

LEASE INFORMATION

Using standard QtrQtr, Sec, Twp, Rng format, describe one entire mineral lease that will be produced by this well (Describe lease beneath surface location if produced. Attach separate description page or map if necessary.)

Township 6 North, Range 67W, 6th PM
Section 9: Part of the NE4

See attached lease map.

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

Federal or State Lease # _____

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: 1745 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 387 Feet

Building Unit: 527 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 353 Feet

Above Ground Utility: 340 Feet

Railroad: 5280 Feet

Property Line: 368 Feet

INSTRUCTIONS:

- All measurements shall be provided from center of the Proposed Well to nearest of each cultural feature as described in Rule 303.a.(5).
- 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, High Occupancy Building Unit, and Designated Outside Activity Area - as defined in 100-Series Rules.

DESIGNATED SETBACK LOCATION INFORMATION

Check all that apply. This location is within a: Buffer Zone
 Exception Zone
 Urban Mitigation Area

- Buffer Zone – as described in Rule 604.a.(2), within 1,000' of a Building Unit
- Exception Zone - as described in Rule 604.a.(1), within 500' of a Building Unit.
- Urban Mitigation Area - as defined in 100-Series Rules.

Pre-application Notifications (required if location is within 1,000 feet of a building unit):

Date of Rule 305.a.(1) Urban Mitigation Area Notification to Local Government: _____

Date of Rule 305.a.(2) Buffer Zone Notification to Building Unit Owners: 05/19/2016

SPACING and UNIT INFORMATION

Distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation: 165 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 460 Feet (Enter 5280 for distance greater than 1 mile.)

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

SPACING & FORMATIONS COMMENTS

Nearest wellbore permitted or completed in the same formation is the Winder South 8 (Common source CODL well).

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 | 407-1349 | 1280 | T6N R67W: Sec 8 & 9 |

DRILLING PROGRAM

Proposed Total Measured Depth: 17155 Feet

Distance from proposed wellbore to nearest existing or permitted wellbore belonging to another operator:

60 Feet (Including plugged wells)

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 Operations Plan)

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: [X] Annular Preventor [X] Double Ram [X] Rotating Head [] None

GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 318A

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Methods: Commercial Disposal

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

[Empty text box for Other Disposal Description]

Beneficial reuse or land application plan submitted?

Reuse Facility ID: or Document Number:

CASING PROGRAM

Table with 9 columns: Casing Type, Size of Hole, Size of Casing, Wt/Ft, Csg/Liner Top, Setting Depth, Sacks Cmt, Cmt Btm, Cmt Top. Rows include CONDUCTOR, SURF, and 1ST.

[] Conductor Casing is NOT planned

DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

- [] Rule 604.a.(1)A. Exception Zone (within 500' of Building Unit)
[] Rule 604.b.(1)A. Exception Location (existing or approved Oil & Gas Location now within a Designated Setback as a result of Rule 604.a.)
[] Rule 604.b.(1)B. Exception Location (existing or approved Oil & Gas Location is within a Designated Setback due to Building Unit construction after Location approval)
[] Rule 604.b.(2) Exception Location (SUA or site-specific development plan executed on or before August 1, 2013)
[] Rule 604.b.(3) Exception Location (Building Units constructed after August 1, 2013 within setback per an SUA or site-specific development plan)

GREATER WATTENBERG AREA LOCATION EXCEPTIONS

Check all that apply:

- [X] Rule 318A.a. Exception Location (GWA Windows).
[] Rule 318A.c. Exception Location (GWA Twinning).

RULE 502.b VARIANCE REQUEST

[] Rule 502.b. Variance Request from COGCC Rule or Spacing Order Number

OTHER LOCATION EXCEPTIONS

Check all that apply:

- Rule 318.c. Exception Location from Rule or Spacing Order Number _____
- Rule 603.a.(2) Exception Location (Property Line Setback).

