

FORM

2

Rev
05/22

State of Colorado

Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109

Document Number:

403265689

Date Received:

12/23/2022

APPLICATION FOR PERMIT TO

☒ Drill
 ☐ Deepen
 ☐ Re-enter
 ☐ Recomplete and Operate
Amend ☐
 TYPE OF WELL OIL ☒ GAS ☐ COALBED ☐ OTHER: _____
Refile ☒
 ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐
Sidetrack ☐

Well Name: Mottled South

Well Number: 6-4HN

Name of Operator: MALLARD EXPLORATION LLC

COGCC Operator Number: 10670

Address: 1400 16TH STREET SUITE 300

City: DENVER

State: CO

Zip: 80202

Contact Name: Erin Mathews

Phone: (720)543 7959

Fax: ()

Email: emathews@mallardexploration.com

FINANCIAL ASSURANCE FOR PLUGGING, ABANDONMENT, AND RECLAMATION

COGCC Financial Assurance

☒ The Operator has provided or will provide Financial Assurance to the COGCC for this Well.

Surety ID Number (if applicable): 20170115

Federal Financial Assurance

☐ In checking this box, the Operator certifies that it has provided or will provide at least this amount of Financial Assurance to the federal government for this Well. (Per Rule702.a.)

Amount of Federal Financial Assurance \$ _____

WELL LOCATION INFORMATION

Surface Location

QtrQtr: SESW Sec: 31 Twp: 8N Rng: 59W Meridian: 6

Footage at Surface: 550 Feet FSL 1399 Feet FWL

Latitude: 40.613084 Longitude: -104.025633

GPS Data: GPS Quality Value: 1.7 Type of GPS Quality Value: PDOP

Date of Measurement: 09/15/2017

Ground Elevation: 4968

Field Name: WILDCAT

Field Number: 99999

Well Plan: is ☐ Directional ☒ Horizontal (highly deviated) ☐ Vertical

If Well plan is Directional or Horizontal attach Deviated Drilling Plan and Directional Data.

Subsurface Locations

Top of Productive Zone (TPZ)

Sec: 6 Twp: 7N Rng: 59W

Footage at TPZ: 600 FNL 1345 FWL

Measured Depth of TPZ: 6596

True Vertical Depth of TPZ: 6235

FNL/FSL FEL/FWL

Base of Productive Zone (BPZ)Sec: 6 Twp: 7N Rng: 59WFootage at BPZ: 600 FSL 1345 FWLMeasured Depth of BPZ: 10642True Vertical Depth of BPZ: 6235 FNL/FSL FEL/FWL**Bottom Hole Location (BHL)**Sec: 6 Twp: 7N Rng: 59WFootage at BHL: 600 FSL 1345 FWL

FNL/FSL

FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATIONCounty: WELDMunicipality: 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.? Yes

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? ☒ Yes ☐ No☒ 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: 05/28/2021Comments: WOGLA18-0069 amended as 1041WOGLA-AMD21-0052, approved 5/28/2021**SURFACE AND MINERAL OWNERSHIP AT WELL'S OIL & GAS LOCATION**Surface Owner of the land at this Well's Oil and Gas Location: ☒ Fee ☐ State ☐ Federal ☐ IndianMineral Owner beneath this Well's Oil and Gas Location: ☒ 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):

☒ 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.)

NW, Sec 6, 7N, 59WTotal Acres in Described Lease: 166Described Mineral Lease is: ☒ Fee ☐ State ☐ Federal ☐ Indian

Federal or State Lease #

SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 5280 Feet
Building Unit: 5280 Feet
Public Road: 531 Feet
Above Ground Utility: 1914 Feet
Railroad: 5280 Feet
Property Line: 550 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.)
NIOBRARA	NBRR	535-980	640	7N-59W Sec 6: All

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? Yes

If YES:

Enter the minimum distance from the Completed Zone of this Well to the Unit Boundary: 600 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: 745 Feet

If NO:

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

DRILLING PROGRAM

Proposed Total Measured Depth: 10642 Feet

TVD at Proposed Total Measured Depth 6235 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: 56 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? Yes

BOP Equipment Type: ☒ Annular Preventor ☒ Double Ram ☒ Rotating Head ☐ None

Beneficial reuse or land application plan submitted? _____

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	N/A	43	0	80	50	80	0
SURF	13+1/2	9+5/8	J55	36	0	1650	560	1650	0
1ST	8+1/2	5+1/2	HCP110	20	0	10642	1425	10642	

☐ 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	LARAMIE	0	0	190	190	0-500	DWR	
Groundwater	LARAMIE FOX HILLS	190	190	575	575	0-500	DWR	
Confining Layer	PIERRE SHALE	575	575	880	880			
Groundwater	UPPER PIERRE	880	880	1585	1580	0-500	DWR	
Confining Layer	PIERRE SHALE	1585	1580	3287	3270			
Hydrocarbon	RICHARD SANDSTONE	3287	3270	3400	3382			
Hydrocarbon	PARKMAN SANDSTONE	3400	3382	3735	3715			
Confining Layer	PIERRE SHALE	3735	3715	6125	6052			
Confining Layer	SHARON SPRINGS SHALE	6125	6052	6184	6093			
Hydrocarbon	NIOBRARA SHALE	6184	6093	10642	6235			The TVD of the deepest hydrocarbon zone is the bottom of the well and not the bottom of the formation. The formation is not planned to be exited.

OPERATOR COMMENTS AND SUBMITTAL

Comments

This Form 2 is being submitted as a refile of API # 05-123-48216.

