LABORATORY SERVICES Natural Gas Analysis
www.permianls.com
575.397.3713 2609 W Marland Hobbs NM 88240

C6+ Gas Analysis Report

Sample Point Code	Sample Point Name	Sample Point Location
7471G	NCW9775189	Cottonwood Hills 32 St 5H WH Alloc

Source Laboratory	Lab File No	Container Identity	Sampler
Laboratory Services	2021039341	0864	I Rangel - Spot

District	Area Name	Field Name	Facility Name
USA	USA	USA	New Mexico

Date Sampled	Date Effective	Date Received	Date Reported
Feb 22, 2021 10:40	Feb 22, 2021 10:40	Mar 2, 2021 09:38	Mar 2, 2021

Ambient Temp (°F)	Flow Rate (Mcf)	Analyst	Press PSI @ Temp °F Source Conditions
45.00	296.76	Torrance	83 @ 74

Operator	Lab Source Description
Cimarex Energy	NG

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	1.2820	1.282	
CO2 (CO2)	0.1460	0.146	
Methane (C1)	77.1440	77.143	
Ethane (C2)	11.7830	11.783	3.1500
Propane (C3)	5.5720	5.572	1.5350
I-Butane (IC4)	0.8090	0.809	0.2650
N-Butane (NC4)	1.9080	1.908	0.6010
I-Pentane (IC5)	0.3260	0.326	0.1190
N-Pentane (NC5)	0.3800	0.38	0.1380
Hexanes Plus (C6+)	0.6500	0.65	0.2820
TOTAL	100.0000	99.9990	6.0900

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:	Mar 2, 2021

Gross Heating Values (Real, BTU/ft³)

14.696 PSI @ 60.00 Â°F		14.73 PSI @ 60.00 Â°F	
Dry	Saturated	Dry	Saturated
1,282.5	1,261.6	1,285.5	1,264.5

Calculated Total Sample Properties

GPA2145-16 *Calculated at Contract Conditions

Relative Density Real	Relative Density Ideal
0.7445	0.7420

Molecular Weight
21.4935

C6+ Group Properties

Assumed Composition

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

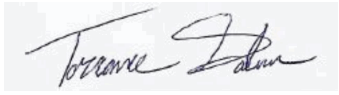
Field H2S
0 PPM

PROTREND STATUS:
Passed By Validator on Mar 3, 2021

DATA SOURCE:
Imported

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

VALIDATOR:
Torrance Galvan



VALIDATOR COMMENTS:
OK

Release Quantity Calculation / Reporting Requirement

SELECT FACILITY → DisplayName COTTONWOOD HILLS 32 STATE

Facility:	COTTONWOOD HILLS 32 STATE			Updated per Facility Selection	
Date/Time Discovered:	4/29/22 11:00 AM	Time Discovered:	11:00:00 AM	State:	NM
Date/Time Started:	4/28/22 11:00 AM	Time Event Started:	11:00:00 AM	Latitude:	32.08036
Date/Time Ended:	4/29/22 11:00 AM	Time Event Ended:	11:00:00 AM	Longitude:	-104.21858
Event Duration (hrs):	24.000			GCP IN NM?:	NO
Event Duration (days):	1.000			Accumulated Malfunctions VOC (TPY):	
Ambient Temperature (F):					
Cause (if known):	Arrived on location. Found gas venting from anardo on top of water tank. Inspected all water dumps. Found cottonwood hills 32-5H water dump hung open. Wellmark controller was stuck. Made adjustments to wellmark and stopped gas from venting				
No. of Events:	1				
Notes:	Performed mass balance using scada data				
Corrective Action:					

Check Instructions
Enter Gas Analysis
Check Reporting Summary

= entered info
= entered from spreadsheet for release type
= calculated value
= dropdowns

Release Source Type and Information

Metered/Estimated Vol (mscf): 286.840 Control Type: None Control Efficiency (%): 0% *adjust manually if needed, this control is for metered/estimated volumes only*

CLICK to go to this tab --->	Hole	Pipe Blowdown - HP	Pipe Blowdown - LP	Equipment Blowdown	Compressor Blowdown	Compressor Startup	ESD	Metered/Estimated Vol.	PSV	TOTAL		If Tank Vapors are also vented, Gas Volume for Radar is	
Vol. Vented to Atmosphere (mscf):	0.000	0.000	0.000	0.000	0.000	0.000	0.000	286.840	0.000	286.840	(mscf) uncombusted	0.000	(mscf) uncombusted
Vol. of Gas Combusted (mscf):	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	0.000	(mscf) combusted		
Max Hourly Release (mscf)	12.0	*Overwrite if greater than calculated value*											

NM Reporting Questions	Did the emission event resulted in uncontrolled engine emissions vented to atmosphere? (ie. engine burning without catalyst)	No
	If "yes" to the above, is this engine subject to NSPS JJJJ emission limits?	No
CSB Reporting Questions	Did the event result in a fatality or serious injury including hospitalization?	No
	Did the event result in property damage estimated in or excess of $1million USD?	No
EPCRA Reporting Questions	Did the release resulted in exposure to persons solely within the boundaries of XEC facility?	Yes
	Is the release a federally permitted release as defined in Section 101(10) of CERCLA?	No

