

Base of Productive Zone (BPZ)

Sec: 20 Twp: 9S Rng: 93W Footage at BPZ: 544 FSL 1930 FEL
Measured Depth of BPZ: 8229 True Vertical Depth of BPZ: 7817 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 20 Twp: 9S Rng: 93W Footage at BHL: 544 FSL 1930 FEL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: MESA Municipality: N/A

Is the Surface Location of this Well in an area designated as one of State interest and subject to the requirements of § 24-65.1-108 C.R.S.? No

Per § 34-60-106(1)(f)(I)(A) C.R.S., the following questions pertain to the Relevant Local Government approval of the siting of the proposed Oil and Gas Location.

SB 19-181 provides that when "applying for a permit to drill," operators must include proof that they sought a local government siting permit and the disposition of that permit application, or that the local government does not have siting regulations. § 34-60-106(1)(f)(I) (A) C.R.S.

Does the Relevant Local Government regulate the siting of Oil and Gas Locations, with respect to this Location? [X] Yes [] No

[X] If yes, in checking this box, I hereby certify that an application has been filed with the local government with jurisdiction to approve the siting of the proposed oil and gas location.

The disposition of the application filed with the Relevant Local Government is: Approved Date of Final Disposition: 10/18/2023

Comments: Mesa County, the local government with jurisdiction over the siting of this oil and gas location, determined that per the Mesa County Land Development Code Table 6-1: Use Table and Section 6.02(Q), "Oil and Gas Drilling " is an allowed use in the Agricultural, Forestry, Transitional (AFT) zone district. The subject parcel is designated by Mesa County as AFT zone district. The Laramie 0993-29-01 meets all the Mesa County zoning setback requirements for the AFT zone district. Advance Notice was sent to Mesa County's Community Development Department, notifying Mesa County of Laramie's intentions to submit an Oil and Gas Development Plan (OGDP), titled 2023 Laramie 0993-29-01 OGDP, to the Colorado Energy & Carbon Management Commission (ECMC). The notification included details regarding proposed operations at the Laramie 0993-29-01. The notice letter was sent on September 11, 2023, to Mesa County pursuant to ECMC Rule 302.e. The letter was received by Mesa County on September 11, 2023, via email and received September 13, 2023, by certified mail. While Oil and Gas Drilling is an allowed use, Oil and Gas Locations must be permitted within Mesa County. Laramie submitted an Oil and Gas Location Application to Mesa County on September 18, 2023. Mesa County assigned "PRO2023-0262" as the project number for the application. The Land Development Application Public Notice sign for the application was posted at the intersection of the existing private lease road entrance and Highway 330 (public road) on September 28, 2023. Representatives from Mesa County's Community Development Department attended the Pre-Application Onsite Meeting on June 12, 2023.

SURFACE AND MINERAL OWNERSHIP AT WELL'S OIL & GAS LOCATION

Surface Owner of the land at this Well's Oil and Gas Location: [X] Fee [] State [] Federal [] Indian

Mineral Owner beneath this Well's Oil and Gas Location: [X] Fee [] State [] Federal [] Indian

Surface Owner Protection Bond (if applicable): Surety ID Number (if applicable):

MINERALS DEVELOPED BY WELL

The ownership of all the minerals that will be developed by this Well is (check all that apply):

- [X] Fee
[] State
[] Federal
[] Indian
[] N/A

LEASE INFORMATION

Using standard QtrQtr, Section, Township, Range format describe one entire mineral lease as follows:

* If this Well is within a unit, describe a lease that will be developed by the Well.

* If this Well is not subject to a unit, describe the lease that will be produced by the Well.

(Attach a Lease Map or Lease Description or Lease if necessary.)

See Lease Map.

Total Acres in Described Lease: 200 Described Mineral Lease is: Fee State Federal Indian
Federal or State Lease # _____

SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 1441 Feet
Building Unit: 5280 Feet
Public Road: 5133 Feet
Above Ground Utility: 1192 Feet
Railroad: 5280 Feet
Property Line: 284 Feet

INSTRUCTIONS:

- Specify all distances per Rule 308.b.(1).
- Enter 5280 for distance greater than 1 mile.
- Building - nearest building of any type. If nearest Building is a Building Unit, enter same distance for both.
- Building Unit – as defined in 100 Series Rules.

OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
WILLIAMS FORK-ILES	WFILS	1-229		

Federal or State Unit Name (if appl): _____ Unit Number: _____

SUBSURFACE MINERAL SETBACKS

Enter 5280 for distance greater than 1 mile.

