

APPLICATION FOR PERMIT TO:

Drill Deepen Re-enter Recomplete and Operate

TYPE OF WELL OIL <input checked="" type="checkbox"/> GAS <input type="checkbox"/> COALBED <input type="checkbox"/> OTHER: _____	Refilling <input type="checkbox"/>	Date Received: 01/22/2019
ZONE TYPE SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONES <input type="checkbox"/> COMMINGLE ZONES <input type="checkbox"/>	Sidetrack <input type="checkbox"/>	

Well Name: NORTHWEST B Well Number: S20-25-18N

Name of Operator: EXTRACTION OIL & GAS INC COGCC Operator Number: 10459

Address: 370 17TH STREET SUITE 5300

City: DENVER State: CO Zip: 80202

Contact Name: Bonnie Lamond Phone: (720)481-2379 Fax: ()

Email: blamond@extractionog.com

RECLAMATION FINANCIAL ASSURANCE
Plugging and Abandonment Bond Surety ID: 20130028

WELL LOCATION INFORMATION

QtrQtr: NENW Sec: 9 Twp: 1S Rng: 68W Meridian: 6

Latitude: 39.983539 Longitude: -105.010012

Footage at Surface: <u>1149</u> Feet	FNL/FSL	FEL/FWL
<u>FNL</u> <u>1629</u> Feet	<u>FNL</u> <u>1629</u> Feet	<u>FWL</u>

Field Name: WATTENBERG Field Number: 90750

Ground Elevation: 5299 County: BROOMFIELD

GPS Data:
Date of Measurement: 12/21/2017 PDOP Reading: 1.3 Instrument Operator's Name: T. WINNICKI

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

Footage at Top of Prod Zone: <u>480</u> Feet	FNL/FSL	FEL/FWL	Bottom Hole: <u>2204</u> Feet	FNL/FSL	FEL/FWL
<u>FNL</u> <u>350</u> Feet	<u>FNL</u> <u>350</u> Feet	<u>FEL</u> <u>353</u> Feet	<u>FNL</u> <u>353</u> Feet	<u>FNL</u> <u>353</u> Feet	<u>FEL</u> <u>353</u> Feet
Sec: <u>8</u> Twp: <u>1S</u> Rng: <u>68W</u>			Sec: <u>20</u> Twp: <u>1S</u> Rng: <u>68W</u>		

LOCAL GOVERNMENT INFORMATION

County: BROOMFIELD Municipality: _____

Per § 34-60-106 (1)(f)(I)(A), the following questions pertain to the "local government with jurisdiction to approve the siting of the proposed oil and gas location."

The local government with jurisdiction is: City and County

Does the local government with jurisdiction regulate the siting of Oil and Gas Locations, with respect to this COGCC application? If the local government has waived its right to precede the COGCC in siting determination, indicate by selecting "NO" here and selecting "Waived" below. 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 local government siting permit type is: Operator Agreement

The local government siting permit was filed on: 10/24/2017

The disposition of the application filed with the local government is: Approved

Additional explanation of local process:

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: No

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.)

Section 8-1S-68W: N/2

Total Acres in Described Lease: 320 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: 746 Feet
- Building Unit: 1040 Feet
- High Occupancy Building Unit: 4327 Feet
- Designated Outside Activity Area: 5280 Feet
- Public Road: 354 Feet
- Above Ground Utility: 1111 Feet
- Railroad: 5280 Feet
- Property Line: 123 Feet
- School Facility: 4327 Feet
- School Property Line: 4192 Feet
- Child Care Center: 5280 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, Designated Outside Activity Area, School Facility, and Child Care Center – 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: 01/29/2018

SPACING and UNIT INFORMATIONDistance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation: 290 FeetDistance 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

Proposed Spacing Unit:
 Section 8-1S-68W: E/2E/2
 Section 9-1S-68W: W/2W/2
 Section 16-1S-68W: W/2W/2
 Section 17-1S-68W: E/2E/2
 Section 20-1S-68W: E/2NE/4
 Section 21-1S-68W: W/2NW/4

If this Form 2 is associated with a Drilling and Spacing Unit application, provide docket number: _____

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		800	GWA

DRILLING PROGRAMProposed Total Measured Depth: 20985 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: 532 Feet No well belonging to another operator within 1,500 feetWill a closed-loop drilling system be used? YesIs 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? NoWill salt based (>15,000 ppm Cl) drilling fluids be used? NoWill oil based drilling fluids be used? YesBOP 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 DisposalCuttings 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	24	16	42	0	80	100	80	0
SURF	12+1/4	9+5/8	36	0	1500	400	1500	0
1ST	8+1/2	5+1/2	20	0	20985	2839	20985	

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

Anti-Collision report used to determine distances.

Distance from completed portion to nearest completed portion of wellbore permitted/completed in the same formation: 290' (Ref. well: NORTHWEST B S20-25-19N, Extraction)

Distance to nearest wellbore belonging to another operator: 532' (Ref. well: SWINK G UNIT 1, Status: PA, NORTH AMERICAN RESOURCES COMPANY)

All BMPs on the related Form 2A for the Northwest B pad are applicable to this well.

Exception Location Requested for Rule 603.a.(2). The SUA waives all Exception Locations. Please see the attached SUA including Section 13 and the relevant highlighted portions on page 8.

