



Base of Productive Zone (BPZ)

Sec: 18 Twp: 6N Rng: 64W Footage at BPZ: 200 FSL 1544 FEL
Measured Depth of BPZ: 17786 True Vertical Depth of BPZ: 6950 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 18 Twp: 6N Rng: 64W Footage at BHL: 200 FSL 1544 FEL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: WELD 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? [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: 01/08/2020

Comments: CDP WOGLA 1041WOGLA19-0042 filed 12/10/2019, recorded 1/8/2020. A site-specific WOGLA will be filed prior to commencement of operations.

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.)

E/2NE/4, Section 7, T6N-R64W, 6th P.M.

Total Acres in Described Lease: 72 Described Mineral Lease is: [X] Fee [ ] State [ ] Federal [ ] Indian

Federal or State Lease #

**SAFETY SETBACK INFORMATION**

Distance from Well to nearest:

Building: 532 Feet  
 Building Unit: 753 Feet  
 Public Road: 526 Feet  
 Above Ground Utility: 509 Feet  
 Railroad: 5280 Feet  
 Property Line: 408 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           | 407-2958                | 1223                          | T6N-R64W, 6th P.M., Sec. 7: Lots 1 (65.62), 2 (65.50), E/2W/2, E/2 (a/d/a ALL), Sec. 18: Lots 1 (65.64), 2 (66.04), E/2W/2, E/2 (a/d/a 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: 200 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: 1903 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 and Spacing Unit configuration: T6N-R64W, 6th P.M., Sec. 7: Lots 1 (65.62), 2 (65.50), E/2W/2, E/2 (a/d/a ALL), Sec. 18: Lots 1 (65.64), 2 (66.04), E/2W/2, E/2 (a/d/a ALL). See the Approved Spacing Order No. 407-2958.

## DRILLING PROGRAM

Proposed Total Measured Depth: 17786 Feet

TVD at Proposed Total Measured Depth 6950 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: 10 Feet  No well belonging to another operator within 1,500 feet

Will a closed-loop drilling system be used? Yes

Is H<sub>2</sub>S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? No If yes, attach an H<sub>2</sub>S 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             | A-52A | 36.94 | 0             | 80            | 175       | 80      | 0       |
| SURF        | 13+1/2       | 9+5/8          | J-55  | 36    | 0             | 1850          | 640       | 1850    | 0       |
| 1ST         | 8+1/2        | 5+1/2          | P-110 | 17    | 0             | 17786         | 2043      | 17786   |         |

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     | Surface Alluvium     | 0        | 0          | 205         | 205           | 1001-10000 | Groundwater Sample | COGCC Environmental Sample Site #753271   |
| Groundwater     | Laramie Fox Hills    | 205      | 205        | 360         | 360           | 1001-10000 | Groundwater Sample | COGCC Environmental Sample Site #752419, 752281   |
| Confining Layer | Pierre Shale         | 360      | 360        | 420         | 420           |            |                    |   |
| Groundwater     | Upper Pierre Aquifer | 420      | 420        | 1600        | 1600          | 1001-10000 | Other              | COGCC Project #2141, Figure 5   |
| Confining Layer | Pierre Shale         | 1600     | 1600       | 3600        | 3530          |            |                    |   |
| Hydrocarbon     | Parkman              | 3600     | 3530       | 4200        | 4070          |            |                    |   |
| Confining Layer | Pierre Shale         | 4200     | 4070       | 4300        | 4120          |            |                    |   |
| Hydrocarbon     | Sussex               | 4300     | 4120       | 4700        | 4590          |            |                    |   |
| Confining Layer | Pierre Shale         | 4700     | 4590       | 5100        | 4900          |            |                    |   |
| Hydrocarbon     | Shannon              | 5100     | 4900       | 5200        | 5065          |            |                    |   |
| Confining Layer | Pierre Shale         | 5200     | 5065       | 6200        | 5970          |            |                    |   |
| Hydrocarbon     | Tepee Buttes         | 6200     | 5970       | 6800        | 6540          |            |                    |   |
| Confining Layer | Pierre Shale         | 6800     | 6540       | 7050        | 6720          |            |                    |   |
| Hydrocarbon     | Niobrara             | 7050     | 6720       | 17786       | 6950          |            |                    | Potential Flow Formation Table: 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 Noble Energy shall isolate both the Fox Hills and Upper Pierre Aquifers with surface casing from hydrocarbon bearing zones and exposure to oil-based drilling fluid. Noble Energy also agrees to not expose the Upper Pierre Aquifers to oil-based mud.

The nearest well in unit per 2-D calculation is the Bishop A18-742 @ 581'.  
 The nearest outside operated well per anti-collision is the Dyer 41-7 (API: 05-123-20669) SI Status @ 10'. Producing zones are >150' apart; no 408.u is required.  
 Wells also within 150':  
 Carlson A18-17 (API: 05-123-32627) PA Status @ 105'. Well is Noble operated and is PA Status; no 408.u is required.  
 Foose PC A18-65HN (API: 05-123-35047) PR Status @ 6'. Well is Noble operated; no 408.u is required.

This application is in a Comprehensive Area Plan No CAP #: \_\_\_\_\_  
 Oil and Gas Development Plan Name WR OGD 1 OGD ID#: 481728  
 Location ID: 483510

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

Signed: \_\_\_\_\_ Print Name: Ann Feldman

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: \_\_\_\_\_  
 Expiration Date: \_\_\_\_\_

**API NUMBER**  
 05

### 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> |
|-----------------|--------------------|
| 0 COA           |                    |

### Best Management Practices

| <u>No</u> | <u>BMP/COA Type</u>            | <u>Description</u>   |
|-----------|--------------------------------|--|
| 1         | Drilling/Completion Operations | Open-Hole Logging Exception: One of the first wells drilled on the pad during the first rig occupation will be logged with cased-hole neutron 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 in that well and have those logs attached. The Form 5 for each well will state "Open-Hole Logging Exception - 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.   |
| 2         | Drilling/Completion Operations | If a skid is performed for the subject well, then the only required BOPE tests are for the BOPE connection bonnet seal breaks, as long as a full BOPE test was performed at the beginning of the pad, and as long as all necessary BOPE tests are completed at least every 30 days during the pad operations.  |
| 3         | Drilling/Completion Operations | Anti-collision: Prior to drilling operations, Operator will perform an anti-collision scan of existing offset wells that have the potential of being within close proximity of the proposed well. This anti-collision scan will include definitive MWD or gyro surveys of the offset wells with included error of uncertainty per survey instrument and compared against the proposed well path with its respective error of uncertainty. If current surveys do not exist for the offset wells, Operator may have gyro surveys conducted to verify bottom hole location. The proposed well will only be drilled if the anti-collision scan results indicate that there is not a risk for collision, or harm to people or the environment. For the proposed well, upon conclusion of drilling operations, an as constructed gyro survey will be submitted to COGCC with the Form 5. |

Total: 3 comment(s)

### Attachment List

| <b>Att Doc Num</b> | <b>Name</b>                 |
|--------------------|-----------------------------|
| 403216757          | OPEN HOLE LOGGING EXCEPTION |
| 403295407          | WELL LOCATION PLAT          |
| 403295410          | DIRECTIONAL DATA            |
| 403295413          | DEVIATED DRILLING PLAN      |
| 403295636          | OffsetWellEvaluations Data  |

Total Attach: 5 Files

**General Comments**

| <b>User Group</b> | <b>Comment</b> | <b>Comment Date</b> |
|-------------------|----------------|---------------------|
|                   |                | Stamp Upon Approval |

Total: 0 comment(s)

