

FORM

2

Rev
08/16

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:

401152418

APPLICATION FOR PERMIT TO:

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

Date Received:

01/26/2017

TYPE OF WELL OIL ☒ GAS ☐ COALBED ☐ OTHER _____Refiling ☐ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐Sidetrack ☐

Well Name: Sanford

Well Number: J30-665

Name of Operator: NOBLE ENERGY INC

COGCC Operator Number: 100322

Address: 1625 BROADWAY STE 2200

City: DENVER State: CO Zip: 80202

Contact Name: Jan Kajiwara

Phone: (303)228-4092

Fax: ()

Email: jan.kajiwara@nblenergy.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20030009

WELL LOCATION INFORMATION

QtrQtr: SENW Sec: 29 Twp: 5N Rng: 66W Meridian: 6

Latitude: 40.371110

Longitude: -104.804950

Footage at Surface: 2422 Feet FNL/FSL FNL 2202 Feet FEL/FWL FWL

Field Name: WATTENBERG

Field Number: 90750

Ground Elevation: 4901

County: WELD

GPS Data:

Date of Measurement: 06/13/2016 PDOP Reading: 2.3 Instrument Operator's Name: Brian Rottinghaus

If well is ☐ Directional ☒ Horizontal (highly deviated) submit deviated drilling plan.

Footage at Top of Prod Zone: FNL/FSL FNL/FWL Bottom Hole: FNL/FSL FNL/FWL

 1750 FNL 2325 FWL 1650 FNL 460 FWL
 Sec: 29 Twp: 5N Rng: 66W Sec: 30 Twp: 5N Rng: 66W

LOCATION SURFACE & MINERALS & RIGHT TO CONSTRUCT

Surface Ownership: ☒ Fee ☐ State ☐ Federal ☐ IndianThe Surface Owner is: ☒ is the mineral owner beneath the location.

(check all that apply)

☒ is committed to an Oil and Gas Lease.☒ has signed the Oil and Gas Lease.☐ is the applicant.The Mineral Owner beneath this Oil and Gas Location is: ☒ Fee ☐ State ☐ Federal ☐ Indian

The Minerals beneath this Oil and Gas Location will be developed by this Well: Yes

The right to construct the Oil and Gas Location is granted by: oil and gas lease

Surface damage assurance if no agreement is in place:

Surface Surety ID:

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.)

5N-66W Sec. 29: NW, N2N2SW

Total Acres in Described Lease: 200 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: 0 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 1895 Feet
Building Unit: 1925 Feet
High Occupancy Building Unit: 5280 Feet
Designated Outside Activity Area: 5280 Feet
Public Road: 414 Feet
Above Ground Utility: 395 Feet
Railroad: 5280 Feet
Property Line: 430 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:

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: 141 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

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	407-2113	2560	Sec 27,28,29,30: All

DRILLING PROGRAM

Proposed Total Measured Depth: 14841 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: 51 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 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: ☒ Annular Preventor ☒ Double Ram ☒ 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:

Beneficial reuse or land application plan submitted?

Reuse Facility ID: or Document Number:

CASING PROGRAM

Casing Type	Size of Hole	Size of Casing	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
CONDUCTOR	26	16	40	0	80	6	80	0
SURF	13+3/4	9+5/8	36	0	1850	658	1850	0
1ST	8+1/2	5+1/2	20	0	14841	1917		

☐ 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:

- ☒ 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 Sixteen well pad: Sanford J30-670 (401152419), J30-665 (401152418), J30-660 (401152417), J30-655 (401152416), J30-650 (401153889), J30-645 (401153888), J30-640 (401153887), J30-635 (401153886), J29-670 (401152415), J29-665 (401152414), J29-660 (401152413), J29-655 (401152412), J29-650 (401153885), J29-645 (401153884), J29-640 (401153883), J29-635 (401153882). J29-06 Reference Pad (401152420). Producing at J29-03 Multi (401152410).

Nearest well in the same formation calculated using COGCC data = 141' Operator: Noble Energy, Inc. Well Name Sanford J29-665. Nearest outside operated well, calculated using COGCC data = 51' Extraction Kammerzell 29-4H, API 05-123-17938.
Please see Anti-Collision BMP.

Noble Energy, Inc. intends to permit this well as a monobore. No intermediate casing will be run. The surface casing will be set to cover the base of the Pierre Aquifer for Oil Based Mud considerations. Oil Based Mud will be planned for the production hole interval only. 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 Aquifer to oil based mud. All cuttings will be taken to a certified disposal.
Exception Location and Twinning waiver language is included in attached SUA (Page 4, Section 6, Paragraph A).

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: Jan Kajiwara

Title: Regulatory Analyst III Date: 1/26/2017 Email: regulatorynotification@nblener

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 and applicable orders and is hereby approved.

COGCC Approved: Matthew Lee Director of COGCC Date: 9/29/2017

Expiration Date: 09/28/2019

API NUMBER

05 123 45565 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.