ALL exceptions and variances require attached Request Letter(s). Refer to applicable rule for additional required attachments (e.g. waivers, certifications, SUAs).

OPERATOR COMMENTS AND SUBMITTAL

Comments Letter to the Director for COGCC Rules 318A.a. Exception Location for GWA Windows, attached as the Exception Loc Request.

Waiver for COGCC Rule 318A.a. is attached as Exception Loc Waiver.

Nearest permitted or existing wellbore belonging to another operator is the DeTienne FD 10-322HN API #05-123-41183.

The treated intervals of the DeTienne FD 10-322HN, DeTienne FD 10-322HC, DeTienne FD 10-319HN, DeTienne FD 10-359HN are greater than 150' from the completed portion of the proposed wellbore. No 317.s. consent is required.

This application is in a Comprehensive Drilling Plan _____ CDP #: _____

Location ID: _____

Is this application being submitted with an Oil and Gas Location Assessment application? _____ Yes _____

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

Signed: _____ Print Name: Jeff Annable _____

Title: Regulatory Analyst _____ Date: _____ Email: regulatory@petro-fs.com _____

Based on the information provided herein, this Application for Permit-to-Drill complies with COGCC Rules and applicable orders 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.

COA Type

Description

| COA Type | Description |
|----------|-------------|
| | |

Best Management Practices

| No | BMP/COA Type | Description |
|----|-----------------|---|
| 1 | Planning | Multi-Well Pads are located in a manner which allows for resource extraction while maintaining the highest distances possible from the offsetting residential areas and complies with the wishes of the surface owner. A meeting with the surface owner will determine the fencing plan. |
| 2 | Traffic control | Access Roads: The access road will be constructed to accommodate local emergency vehicles. This road will be maintained for access at all times. A traffic study is not required to obtain an access in Weld County. |

| | | |
|----|--|---|
| 3 | General Housekeeping | <p>Visual Impacts: Equipment, regardless of construction date, which are observable from any public highway shall be painted with uniform, non-contrasting, non-reflective color tones (similar to the Munsell Soil Color Coding System), and with colors matched to, but slightly darker than, the surrounding landscape.</p> <p>Maintain appearance with garbage clean-up; a trash bin will be located on site to accumulate waste by the personnel drilling the wells. Site will have unused equipment, trash and junk removed immediately. Operator shall keep the Surface Use Area as well as any roads or other areas used by Operator safe and in good order, including control of noxious weeds litter and debris.</p> |
| 4 | Storm Water/Erosion Control | <p>Use water bars, and other measures to prevent erosion and non-source pollution. Implement and maintain BMPs to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, and site degradation. Co-locate gas and water gathering lines whenever feasible, and mitigate any erosion problems that arise due to the construction of any pipeline(s).</p> |
| 5 | Material Handling and Spill Prevention | <p>Leak Detention Plan: Operator will monitor production facilities on a regular schedule to identify fluid leaks, including, but not limited to, visually inspecting all wellheads, tanks and fittings. Additionally annual SPCC inspections will be conducted and documented.</p> <p>Control of fire hazards: All material that is considered a fire hazard shall be a minimum of 25' from the wellhead tanks or separators. Electrical equipment shall comply with API IRP 500 and will comply with the current national electrical code. Operator shall comply with state and federal laws, rules and regulations governing the presence of any petroleum products, toxic or hazardous chemicals or wastes on the Subject lands.</p> <p>Annual flowline testing will also occur according to COGCC rules 1101 and 1102. Inspection and record retention of flowline testing will be in accordance per COGCC regulation. All records will be made available to the COGCC upon to request.</p> |
| 6 | Dust control | <p>Operator shall employ practices for control of fugitive dust caused by their operations. Such practices shall include but are not limited to the use of speed restrictions, regular road maintenance, restriction of construction activity during high- wind days, and silica dust controls when handling sand used in hydraulic fracturing operations. Additional management practices such as road surfacing, wind breaks and barriers may be used.</p> |
| 7 | Construction | <p>Guy line anchors: All guy line anchors shall be brightly marked pursuant to Rule 604.c. (2)Q.</p> |
| 8 | Noise mitigation | <p>Sound walls and/or hay bales will be used on the North, South, and East sides of the well site during drilling operations to shield sensitive areas.</p> <p>Baseline noise monitoring and testing will be conducted prior to commencement of construction and dirt work.</p> |
| 9 | Emissions mitigation | <p>Green Completions - Emission Control System: Test separators and associated flow lines and sand traps shall be installed on-site to accommodate green completions techniques pursuant to COGCC Rules. In the anticipated absence of a viable gas sales line, the flowback gas shall be thermally oxidized in an emissions control device (ECD), which will be installed and kept in operable condition for least the first 90-days of production pursuant to CDPHE rules. This ECD shall have an adequate capacity for 1.5 times the largest flowback within a 10 mile radius, will be flanged to route gas to other or permanent oxidizing equipment and shall be provided with the equipment needed to maintain combustions where non-combustible gases are present. Test separators and associated flow lines and sand traps shall be installed on-site to accommodate green completions techniques pursuant to COGCC Rules.</p> <p>Extraction will tie into the sales line immediately after flowback.</p> |
| 10 | Odor mitigation | <p>Equipment shall be operated in such a manner that odors and dust do not constitute a nuisance or hazard to public welfare.</p> <p>Oil and gas operations shall be in compliance with the Department of Public Health and Environment, Air Quality Control Commission, Regulation No. 2 Odor Emission, 5 C.C.R. 1001-4, Regulation No. 3 (5 C.C.R. 1001-5), and Regulation No. 7 Section XVII.B.1 (a-c) and Section XII.</p> |

