

Gas Capture Plan

Lind 24-1 Pad Production Facility

COGCC Rule 903

December 2022

Created for:

Edge Energy II, LLC

600 12th Street Suite 115

Golden, CO 80401

Created by:



CDH Consulting, LLC

Thornton, Colorado

GAS CAPTURE PLAN

PURPOSE

This plan was developed as required by COGCC Rule 903e to adequately describe the proposed beneficial use of waste gas at oil and gas exploration and production operations by Edge Energy II, LLC (Edge). Per rule 903e, an operator must provide a Gas Capture Plan in instances where gas may not be connected to a pipeline, due to no pipeline being available. The subject location for this plan is the Lind 24-1 Production Facility, owned and operated by Edge. The following plan describes the location of the facility and relative proximity to the pipeline, as well as the plan for beneficial reuse of all produced gas from the location.

Sections of this document follow the regulatory sections as indicated by the citations in parenthesis.

Rule 903 (e)(1)(B) – REQUIRED ELEMENTS OF PLAN

§903(e)(1)(B)(i) – Description and map of the location of the closest or contracted natural gas gathering system or point of sale.

The subject facility is the Lind 24-1 Pad facility, located in Weld County, Colorado in the SWNW of Section 24, Township 11N, Range 66W (lat 40.909469, long -104.731315).

The subject facility and well for this location is:

Facility Name	Facility ID
Lind 24-1	311876
Associated Wells	API #
Lind 24-1	05-123-18924

It was found that the closest available pipeline and/or point of sale is located approximately 17.6 miles north of the subject location.

This map demonstrating the relative proximity of the pipeline to the subject location can be found in Appendix A of this document.

§903(e)(1)(B)(ii) – Name of the company operating the closest or contracted natural gas gathering system.

The the owner/operator of the closest available gathering system is owned by Rimrock Midstream.

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§903(e)(1)(B)(iii) – The Operator’s plan for connecting their facility to a natural gas gathering system or otherwise putting gas to beneficial use.

As the closest available pipeline is over 17 miles away, there are no plans at this time to construct any additional pipelines to the location; therefore, a gas gathering system will not be available for use at this location. Edge proposes to use any produced gas for beneficial use at their location.

The proposed method of beneficial reuse is on-site equipment operation (see the facility diagram in Appendix B for details). Edge has identified that the well can produce up to 24 MCF per month of natural gas on average. The following gas use calculations will demonstrate that up to 230 MCF of gas could be used on site each month. There is no capability for gas venting or flaring at this facility; all gas remains on a closed loop between the wellhead, separator, and fuel burning equipment. The only possible use of the gas is beneficial use.

At the location there is one (1) 0.75 MMBtu/hr heater and one (1) 40 hp pumpjack engine using the fuel at this location.

Table 1 describes the fuel usage from the heater if it were to operate for a full year (8760 hours):

Table 1: Heater Fuel Usage Calculation		
Number of heaters	1	Units
Design heat input rate	0.75	MMBtu/hr (per heater)
Heat content of natural gas	1286	Btu/scf
Hours of operation	8760	hrs/year
Requested Hours of operation	8760	hrs/year
Requested heat input rate	6,570	MMBtu per year
Actual Fuel Consumption	5.11	MMscf/year

Fuel consumption = # of Heaters* Design Heat Rate* Hours of Operation/ heat content of waste gas

Table 2 describes the fuel usage from the pumpjack engine if it were to operate for a full year:

Table 2: Engine #1 Fuel Usage Calculation		
# of Like-Kind Engines	1	Units
Maximum design horsepower (each)	40	Hp
Brake Specific Fuel Consumption (BSFC)	9400	Btu/hp-hr
Heat content of waste gas	1286	Btu/scf
Hours of operation	8760	hrs/year
Actual Fuel Consumption	2.56	MMscf/year

Fuel consumption = # of engines * BSFC * hours of operation* HP / heat content of gas / 1,000,000 scf/mmcsf

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The above calculations were compiled using a site-specific gas analysis, attached in Appendix C. The calculations demonstrate that the location is capable of beneficially using up to 7.67 MMscf/year of produced gas, or 0.64 MMscf/month. These values were calculated per the example calculation shown under Table 1 and Table 2; using burner nameplate specifications and engine manufacturer specifications. Edge Energy mapped the gas/oil ratio (GOR) and use oil production to estimate gas production. Based on Edge's estimations, the well may produce up to 0.3 MMscf per year (or 0.024 MMscf/month). Based on the calculated fuel consumption and the estimated gas production, this facility will be able to utilize all of the gas produced for beneficial use.