COA Type	Description
	Please email documentation, including third party verification, that the operator did not stimulate within 150' of an existing wellbore operated by a different operator without a signed waiver from that operator within 10 days of first sale from this well to steve.jenkins@state.co.us with subject line Stimulation Setback Verification.
	<p>In the operator comment box of the Form 5A, operator must certify that the operator did not stimulate within 150' of an existing wellbore operated by a different operator without a signed waiver from that operator and documentation exists to demonstrate this fact. This will include existing wellbores from a different operator that were not originally within 150' of the planned wellbore, but did end up within 150' of the as-drilled wellbore. Operator agrees to provide this documentation within two business days via email if requested by COGCC staff.</p> <p>Additionally for the wells below, operator must provide in that same operator comment box, the name and API of the well, nearest perforation to that well, and final separation (wellbore to wellbore distance) from that well:</p> <p>Kammerzell 29-4H, API 123-17938</p>
	<p>Bradenhead tests shall be performed and reported according to the following schedule and Form 17 submitted within 10 days of each test:</p> <ol style="list-style-type: none"> 1) Within 60 days of rig release and prior to stimulation or 2) If a delayed completion, 6-7 months after rig release and prior to stimulation. 3) Within 30 days after first production, as reported on Form 5A.
	<ol style="list-style-type: none"> 1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU (Spud Notice), for the first well/activity on the pad and provide 48 hour spud notice for all subsequent wells drilled on the pad. 2) Comply with Rule 317.j and provide cement coverage from the end of production casing to a minimum of 200' above Niobrara. Verify coverage with cement bond log.
	<p>Operator acknowledges the proximity of the listed non-operated wells: Operator agrees to: provide mitigation option 3 (per the DJ Basin Horizontal Offset Policy) to mitigate the situation, ensure all applicable documentation is submitted based on the selected mitigation option chosen, and submit a Form 42 ("OFFSET MITIGATION COMPLETED") for the remediated wells, referencing the API number of the proposed horizontal well(s) stating what appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of these wells.</p> <p>API NO 123-07267, UPRR 61 PAN AM B1 API NO 123-23203, GRACIE J27-19</p>
	<p>Operator acknowledges the proximity of the following non-operated listed wells: Operator agrees to: provide mitigation option 1 or 2 (per the DJ Basin Horizontal Offset Policy) to mitigate the situation, ensure all applicable documentation is submitted based on the selected mitigation option chosen, and submit a Form 42 ("OFFSET MITIGATION COMPLETED") for the remediated wells, referencing the API number of the proposed horizontal well(s) stating what appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of these wells.</p> <p>API NO 123-11105, HOMOYAK 1 API NO 123-11859, HOMOYAK 2 API NO 123-17938, KAMMERZELL 29-4H6 API NO 123-17939, KAMMERZELL 29-5 API NO 123-11104, KNISTER 1 API NO 123-12079, KAMMERZELL 1</p>
	<p>Operator acknowledges the proximity of the listed wells: Operator agrees to: provide mitigation option 1 or 2 (per the DJ Basin Horizontal Offset Policy) to mitigate the situation, ensure all applicable documentation is submitted based on the selected mitigation option chosen, and submit a Form 42 ("OFFSET MITIGATION</p>

COMPLETED") for the remediated wells, referencing the API number of the proposed horizontal well(s) stating what appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of these wells.

API NO 123-15600, SHAFTO J27-10
API NO 123-15654, UPRC 27-11C
API NO 123-15655, UPRC 27-12C
API NO 123-16379, UPRC 27-14C
API NO 123-16824, RAISLEY 44-27
API NO 123-16825, RAISLEY 34-27
API NO 123-17538, UPRC 27-3C
API NO 123-17594, UPRC 27-4C
API NO 123-17595, UPRC 27-5C
API NO 123-18473, UPV 27-7H6
API NO 123-18474, UPV 27-8H6
API NO 123-18476, UPV 27-1H6
API NO 123-18477, UPV 27-2H6
API NO 123-11895, WIEDEMAN 1
API NO 123-12503, ZIONS FNB 1
API NO 123-13968, MOSSBERG PM J28-16
API NO 123-13988, COLTRANE-PM J 28-4
API NO 123-14002, WIEDEMAN-PM J28-2
API NO 123-14003, WIEDEMAN-PM J28-7
API NO 123-14202, ZION PM J 28-13
API NO 123-18029, WIEDEMAN 28-1H6
API NO 123-18156, MOSSBERG 28-15H6
API NO 123-18373, IGO 28-3H6
API NO 123-26341, WIEST J 28-25
API NO 123-26527, WIEDEMAN J 28-17
API NO 123-28020, MOSSBERG J 33-27
API NO 123-28027, MOSSBERG J 33-28
API NO 123-29472, WIEDEMAN J 28-18D
API NO 123-29473, WIEDEMAN J 28-21D
API NO 123-29474, WIEDEMAN J 28-22D
API NO 123-30887, IGO FARMS J 28-19D
API NO 123-30889, IGO FARMS J 28-20D
API NO 123-30891, IGO FARMS J 28-32D
API NO 123-30895, IGO FARMS J 28-31D
API NO 123-16442, UPRC 29-8C
API NO 123-16443, UPRC 29-7C
API NO 123-17937, KAMMERZELL 29-3H6
API NO 123-17940, KAMMERZELL 29-6H6
API NO 123-18650, UPV 29-1H6
API NO 123-18651, UPV 29-2H6
API NO 123-20662, CARLSON 10-29
API NO 123-20688, CARLSON 15-29
API NO 123-29136, BENSLER J 29-21D
API NO 123-29137, BENSLER J 29-17D
API NO 123-29138, BENSLER J 29-27D
API NO 123-29139, BENSLER J 29-18D
API NO 123-10751, LUNDVALL 3
API NO 123-10761, LUNDVALL 4
API NO 123-12517, LUNDVALL 1-30
API NO 123-13965, MOSSBERG PMJ 30-10
API NO 123-13990, MOSSBERG-PM J30-9
API NO 123-13997, RICKS-PM J30-12
API NO 123-13998, BERNHARDT-PM J30-13
API NO 123-18111, LUNDVALL 30-11H6
API NO 123-18112, MOSSBERG 30-15H6
API NO 123-22406, LUNDVALL J 30-25
API NO 123-23352, STEVE J 30-4J
API NO 123-23353, STEVE J 30-6
API NO 123-16856, BOOTH 25-11
API NO 123-17369, BOOTH 25-14

