)

CONDITIONS

Created By	Condition	Condition Date
wtitone	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.	2/8/2023