§903(e)(1)(B)(iv) – Wildcat well or productivity test requirements.

This well is not a wildcat well and will not undergo productivity tests; therefore, this section does not apply.

§903(e)(1)(B)(v) – Any anticipated safety risks that will require the Operator to allow gas to escape, rather than being captured or combusted during drilling operations, pursuant to Rule 903.b.(2).

There are no drilling operations occurring at this facility, so this section does not apply.

§903(e)(1)(B)(vi) – A description of operational best practices that will be used to minimize Venting during active and planned maintenance allowed pursuant to Rule 903.d.(1).B.

To the extent possible, during any necessary maintenance activities, gas valves will be isolated to avoid unnecessary venting of gas to the atmosphere while repairs take place.

§903(e)(1)(B)(vii) – Procedures the Operator will employ to reduce the frequency of Well liquids unloading events.

The wells associated with this tank battery are primarily oil wells and produce very little gas; therefore, liquids unloading activities are not anticipated to take place.

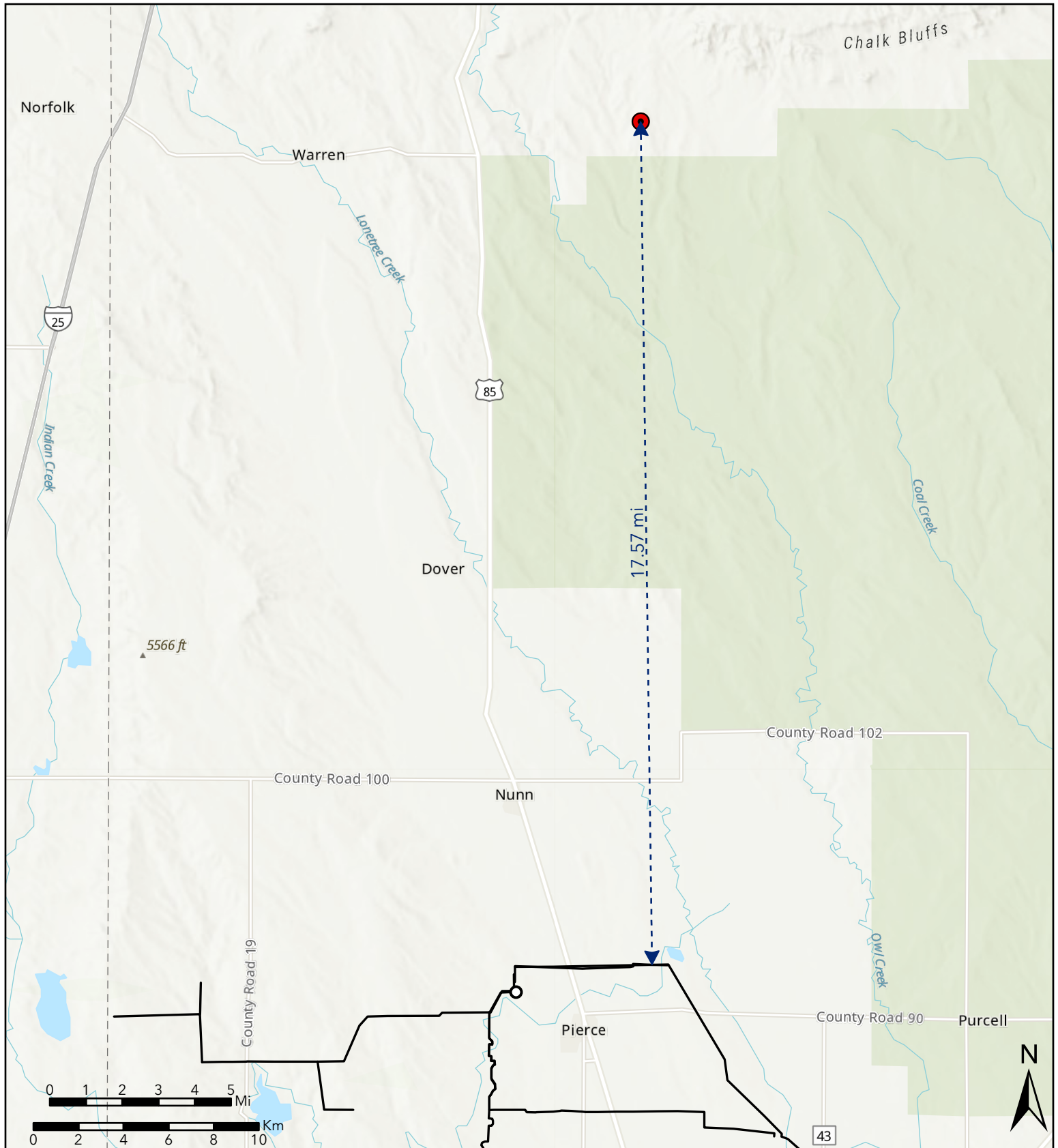
§903(e)(1)(B)(viii) – Anticipated volumes of liquids and gas production and a description of how separation equipment will be sized to optimize gas capture.

