

FORM  
2

Rev  
08/13

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:

400743933

APPLICATION FOR PERMIT TO:

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

TYPE OF WELL OIL ☐ GAS ☒ COALBED ☐ OTHER \_\_\_\_\_

Refilling ☐

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐

Sidetrack ☐

Date Received:

12/09/2014

Well Name: Bighorn

Well Number: 4C-17H P267

Name of Operator: ENCANA OIL & GAS (USA) INC

COGCC Operator Number: 100185

Address: 370 17TH ST STE 1700

City: DENVER State: CO

Zip: 80202-5632

Contact Name: Erin Lind

Phone: (720)876-5827

Fax: ( )

Email: erin.lind@encana.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20100017

WELL LOCATION INFORMATION

QtrQtr: SESE Sec: 17 Twp: 2N Rng: 67W Meridian: 6

Latitude: 40.133684

Longitude: -104.908055

Footage at Surface: 926 feet FNL/FSL FSL 800 feet FEL/FWL FEL

Field Name: WATTENBERG

Field Number: 90750

Ground Elevation: 4959

County: WELD

GPS Data:

Date of Measurement: 07/03/2014 PDOP Reading: 1.2 Instrument Operator's Name: RYAN CHRISTI

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

Footage at Top of Prod Zone: FNL/FSL FSL 1136 FSL 1969 FEL 2206 FSL 2050 FEL  
Sec: 17 Twp: 2N Rng: 67W Sec: 8 Twp: 2N Rng: 67W

LOCATION SURFACE & MINERALS & RIGHT TO CONSTRUCT

Surface Ownership: ☒ Fee ☐ State ☐ Federal ☐ Indian

The 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: Surface Use Agreement

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.)

T2N-R67W Section 17: W2SE, SESE

Total Acres in Described Lease: 120 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: 769 Feet  
Building Unit: 922 Feet  
High Occupancy Building Unit: 5280 Feet  
Designated Outside Activity Area: 5280 Feet  
Public Road: 918 Feet  
Above Ground Utility: 953 Feet  
Railroad: 5280 Feet  
Property Line: 344 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: 07/29/2014

## SPACING and UNIT INFORMATION

Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in the same formation: 137 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

W2SE4 Sec. 8; W2E2 Sec. 17, T2N R67W

## 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		240	GWA

## DRILLING PROGRAM

Proposed Total Measured Depth: 14056 Feet

Distance to nearest permitted or existing wellbore penetrating objective formation: 54 Feet (Including plugged wells)

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 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? No

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: Land application

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Beneficial reuse

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	30	16	30	0	80	80	80	0
SURF	12+1/4	9+5/8	36	0	800	225	800	0
1ST	8+3/4	7	26	0	7703	510	7703	500
2ND	6+1/8	4+1/2	13.5	0	14056	375	14056	7403

☐ 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

The distance from completed portion of the proposed wellbore to nearest wellbore permitted/completed in the same formation is the Dier 4-4-8, API # 05-123-30576.  
The distance to nearest permitted or existing wellbore penetrating objective formation is the Miller 34-17J, API # 05-123-20945.  
This well is closer than 150' to the nearest permitted or producing wellbore. A 318A.m. exception location request letter is attached.  
Encana requests the approval of the omission of open hole logs; request letter attached.  
Additional BMPs for the entire location can be found on the Form 2A, document #400743930.

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: Erin Lind

Title: Regulatory Analyst Date: 12/9/2014 Email: erin.lind@encana.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 and applicable orders and is hereby approved.