Best Management Practices

No	<u>BMP/COA Type</u>	<u>Description</u>
1	General Housekeeping	Housekeeping will consist of neat and orderly storage of materials and fluids. Wastes will be temporarily stored in sealed containers and regularly collected and disposed of at offsite, suitable facilities. If spills occur prompt cleanup is required to minimize any commingling of waste materials with stormwater runoff. Routine maintenance will be limited to fueling and lubrication of equipment. Drip pans will be used during routine fueling and maintenance to contain spills or leaks. Any waste product from maintenance will be containerized and transported offsite for disposal or recycling. There will be no major equipment overhauls conducted onsite. Equipment will be transported offsite for major overhauls. Cleanup of trash and discarded materials will be conducted at the end of each work day. Cleanup will consist of patrolling the roadway, access areas, and other work areas to pickup trash, scrap debris, other discarded materials, and any contaminated soil. These materials will be disposed of properly.
2	Storm Water/Erosion Control	Stormwater management plans (SWMP) are in place to address construction, drilling and operations associated with Oil & Gas development throughout the state of Colorado in accordance with Colorado Department of Public Health and Environment (CDPHE) General Permit No. COR- 038637. BMP's will be constructed around the perimeter of the site prior to, or at the beginning of construction. BMP's used will vary according to the location, and will remain in place and maintained until the pad reaches final reclamation.
3	Material Handling and Spill Prevention	Spill Prevention Control and Countermeasures (SPCC) plans are in place to address any possible spill associated with Oil & Gas operations throughout the state of Colorado in accordance with CFR 112.
4	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.
5	Drilling/Completion Operations	One of the first wells drilled on the pad will be logged with Cased hole Pulsed Neutron Log with Gamma Ray Log from 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 shall clearly state "No open-hole logs were run" and shall reference the Rule 317.p Exception granted for the well.
6	Drilling/Completion Operations	<p>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 bottomhole 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.</p> <p>During and Post stimulation: Noble Energy will comply with the COGCC Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area dated 5/29/12.</p>

Total: 6 comment(s)

Applicable Policies and Notices to Operators

Policy
Notice Concerning Operating Requirements for Wildlife Protection. http://cogcc.state.co.us/documents/reg/Policies/Wildlife_Notice.pdf
Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area. http://cogcc.state.co.us/documents/reg/Policies/PolicyGwaBradenheadMonitoringFinal.pdf

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
1696866	OPEN HOLE LOGGING EXCEPTION
401152418	FORM 2 SUBMITTED
401191897	DIRECTIONAL DATA
401191898	DEVIATED DRILLING PLAN
401191899	WELL LOCATION PLAT
401194230	SURFACE AGRMT/SURETY
401194920	EXCEPTION LOC REQUEST
401416525	OFFSET WELL EVALUATION

Total Attach: 8 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Attached the corrected Open hole logging exception letter and with operator's concurrence corrected distance to nearest building & building unit. Permitting Review Complete. Final Review Completed	09/26/2017
Permit	With operators concurrence changed the Distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation 0' to 141'. Per operator added Spacing order, unit acreage & unit. ON HOLD: requesting corrected Open hole logging exception letter and requesting corrected distance to nearest building & building unit.	09/20/2017
Permit	Operator requested Exception to Open Hole Logging Rule 317.p. See attached. Surface Use Agreement has waivers for Rule 318A.a & 318A.c. See page 4, Section 6. Paragraph A. ON HOLD: Requesting correction to Distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation.	04/20/2017
Engineer	Offset Wells Evaluated	03/15/2017
Engineer	Revised the distance from the proposed wellbore to nearest existing or permitted wellbore belonging to another operator from 223', to 51', to the Extraction Kammerzell 29-4H, API 123-17938, on the Drilling & Waste Plans tab. Operator agreed.	03/09/2017
Permit	Passed completeness.	02/03/2017

Total: 6 comment(s)