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|----|--------------------------------|--|
| 11 | Drilling/Completion Operations | <p>A closed –loop system will be used for drilling operations.</p> <p>Blowout Prevention Equipment (“BOPE”): A double ram and annular preventer will be used during drilling. Stabbing valves shall be installed in the event of reverse circulation and shall be prior tested with low and high pressure fluid.</p> <p>Bradenhead Monitoring: Operator acknowledges and will comply with COGCC Policy for Bradenhead Monitoring during Hydraulic Fracturing Treatments in the Greater Wattenberg Area dated May 29, 2012.</p> |
| 12 | Drilling/Completion Operations | Open hole resistivity and gamma logs shall be run to describe the stratigraphy of the entire well bore and to adequately verify the setting depth of surface casing and aquifer coverage. On a multi-well pad, these open hole logs are only required on one of the first wells drilled on the pad and the Drilling Completion Report - Form 5 for every well on the pad shall identify which well was logged. |
| 13 | Interim Reclamation | Operator shall be responsible for segregating the topsoil, backfilling, repacking, reseeded, and recontouring the surface of any disturbed area so as not to interfere with Owner’s operations and shall reclaim such area to be returned to pre-existing conditions as best as possible with control of all noxious weeds. |
| 14 | Final Reclamation | Within 90 days subsequent to the time of plugging and abandonment of the entire site, superfluous debris and equipment shall be removed from the site. The Operator shall restore the surface of the Land affected by such terminated operations as near as possible to the previous state that existed prior to operations. |

Total: 14 comment(s)

Attachment Check List

| <u>Att Doc Num</u> | <u>Name</u> |
|--------------------|----------------------------|
| 401064947 | OffsetWellEvaluations Data |
| 401064948 | DIRECTIONAL DATA |
| 401064949 | DEVIATED DRILLING PLAN |
| 401064950 | EXCEPTION LOC WAIVERS |
| 401064951 | EXCEPTION LOC REQUEST |
| 401064952 | LEASE MAP |
| 401064953 | WELL LOCATION PLAT |

Total Attach: 7 Files

General Comments

| <u>User Group</u> | <u>Comment</u> | <u>Comment Date</u> |
|-------------------|----------------|---------------------|
| | | |

Total: 0 comment(s)