COGCC Approved:  Director of COGCC Date: 2/20/2015

Expiration Date: 02/19/2017

**API NUMBER**

05 123 41187 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>
	<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), ensure all applicable documentation is submitted , and submit a Form 42(s) ("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 this well.</p> <p>Dier 4-8 (API #05-123-14640)</p>
	<p>Operator acknowledges the proximity of the listed non-operated wells. Operator agrees to provide mitigation Option 1 or 2 (per the DJ Basin Horizontal Offset Policy), ensure all applicable documentation is submitted, and submit Form 42(s) ("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 this well.</p> <p>Alvin State 1 (API #05-123-10602) Miller 1 (API #05-123-07272) Miller 2-17 (API #05-123-16647) Perrin Gas Unit 1 (API #05-123-09841)</p>
	<p>1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU. 2) Comply with Rule 317.j and provide cement coverage from end of 7" casing to a minimum of 200' above Niobrara and from 200' below the Shannon to 200' above Sussex. Verify coverage with cement bond log. 3) Comply with Rule 321. Run and submit Directional Survey from TD to base of surface casing. Ensure that the wellbore complies with setback requirements in commission orders or rules prior to producing the well.</p>
	<p>Operator shall comply with Buffer Zone Move-In, Rig-Up Notice Rule 305.h (effective 9/30/2014).</p>

## **Best Management Practices**

<b>No</b>	<b>BMP/COA Type</b>	<b>Description</b>
1	Drilling/Completion Operations	Encana will comply with the "COGCC Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area", dated May 29, 2012.
2	Drilling/Completion Operations	Prior to drilling operations, Encana 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 wellpath with its respective error of uncertainty. If current surveys do not exist for the offset wells, the 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.
3	Drilling/Completion Operations	604.c.(2)L. - No drill stem tests will be performed.
4	Drilling/Completion Operations	604.c.(2)J.ii. - Backup stabbing valves shall be required on well servicing operations during reverse circulation. Valves shall be pressure tested before each well servicing operation using both low-pressure air and high-pressure fluid.
5	Drilling/Completion Operations	604.c.(2)J.i. - Adequate blowout prevention equipment will be used on all well servicing operations.
6	Drilling/Completion Operations	604.c.(2)I. - Upon initial rig-up and at least once every thirty (30) days during drilling operations thereafter, pressure testing of the casing string and each component of the blowout prevention equipment including flange connections will be performed to seventy percent (70%) of working pressure or seventy percent (70%) of the internal yield of casing, whichever is less. Pressure testing shall be conducted and the documented results will be retained by the operator for inspection by the Director for a period of one (1) year. Activation of the pipe rams for function testing shall be conducted on a daily basis when practicable.
7	Drilling/Completion Operations	604.c.(2)H.i. & ii. - Encana will employ a rig without kelly that has double ram with blind and pipe ram and an annular preventer. At least one person at the well site during drilling operations will have Mineral Management certification or Director approved training for blowout prevention.

Total: 7 comment(s)

## **Applicable Policies and Notices to Operators**

Notice Concerning Operating Requirements for Wildlife Protection.

Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area.

## **Attachment Check List**

<b><u>Att Doc Num</u></b>	<b><u>Name</u></b>
2238316	OPEN HOLE LOGGING EXCEPTION REQUEST
400743933	FORM 2 SUBMITTED
400744811	WELL LOCATION PLAT
400744813	DEVIATED DRILLING PLAN
400744821	EXCEPTION LOC REQUEST
400744822	PROPOSED SPACING UNIT
400744833	EXCEPTION LOC WAIVERS
400744839	SURFACE AGRMT/SURETY
400744840	DIRECTIONAL DATA
400745664	OffsetWellEvaluations Data
400745665	ANTI-COLLISION WAIVER

Total Attach: 11 Files

### **General Comments**

<b><u>User Group</u></b>	<b><u>Comment</u></b>	<b><u>Comment Date</u></b>
Permit	Final Review Completed. No LGD or public comment received.	2/18/2015 3:31:20 PM
Engineer	Offset wells evaluated.	2/12/2015 10:25:24 AM
Permit	Request for Exception to Open Hole Logging Rule 317.p letter attached. Existing induction log Miller 3-17J, is 580' away from the SHL of proposed wells and has an induction log down to 8000'	1/5/2015 9:55:58 AM
Permit	Passed completeness.	12/10/2014 10:07:26 AM

Total: 4 comment(s)