Is this Well within a unit? No

If YES:

Enter the minimum distance from the Completed Zone of this Well to the Unit Boundary: _____ Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well within the same unit permitted or completed in the same formation: _____ Feet

If NO:

Enter the minimum distance from the Completed Zone of this Well to the Lease Line of the described lease: 544 Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well producing from the same lease and permitted or completed in the same formation: 311 Feet

Exception Location

If this Well requires the approval of a Rule 401.c Exception Location, enter the Rule or spacing order number and attach the Exception Location Request and Waivers. _____

SPACING & FORMATIONS COMMENTS

Committed to CA COC078483

DRILLING PROGRAM

Proposed Total Measured Depth: 8229 Feet

TVD at Proposed Total Measured Depth 7817 Feet

Distance from the proposed wellbore to nearest existing or proposed wellbore belonging to another operator, including plugged wells:

Enter distance if less than or equal to 1,500 feet: _____ Feet No well belonging to another operator within 1,500 feet

Will a closed-loop drilling system be used? Yes

Is H₂S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? No If yes, attach an H₂S Drilling Plan unless a plan was already submitted with the Form 2A per Rule 304.c.(10).

Will there be hydraulic fracture treatment at a depth less than 2,000 feet in this well? No

Will salt sections be encountered during drilling? No

Will salt based (>15,000 ppm Cl) drilling fluids be used? No

Will oil based drilling fluids be used? No

BOP Equipment Type: Annular Preventor Double Ram Rotating Head None

Beneficial reuse or land application plan submitted? No

Reuse Facility ID: _____ or Document Number: _____

CASING PROGRAM

Casing Type	Size of Hole	Size of Casing	Grade	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
CONDUCTOR	26	16	SA-53B	36.94	0	90	180	90	0
SURF	11	8+5/8	J-55	24	0	1500	352	1500	0
1ST	7+7/8	4+1/2	HCP110	11.6	0	8229	1085	8229	1400

Conductor Casing is NOT planned

POTENTIAL FLOW AND CONFINING FORMATIONS

Zone Type	Formation /Hazard	Top M.D.	Top T.V.D.	Bottom M.D.	Bottom T.V.D.	TDS (mg/L)	Data Source	Comment
Groundwater	Freshwater/Groundwater	0	0	600	600	501-1000	DWR	Laramie Energy, WW Permit No. 306397
Confining Layer	Wasatch	600	600	2822	2666			
Hydrocarbon	Wasatch 'G' Sand	2822	2666	3349	3148	1001-10000	Other	Wells API# 05077086370000 Buzzard Creek Unit 5-14 Fluid Present: Saltwater
Hydrocarbon	Fort Union	3349	3148	4092	3828			Potential Hazard: Instability
Hydrocarbon	Lower Wasatch	4092	3828	4948	4611			Fluid Present: Saltwater
Hydrocarbon	Ohio Creek	4948	4611	5394	5019	>10000	Produced Water Sample	Wells API# 05077087650000 Buzzard Creek 22-3 Potential Hazard: Loss circulation; Fluid Present: Saltwater
Hydrocarbon	Williams Fork	5394	5019	6454	6042	>10000	Produced Water Sample	Sup & Shep 0993-25-16W. API# 05077105790000 McDaniel 2-1 API#05077093410000 Water TDS: 40,000 mg/L
Hydrocarbon	Top of Gas	6454	6042	7653	7241	>10000	Produced Water Sample	Sup & Shep 0993-25-16W. API# 05077105790000 McDaniel 2-1 API#05077093410000 Water TDS: 40,000 mg/L
Hydrocarbon	Cameo	7653	7241	7979	7567	>10000	Produced Water Sample	Sup & Shep 0993-25-16W. API# 05077105790000 McDaniel 2-1 API#05077093410000 Water TDS: 40,000 mg/L
Hydrocarbon	Rollins	7979	7567	8229	7817	>10000	Produced Water Sample	Sup & Shep 0993-25-16W. API# 05077105790000 McDaniel 2-1 API#05077093410000 Water TDS: 40,000 mg/L

OPERATOR COMMENTS AND SUBMITTAL

Comments: Well Laramie 0993-20-17E is not located in a mapped HPH. BHL Coordinates: Latitude 39.256929°; Longitude -107.790624° BHL: SWSE Sec 20, Township 9 South, Range 93 West, 6 P.M. Conductor is grouted in place. The 2023 Laramie 0993-29-01 ODGP was approved on August 7, 2024 (Order No. 583-3)

This application is in a Comprehensive Area Plan No CAP #: _____
 Oil and Gas Development Plan Name 2023 Laramie 0993-29-01 ODGP OGDP ID#: 486874
 Location ID: 487592

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: _____ Print Name: Lori Muhr

Title: Regulatory Analyst Date: 8/19/2024 Email: LMuhr@Laramie-Energy.com

Operator must have a valid water right or permit allowing for industrial use or purchased water from a seller that has a valid water right or permit allowing for industrial use, otherwise an application for a change in type of use is required under Colorado law. Operator must also use the water in the location set forth in the water right decree or well permit, otherwise an application for a change in place of use is required under Colorado law. Section 37-92-103(5), C.R.S. (2011).