The facility is anticipated to produce up to 80 barrels of oil per month, 13 barrels of produced water per month, and approximately 24 MCF of gas per month from the single well. The equipment has been operating since 1999 and separation vessels and storage tanks have been adequately sized to handle the production volumes since that time. The discussion in section

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§903(e)(1)(B)(iii) demonstrates that the gas-utilizing equipment and closed-loop system is sized adequately to handle the anticipated volume of gas.

APPENDIX A
MAP OF SUBJECT FACILITY RELATIVE TO PIPELINE



Edge Energy II Lind 24-1 Facility

Legend

- Edge II Facility
- Gathering Line

Distance to nearest
gathering line:
17.57 mi

Facility Location: Lat 40.909469, Long -104.731315, Weld County, CO



APPENDIX B
PROCESS FLOW DIAGRAM

Edge Energy II, LLC
PROCESS FLOW DIAGRAM
LIND 24-1
SWNW SEC. 24 T11N R66W
WELD COUNTY, COLORADO

LAT/LONG: 40.909414, -104.731203

NOT TO SCALE

LEGEND

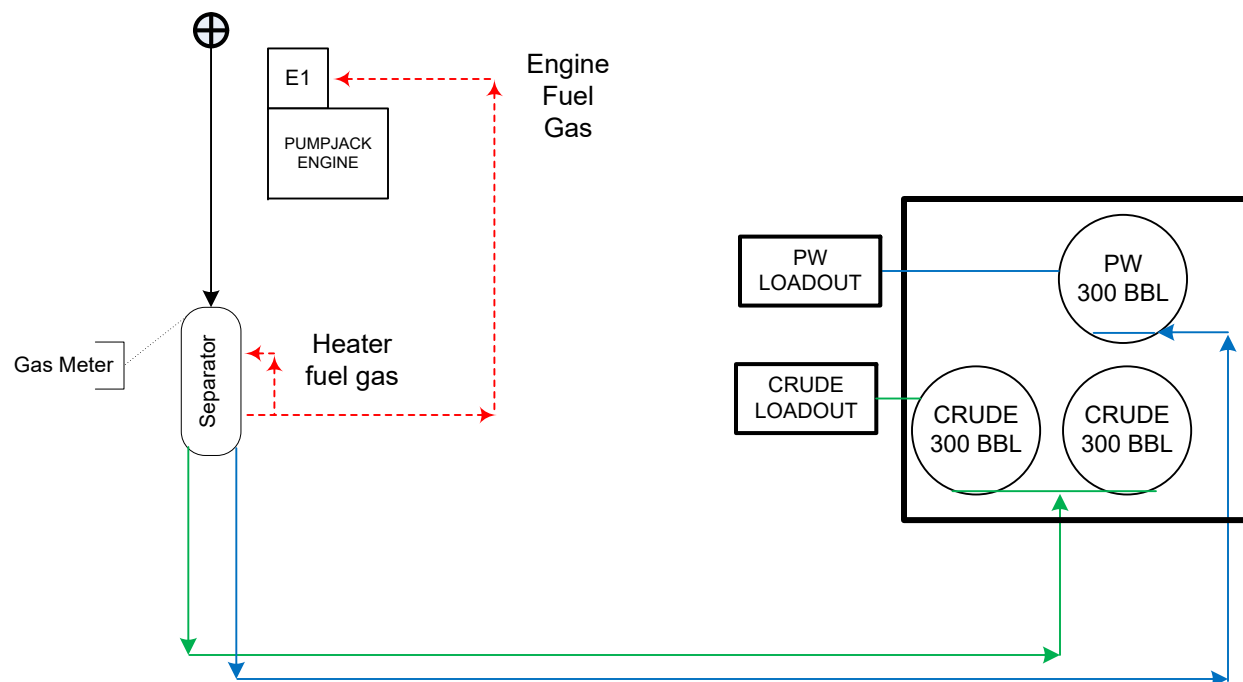
— CRUDE LINE
— PRODUCED WATER
LINE
- - - FUEL GAS LINE

⊕ WELLHEAD

E1 ENGINE 1

PW PRODUCED
WATER

CRUDE CRUDE OIL



ALL PIPING IS FOR PROCESS FLOW
DEMONSTRATION ONLY

APPENDIX C
SITE SPECIFIC GAS ANALYSIS



Certificate of Analysis

Number: 2500-22050135-001A

Greeley Laboratory

2881 S. 31st Ave

Unit 6-8

Greeley, CO 80631

Ben Turner
Edge Energy
600 12th Street
Suite 115
Golden, CO 80401

May 20, 2022

Station Name: Lind 24-1
