

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:

403162638

Date Received:

09/26/2022

APPLICATION FOR PERMIT TO

☒ Drill ☐ Deepen ☐ Re-enter ☐ Recomplete and Operate

Amend ☐

TYPE OF WELL OIL ☒ GAS ☐ COALBED ☐ OTHER: _____

Refill ☐

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐

Sidetrack ☐

Well Name: Rio Well Number: 13NA
Name of Operator: PDC ENERGY INC COGCC Operator Number: 69175
Address: 1775 SHERMAN STREET - STE 3000
City: DENVER State: CO Zip: 80203
Contact Name: Ally Ota Phone: (303)860-5800 Fax: ()
Email: regulatory@pdce.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): 20160047

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: NWNW Sec: 6 Twp: 1S Rng: 67W Meridian: 6

Footage at Surface: 279 Feet FNL 65 Feet FWL

Latitude: 39.999575 Longitude: -104.940104

GPS Data: GPS Quality Value: 1.5 Type of GPS Quality Value: PDOP Date of Measurement: 06/28/2018

Ground Elevation: 5068

Field Name: WATTENBERG Field Number: 90750

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: 2 Twp: 1S Rng: 68W Footage at TPZ: 460 FNL 2155 FEL
Measured Depth of TPZ: 11642 True Vertical Depth of TPZ: 7396 FNL/FSL FEL/FWL

Base of Productive Zone (BPZ)

Sec: 11 Twp: 1S Rng: 68W Footage at BPZ: 460 FSL 2155 FEL
Measured Depth of BPZ: 21032 True Vertical Depth of BPZ: 7491 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 11 Twp: 1S Rng: 68W Footage at BHL: 460 FSL 2155 FEL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: ADAMS 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.? 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: 04/23/2019

Comments:

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 ☐ Indian

Mineral 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.)

T1S-R68W Section 2: SE

Total Acres in Described Lease: 160 Described Mineral Lease is: ☒ Fee ☐ State ☐ Federal ☐ Indian

Federal or State Lease #

SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 506 Feet
Building Unit: 505 Feet
Public Road: 282 Feet
Above Ground Utility: 277 Feet
Railroad: 575 Feet
Property Line: 53 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 | 407-1902 | 640 | T1S-R68W Section 2: E2, Section 11: E2 |

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: 460 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: 505 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. Order 407-1902

SPACING & FORMATIONS COMMENTS

DRILLING PROGRAM

Proposed Total Measured Depth: 21032 Feet

TVD at Proposed Total Measured Depth 7491 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: 119 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? 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 |
|-------------|--------------|----------------|-------|-------|---------------|---------------|-----------|---------|---------|
| SURF | 13+1/2 | 9+5/8 | J-55 | 36 | 0 | 2000 | 789 | 2000 | 0 |
| 1ST | 8+1/2 | 5+1/2 | P-110 | 20 | 0 | 21032 | 3826 | 21032 | |

☒ 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 | Fox Hills Sandstone | 580 | 580 | 950 | 950 | 1001-10000 | Other | COGCC UPWQ Study |
| Confining Layer | Pierre Shale | 950 | 950 | 1020 | 1020 | | | |
| Groundwater | UPIR/Pawnee Aquifer | 1020 | 1020 | 1450 | 1450 | 1001-10000 | Other | COGCC UPWQ Study |
| Confining Layer | Pierre Shale | 1450 | 1450 | 4410 | 4410 | | | |
| Hydrocarbon | Parkman | 4410 | 4410 | 4560 | 4560 | | | |
| Confining Layer | Pierre Shale | 4560 | 4560 | 4795 | 4795 | | | |
| Hydrocarbon | Sussex | 4795 | 4795 | 4986 | 4986 | | | |
| Confining Layer | Pierre Shale | 4986 | 4986 | 5975 | 5975 | | | |
| Hydrocarbon | Shannon | 5975 | 5975 | 6070 | 6070 | | | |
| Confining Layer | Pierre Shale | 6070 | 6070 | 11425 | 7376 | | | |
| Subsurface Hazard | Sharon Springs Shale | 11425 | 7376 | 11642 | 7396 | | | |
| Hydrocarbon | Niobrara | 11642 | 7396 | 21032 | 7491 | | | |