The location is being reduced from a 16-well pad to a 7-well pad. The seven remaining wells are not being respaced. The refile Form 2 updates the same unchanged SHL/TPZ/BHL information with updated TMD/TVD, BPZ, casing grades, PFZ table data, and nearest well distances.

Remaining:

Mottled South 6-1HN (API: 05-123-48219)
Mottled South 6-4HN (API: 05-123-48216)
Mottled South 6-7HN (API: 05-123-48218)
Mottled South 6-16HN (API: 05-123-48212)
Mottled South 6-13HN (API: 05-123-48226)
Mottled South 6-10HN (API: 05-123-48224)
Mottled South 6-9HN (API: 05-123-48221)

Abandoning:

Mottled South 6-6HC (API: 05-123-48213)
Mottled South 6-2HC (API: 05-123-48214)
Mottled South 6-8HN (API: 05-123-48215)
Mottled South 6-15HC (API: 05-123-48217)
Mottled South 6-11HC (API: 05-123-48220)
Mottled South 6-5HN (API: 05-123-48222)
Mottled South 6-14HN (API: 05-123-48223)
Mottled South 6-12HN (API: 05-123-48225)
Mottled South 6-3HN (API: 05-123-48227)

There have been no new buildings constructed and no changes to the surrounding land use, Surface & Minerals, cultural distance setbacks, formations, or mineral lease descriptions. All previously submitted plats, notices, Surface Use Agreements, and letters are also still valid. Well Location Plat is in COGIS Docs as Doc #401617861.

The nearest well in unit per anti-collision is updated to the Mottled South 6-1HN @ 745'.

The nearest outside operated well per anti-collision is updated as the Wickstrom 6-5 (API: 05-123- 21315) PR Status @56'. Well is a D Sand producer with a top interval of 6836'. The proposed well is a Niobrara with a TVD of 6235'. Producing zones are >150' apart, no 408.u required.

This application is in a Comprehensive Area Plan No CAP #: _____

Oil and Gas Development Plan Name _____ OGDID#: _____

Location ID: 453399

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

Signed: _____ Print Name: Justin Garrett

Title: Sr. Regulatory Analyst Date: 12/23/2022 Email: regulatory@ascentgeomatrics.c

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 COGCC Rules, applicable orders, and SB 19-181 and is hereby approved.

COGCC Approved:  Director of COGCC Date: 2/16/2023

Expiration Date: 02/15/2026

API NUMBER

05 123 48216 00

Conditions Of Approval

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>
Construction	If location is not constructed by 2A expiration (10/11/2023), a refile Form 2A must be approved prior to location construction
Drilling/Completion Operations	1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU (spud notice) for the first well activity with a rig on the pad and provide 48 hour spud notice via Form 42 for all subsequent wells drilled on the pad. 2) Provide cement coverage from TD to a minimum of 500' above Niobrara. Verify coverage with cement bond log.
Drilling/Completion Operations	Bradenhead Testing Per COGCC Order 1-232, 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 200 psi, must contact COGCC engineer prior to stimulation. 2) If a delayed completion, 6 months after rig release and prior to stimulation. If any pressure greater than 200 psi, must contact COGCC engineer prior to stimulation. 3) A post-production test within 60 days after first sales, as reported on the Form 10, Certificate of Clearance.
Drilling/Completion Operations	Operator acknowledges the proximity of the listed non-operated wells. Operator assures that this offset list will be remediated per the DJ Basin Horizontal Offset Policy (option 3). Operator will submit a Form 42 ("OFFSET MITIGATION COMPLETED") stating what appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of this well. GREEN *5-12(API 05-123-22009) PAUL *6-9(API 05-123-22633) PAUL *6-2(API 05-123-22632)
4 COAs	

Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Drilling/Completion Operations	Blowout Prevention Equipment ("BOPE"): A double ram annular preventer will be used during drilling.
2	Drilling/Completion Operations	Anti-collision: Operator will perform an anti-collision evaluation of all active (producing, shut in, or temporarily abandoned) offset wellbores that have the potential of being within 150 feet of a proposed well prior to drilling operations for the proposed well. Notice shall be given to all offset operators prior to drilling.
3	Drilling/Completion Operations	Alternative Logging Program: One of the first wells drilled on the pad will be logged with open-hole resistivity log with gamma-ray log from the kick-off point 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 horizontal portion of every well will be logged with a measured while-drilling gamma-ray log. 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 shall state "Alternative Logging Program - No open-hole logs were run" and shall clearly identify the type of log and the well (by API#) in which open-hole logs were run.

Total: 3 comment(s)

Attachment List

Att Doc Num	Name
403265689	FORM 2 SUBMITTED
403270542	DEVIATED DRILLING PLAN
403270543	DIRECTIONAL DATA
403281658	OffsetWellEvaluations Data
403322939	OFFSET WELL EVALUATION

Total Attach: 5 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed.	02/15/2023
Permit	Added the refile COA with the operator's consent Passed Permit Review	02/14/2023
OGLA	This Location and its associated materials was fully reviewed in the review of this APD in accordance with current Rules. See Sundry doc #403314188 in Location #453399 file for additional information. This APD complies with all COGCC Rules and is adequately protective of public health, safety, welfare, the environment, and wildlife resources. OGLA task passed.	02/14/2023
Permit	Requesting from the operator to add the refile COA for unbuilt locations	02/13/2023
Engineer	Updated the OWE per the Operator.	01/05/2023
Engineer	<ul style="list-style-type: none"> •Surface Casing Check complete •Offset well review complete 408.t - No wells 408.u - No wells •Engineering review complete 	01/05/2023

Total: 6 comment(s)