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

Location ID: 456775

Is this application being submitted with an Oil and Gas Location Assessment application? No

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

Signed: _____ Print Name: Bonnie Lamond

Title: Regulatory Analyst

Date: 1/22/2019

Email: blamond@extractionog.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: 10/23/2019

Expiration Date: 10/22/2021

API NUMBER

05 014 20854 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
Drilling/Completion Operations	This Permit to Drill is approved subject to all the BMPs and COAs on the most recently approved Form 2A and any subsequently approved Form 4 for the Oil and Gas Location (Location ID #456775). The most recently approved Form 2A and any subsequent Form 4s containing applicable COAs for this location shall be posted onsite during construction, drilling, and completions operations.
Drilling/Completion Operations	1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU (spud notice) for the first well activity with a rig on the pad and provide 48 hour spud notice via Form 42 for all subsequent wells drilled on the pad. 2) Comply with Rule 317.j. and provide cement coverage from TD to a minimum of 200' above Niobrara. Verify coverage with cement bond log. 3) Oil-based drilling fluid is to be used only after all fresh water aquifers are covered.
Drilling/Completion Operations	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 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. 014-08928 Brozovich MA 8-16J 001-08809 Maloney 2-16
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, must contact COGCC engineer prior to stimulation. 2) If a delayed completion, 6 months after rig release and prior to stimulation. If any pressure greater than 200 psi, must contact COGCC engineer prior to stimulation. 3) A post-production test within 60 days after first sales, as reported on the Form 10, Certificate of Clearance.

Best Management Practices

No	BMP/COA Type	Description
1	Drilling/Completion Operations	Operator acknowledges and will comply with COGCC policy for Bradenhead Monitoring during Hydraulic Fracturing treatments in the Greater Wattenberg Area dated May 29, 2012.
2	Drilling/Completion Operations	Anti-collision: 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.
3	Drilling/Completion Operations	Alternative Logging Program: One of the first wells drilled on the pad will be 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: 3 comment(s)

Applicable Policies and Notices to Operators

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

Att Doc Num	Name
1347695	EXCEPTION LOC REQUEST
2158199	OBJECTIVE CRITERIA REVIEW MEMO
401504546	FORM 2 SUBMITTED
401519107	DIRECTIONAL DATA
401519110	DEVIATED DRILLING PLAN
401524259	WELL LOCATION PLAT
401525387	SURFACE AGRMT/SURETY
401536335	OffsetWellEvaluations Data
401913205	PROPOSED SPACING UNIT
402219699	OFFSET WELL EVALUATION

Total Attach: 10 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Extraction filed an Application for hearing (Docket # 190900614) per Rule 318A.e.(5)C to resolve wellbore spacing unit objections filed by multiple minerals owners. Those objections were dismissed by order of the COGCC hearings officer.	10/23/2019
Permit	Final Review Completed.	10/23/2019
Permit	The Objective Criteria Review Memo (Doc# 2158199) is attached to this Form 2 Application for Permit to Drill (APD). Following additional analysis arising out of the Objective Criteria, the Director determined that this application meets the standard for the protection of public health, safety, welfare, the environment and wildlife resources set by SB 19-181.	10/23/2019
OGLA	Public Comments received for this Form 2 are summarized and addressed in COGCC Response to Public Comments (Doc# 2316416) saved in the file for Oil and Gas Location ID# 456775.	10/23/2019
OGLA	COGCC staff reviewed and considered all public comments received for this Form 2.	10/23/2019
Permit	The following changes were made with Operator concurrence: - local government disposition and school/childcare setback distance information entered per information provided by Operator	06/19/2019
Permit	Initial permitting review complete and task passed. The following changes were made with Operator concurrence: - corrected 317.p. logging BMP, corrected Location ID to "456775", and corrected "application being submitted with a location assessment" from "YES" to "NO" - corrected EXCEPTION LOC REQUEST attached	05/21/2019
Permit	Contacted Operator for the following corrections: - "Submit" tab: correct Location ID to "456775" and correct "application being submitted with a location assessment" from "YES" to "NO" - EXCEPTION LOC REQUEST attachment: letter improperly states location QtrQtr as "NWNW", but should be "NENW".	05/03/2019
LGD	As the Local Government Designee for the City and County of Broomfield (Broomfield), Broomfield would like to provide the COGCC with an update related to Extraction Oil and Gas, LLC (Extraction) Form 2A permits, by the Colorado Oil and Gas Conservation Commission (COGCC), including the following permit applications: Doc Number Well Name 401504460Interchange A S22-30-21N 401504448Interchange A S22-30-1C 401504547Northwest B S20-25-19N 401504546Northwest B S20-25-18N By way of an update to the COGCC, on October 24, 2017, Extraction and Broomfield entered into an Amended and Restated Operator Agreement (Agreement). The COGCC spacing orders for these spacing units, dated as of October 31, 2017, indicate that any Permits for the wells within these spacing units must "comport with" the Agreement. We would request that all Best Management Practices required by the Agreement be included as conditions on COGCC's Form 2s and Form 2As for these permit applications. We further request that COGCC include a note on all approved permits that Extraction must obtain all necessary permits from Broomfield prior to drilling the permitted wells.	02/26/2019
OGLA	Public comment period extended 10 days at the request of the Broomfield LGD. The new comment period end date is 2/27/19.	01/30/2019
Permit	Passed completeness.	01/28/2019

Total: 11 comment(s)