Based on the information provided herein, this Application for Permit-to-Drill complies with ECMC Rules, applicable orders, and SB 19-181 and is hereby approved.

ECMC Approved:  Director of ECMC Date: 9/25/2024

Expiration Date: 08/06/2027

API NUMBER 05 077 10636 00

CONDITIONS OF APPROVAL, IF ANY LIST

All representations, stipulations and conditions of approval stated in the Form 2A for this location shall constitute representations, stipulations and conditions of approval for this Form 2 Permit-to-Drill and are enforceable to the same extent as all other representations, stipulations and conditions of approval stated in this Permit-to-Drill.

<u>COA Type</u>	<u>Description</u>
Drilling/Completion Operations	<p>1) Submit Form 42 electronically to ECMC 2 business days prior to MIRU (spud notice) for the first well activity with a rig on the pad and provide 2 business day spud notice via Form 42 for all subsequent wells drilled on the pad.</p> <p>2) Operator shall comply with the most current revision of the Northwest Notification Policy.</p> <p>3) Operator shall comply with the Notice to Operators Drilling Wells in the Buzzard, Mamm Creek, and Rulison fields, Garfield County and Mesa County – Procedures and Submittal Requirements for Compliance with ECMC Order Nos. 1-107, 139-56, 191-22, and 369-2 (July 8, 2010).</p> <p>4) Bradenhead tests shall be performed according to the following schedule and Form 17 submitted within 10 days of each test: 1) Within 60 days of rig release, prior to stimulation. If any pressure greater than the threshold is observed or if there is evidence of communication, Operator must contact ECMC engineering for approval prior to stimulation. 2) A post-production test within 60 days after first sales</p> <p>5) Operator shall provide stage cement or increase cement coverage for production casing 4 1/2" FIRST STRING to provide coverage from 200' below the Fort Union top (also known locally by operators as the Atwell Gulch Member of the Wasatch Formation) to 200' above the Wasatch G Upper Interval (also known locally by operators as the Molina Member of the Wasatch Formation). These formations are defined by COGCC in the report "Casing and Cement Standards for Geologic Isolation Piceance Basin Bradenhead Monitoring Area and Nearby Fields," dated April 18, 2016, COGCC Document No. 2056199, Appendix A Field Scout Cards and Annotated Type Logs). Isolation is required for offset Wasatch G Sand production or UIC injection. Verify production cement coverage with a cement bond log.</p>
Drilling/Completion Operations	Operator will log two (2) additional wells during the second rig occupation with open-hole resistivity log with gamma-ray log from the kick-off point into the surface casing for the stratigraphically deepest wells for a total of three wells logged.
Interim Reclamation	Operator shall comply with Notice to Operators: Interim Reclamation Procedures for Delayed Operations (dated January 5, 2017).
3 COAs	

Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Drilling/Completion Operations	Alternative Logging Program: One of the wells drilled on the pad will be logged with open-hole Resistivity Log and Gamma Ray Log from TD into the surface casing. All wells on the pad will have a cement bond log with gamma-ray run on production casing (or on intermediate casing if production liner is run) into the surface casing. The Form 5, Completion Report, for each well on the pad will list all logs run and have those logs attached. The Form 5 for a well without open-hole logs will state "Alternative Logging Program - No open-hole logs were run" and will clearly identify the type of log and the well (by API#) in which open-hole logs were run.

Total: 1 comment(s)

ATTACHMENT LIST

<u>Att Doc Num</u>	<u>Name</u>
403853150	FORM 2 SUBMITTED
403857756	MINERAL LEASE MAP
403859149	DIRECTIONAL DATA
403859150	DEVIATED DRILLING PLAN
403859151	OTHER
403859152	WELL LOCATION PLAT
403859153	SURFACE AGRMT/SURETY
403870128	OffsetWellEvaluations Data
403918364	OffsetWellEvaluations Data
403934930	OFFSET WELL EVALUATION

Total Attach: 10 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed.	09/19/2024
Engineer	<p>There is no offset wells within 1 mile producing from the Wasatch G formation</p> <p>Well is located within the Piceance Basin BHMA</p> <p>Offset water well check: ECMC evaluated offset water wells within one mile of this proposed well's surface hole location. This information in addition to locally-available geophysical logs and hydrogeological information was used to evaluate the adequacy of the operator's proposed surface casing setting depth. The deepest water well within one mile is 72 feet.</p> <p>Uploaded updated version of offset well review with additional wells pre request of ECMC Engineer</p>	09/12/2024
OGLA	The Commission approved OGDG #486874 on August 7, 2024 for the Oil and Gas Location related to this Form 2. OGLA task passed.	08/26/2024
Permit	TPZ and TVD of TPZ corrected per directional data, values swapped. Passed Permitting review	08/26/2024

Total: 4 comment(s)