OPERATOR COMMENTS AND SUBMITTAL

Comments

The distance to the completed portion of the nearest well on the "Spacing and Formations" tab was measured to the Rio 14N (Doc 403164064) using COGCC GIS mapping, 2D plain view. The distance to the nearest wellbore belonging to another operator on the "Drilling Plan" tab was measured to the plugged and abandoned Sack 7-1 (05-001-09503) via the anti-collision report attached in the deviated drilling plan.

The subject well will have a treated interval less than 175' from the treated interval of the below listed wells.
Sack 7-11 (05-001-09503), 119', PA, KP Kauffman
Sack G Unit 1 (05-001-08895), 130', PA, KP Kauffman

The surface owner of this location is also the encroached upon surface owner. Property line waivers are attached.

An Exception Location Request to Order No. 407-1902 is attached, requesting this well to be drilled from the Rio LC Pad to produce within the Ivey North Unit.

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

Oil and Gas Development Plan Name _____ OGDID#: _____

Location ID: 465146

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

Signed: _____ Print Name: Ally Ota

Title: Regulatory Analyst Date: 9/26/2022 Email: alexandria.ota@pdce.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 COGCC Rules, applicable orders, and SB 19-181 and is hereby approved.

COGCC Approved:  Director of COGCC Date: 11/9/2022

Expiration Date: 11/08/2025

API NUMBER

05 001 10526 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> |
|--------------------------------|---|
| Drilling/Completion Operations | 1) Submit Form 42 electronically to COGCC 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. 2) Comply with Rule 408.j. and provide cement coverage from TD to a minimum of 500' above Niobrara and from 500' below Sussex to 500' above Sussex. Verify coverage with a cement bond log. 3) Oil based drilling fluid can only be used after all groundwater has been isolated. |
| Drilling/Completion Operations | 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 is observed or if there is continuous flow, Operator must contact COGCC engineering for approval prior to stimulation. 2) If a delayed completion, a second test is required between 6-9 months after rig release and must be conducted prior to stimulation. If any pressure greater than 200 psi is observed or if there is continuous flow, Operator must contact COGCC engineering for approval prior to stimulation. 3) A post-production test within 60 days after first sales, as reported on the Form 10, Certificate of Clearance. |
| 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 | 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. |
| 2 | Drilling/Completion Operations | ALTERNATIVE PROGRAM: An existing well on the pad (Rio LC 12-242HC 05-001-09950) was logged with open-hole resistivity log and 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: 2 comment(s)

Attachment List

| <u>Att Doc Num</u> | <u>Name</u> |
|--------------------|----------------------------|
| 403162638 | FORM 2 SUBMITTED |
| 403164209 | OffsetWellEvaluations Data |
| 403168785 | DEVIATED DRILLING PLAN |
| 403168786 | DIRECTIONAL DATA |

| | |
|-----------|------------------------|
| 403168788 | EXCEPTION LOC REQUEST |
| 403168789 | EXCEPTION LOC WAIVERS |
| 403168791 | EXCEPTION LOC REQUEST |
| 403168794 | WELL LOCATION PLAT |
| 403224610 | OFFSET WELL EVALUATION |

Total Attach: 9 Files

General Comments

| <u>User Group</u> | <u>Comment</u> | <u>Comment Date</u> |
|--------------------------|---|----------------------------|
| Permit | Final Review Completed. | 11/03/2022 |
| Engineer | Updated the well status of wells within 175' of planned well on the Submit Tab to PA. Operator concurs. | 11/03/2022 |
| OGLA | This Location and its associated materials were fully reviewed in the review of this APD in accordance with current Rules. See Sundry Doc #403204210 in Location #465146 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. | 11/03/2022 |
| Permit | Permitting Review Complete. | 09/30/2022 |

Total: 4 comment(s)