Sample Point: sales line ds scrub-pot
Cylinder No: 8
Analyzed: 05/19/2022 11:50:29 by RHJ

Sampled By: Hector Gonzalez
Sample Of: Gas Spot
Sample Date: 05/17/2022 08:15
Sample Conditions: 42 psig, @ 81 °F
Method: GPA 2286

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.73 psia
Hydrogen Sulfide	NIL	NIL	
Nitrogen	2.0163	2.4103	
Carbon Dioxide	2.9050	5.4557	
Methane	68.9159	47.1790	
Ethane	12.8797	16.5265	3.4584
Propane	9.8148	18.4686	2.7149
Iso-Butane	0.7327	1.8173	0.2408
n-Butane	1.6347	4.0545	0.5174
Iso-Pentane	0.1665	0.5126	0.0611
n-Pentane	0.2074	0.6385	0.0755
i-Hexanes	0.1292	0.4643	0.0516
n-Hexane	0.0969	0.3566	0.0400
Benzene	0.0158	0.0528	0.0044
Cyclohexane	0.0589	0.2117	0.0201
i-Heptanes	0.1972	0.7934	0.0817
n-Heptane	0.0270	0.1153	0.0125
Toluene	0.0263	0.1035	0.0088
i-Octanes	0.1031	0.4624	0.0459
n-Octane	0.0167	0.0815	0.0086
2,2,4-Trimethylpentane	0.0020	0.0099	0.0010
Ethylbenzene	0.0087	0.0396	0.0034
Xylenes	0.0115	0.0525	0.0044
i-Nonanes	0.0086	0.0458	0.0046
n-Nonane	0.0015	0.0082	0.0009
Decane Plus	0.0236	0.1395	0.0137
	100.0000	100.0000	7.3697

Calculated Physical Properties	Total	C10+
Calculated Molecular Weight	23.43	138.11
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.73 psia & 60°F		
Real Gas Dry BTU	1308.6	7435.7
Water Sat. Gas Base BTU	1285.8	7275.1
Relative Density Real Gas	0.8123	4.7686
Compressibility Factor	0.9957	

Comments: H2S Field Content 0 ppm

Data reviewed by: Ryleigh Jacobs, Laboratory Analyst

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