H2S ppm= *Enter HERE if not already in the gas analysis in mole %*

** use recent gas analysis specific to the facility if available; otherwise use default data for the basin*

Component	*mole %	Molecular Weight (grams/mole, lb/lb-mol)	grams per 100 moles of gas	weight %	Total Event Release Amount (lbs)	Total Release Amount 24-hr period (lbs)	Max Hourly Release Amount (lbs)	Tank vented emissions: Total Event Tank Emissions (lbs)	Dehy vented emissions: Total Event Dehy Emissions (lbs)	Total Event (Vented Gas+Tank Vapors)	Reportable Amount 24-hr (lbs) for TX Reporting	Reportable Amount 24-hr (lbs) for NRC Reporting	Component to Report to TCEQ	Component to Report to NRC
Hydrogen	0.0000	2.01588	0.00	0.000	0.00	0.00	0.00	-	-	0.00	NA	NA	-	-
Helium	0.0000	4.0026	0.00	0.000	0.00	0.00	0.00	-	-	0.00	NA	NA	-	-
Nitrogen	1.2820	28.01340	35.91	1.674	271.44	271.44	11.31	0.00	0.00	271.44	5000	NA	-	-
CO2	0.1460	44.00950	6.43	0.300	48.57	48.57	2.02	0.00	0.00	48.57	NA	NA	-	-
H2S**	0.0000	34.08188	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	100	100	-	-
Methane (C1)	77.1440	16.04246	1237.58	57.702	9354.08	9354.08	389.75	0.00	0.00	9354.08	NA	NA	-	-
Ethane (C2)	11.7830	30.06904	354.30	16.519	2677.96	2677.96	111.58	0.00	0.00	2677.96	NA	NA	-	-
Propane (C3)	5.5720	44.09562	245.70	11.456	1857.10	1857.10	77.38	0.00	0.00	1857.10	5000	NA	-	-
Butanes (C4)	2.7170	58.12220	157.92	7.363	1193.60	1193.60	49.73	0.00	0.00	1193.60	5000	NA	-	-
Pentanes (C5)	0.7060	72.14878	50.94	2.375	385.00	385.00	16.04	0.00	0.00	385.00	5000	NA	-	-
Benzene		78.110000	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	10	10	-	-
N-hexane (C6)		86.180000	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	5000	5000	-	-
Other hexanes (C6)	0.6500	86.18000	56.02	2.612	423.40	423.40	17.64	0.00	0.00	423.40	5000	5000	-	-
Toluene		92.140000	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	1000	1000	-	-
Other heptanes (C7)	0.0000	100.20000	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	100	NA	-	-
Ethylbenzene*		106.170000	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	1000	1000	-	-
Xylenes (o, m, p)*		106.170000	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	100	100	-	-
Other octanes (C8)	0.0000	114.23000	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	5000	NA	-	-
Nonanes (C9)	0.0000	128.26000	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	100	NA	-	-
Decanes plus (C10+)	0.0000		0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	5000	NA	-	-
Totals:	100.0000	21.45	2145	100.000										
				Natural Gas (VOC) Release (lbs)=	3859.10	3859.10	VOC (lbs)	0.00	0.00	3859.10	5000	NA	-	-
				Total Release (lbs)=	16211.14	16211.14				VOC (TPY)	1.93			

VOC (Non-methane, Non-ethane hydrocarbons)

VOC content of total sample
VOC weight% = 23.81
VOC weight fraction = 0.24

VOC content of hydrocarbon fraction only
VOC weight% = 24.28
VOC weight fraction = 0.24

Combustion Emissions		*Calculated via mass balance	
	VOC (lbs)		
	SO2 (lbs)	0.00	0.00
	CO (lbs)	0.00	0.00
	CO2 (lbs)	0.00	0.00
	NOx (lbs)	0.00	0.00
	Split NOx - NO (lbs)	0.00	0.00
	Split NOx - NO2 (lbs)	0.00	0.00

NO2/NOx ratio=0.75 per https://www3.epa.gov/ttn/scram/guidance/guide/appw_05.pdf

Combustion Related RQs					
	VOC (lbs)				
	SO2 (lbs)	500	500	-	-
	CO (lbs)	5000	NA	-	-
	CO2 (lbs)	NA	NA	-	-
	NOx (lbs)	5000	NA	-	-
	Split NOx - NO (lbs)	NA	1000	-	-
	Split NOx - NO2 (lbs)	NA	1000	-	-

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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

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 106237
	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 106237

QUESTIONS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 106237
	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	**[fAPP2201752272] COTTONWOOD HILLS 32**

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	77
Nitrogen (N2) percentage, if greater than one percent	1
Hydrogen Sulfide (H2S) PPM, rounded up	0
Carbon Dioxide (C02) percentage, if greater than one percent	0
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: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 106237
	Action Type: [C-129] Venting and/or Flaring (C-129)

QUESTIONS

Date(s) and Time(s)	
Date vent or flare was discovered or commenced	04/29/2022
Time vent or flare was discovered or commenced	11:00 AM
Time vent or flare was terminated	11:00 AM
Cumulative hours during this event	24

Measured or Estimated Volume of Vented or Flared Natural Gas	
Natural Gas Vented (Mcf) Details	Cause: Equipment Failure | Dump Valve | Natural Gas Vented | Released: 283 Mcf | Recovered: 0 Mcf | Lost: 283 Mcf]
Natural Gas Flared (Mcf) Details	*Not answered.*
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	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	Water dump hung open.
Steps taken to limit the duration and magnitude of vent or flare	Made adjustments to dump valve.
Corrective actions taken to eliminate the cause and reoccurrence of vent or flare	Routine maintenance.

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ACKNOWLEDGMENTS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 106237
	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

Action 106237

CONDITIONS

Operator:	OGRID:
CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	215099
	Action Number: 106237
	Action Type: [C-129] Venting and/or Flaring (C-129)

CONDITIONS

Created By	Condition	Condition Date
bgordon01	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.	5/12/2022