

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:

400532345

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:

02/07/2014

Well Name: Churchill

Well Number: 28E-423

Name of Operator: PDC ENERGY INC

COGCC Operator Number: 69175

Address: 1775 SHERMAN STREET - STE 3000

City: DENVER State: CO Zip: 80203

Contact Name: Liz Lindow

Phone: (303)831-3974

Fax: ()

Email: liz.lindow@pdce.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20090078

WELL LOCATION INFORMATION

QtrQtr: NWNW Sec: 28 Twp: 5N Rng: 64W Meridian: 6

Latitude: 40.376900

Longitude: -104.559820

Footage at Surface: 250 feet FNL/FSL FNL 1245 feet FEL/FWL FWL

Field Name: WATTENBERG

Field Number: 90750

Ground Elevation: 4635

County: WELD

GPS Data:

Date of Measurement: 11/07/2013 PDOP Reading: 1.9 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

734 FNL 451 FWL 2143 FNL 405 FWL
Sec: 28 Twp: 5N Rng: 64W Sec: 33 Twp: 5N Rng: 64W

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: 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.)

Township 5 North-Range 64 West, 6th P.M. Section 28: NW/4

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: 0 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 659 Feet

Building Unit: 720 Feet

High Occupancy Building Unit: 2240 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 861 Feet

Above Ground Utility: 286 Feet

Railroad: 2900 Feet

Property Line: 250 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: 12/13/2013

SPACING and UNIT INFORMATION

Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in the same formation: 231 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 500 Feet (Enter 5280 for distance greater than 1 mile.)

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

SPACING & FORMATIONS COMMENTS

Spacing Unit Configuration: W2W2 Sec 28, E2E2 Sec. 29, W2NW Sec. 33, E2NE Sec. 32 in T5N R64W

OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
CODELL	CODL		480	GWA

DRILLING PROGRAM

Proposed Total Measured Depth: 13940 Feet

Distance to nearest permitted or existing wellbore penetrating objective formation: 231 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? 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: Recycle/reuse

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
SURF	12+1/4	9+5/8	36	0	875	830	875	0
1ST	8+3/4	7	26	0	7424	650	7424	500
1ST LINER	6+1/8	4+1/2	11.6	6108	13940			

☒ 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 7" casing string will be cemented to at least 200' above Niobrara, around 500' from surface. CBL will only be run in the vertical section of the wellbore. Distance to nearest well [Adamson 28-2] measured to via the Anti-Collision Report in the Deviated Drilling plan.

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: Liz Lindow

Title: Regulatory Analyst Date: 2/7/2014 Email: liz.lindow@pdce.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: Matthew Lee Director of COGCC Date: 7/12/2014

Expiration Date: 07/11/2016

API NUMBER

05 123 39869 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

	1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU. 2) Comply with Rule 317.i and provide cement coverage from end of 7" casing to a minimum of 200' above Niobrara. 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.
	Operator shall comply with Buffer Zone Move-In, Rig-Up Notice Policy dated 12-16-2013.
	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.

Best Management Practices

No	BMP/COA Type	Description
1	Planning	604c.(2).E. Multiwell Pads: This 2A application is for a 8-well pad. Entire area was reviewed at length for alternate locations. No other locations were suitable that would provide a greater distance between production facilities and building units. S2NW of Section 33 was reviewed and it was determined that 5 building units would be potentially within the 1000 ft. buffer area and extensive crop damage would occur. Section 33 has a large center pivot and approximately 40 acres would become unusable. No other suitable existing locations are in the area.
2	Planning	604c.(2).V. Development From Existing Well Pads: An existing pad was not available to utilize to develop these wells.
3	Planning	604.c.(2).W. Site Specific Measures: Vehicle tracking pads will be utilized at pad site to control mud and sediment from leaving pad construction site. 24 hour supervision will be provided for drilling and completion operations. Traffic will be directed as to minimize any congestion on county roads. Water will be used for dust abatement on dirt access road. Lighting will be provided during drilling and completion operations to ensure worker safety and compliance with all regulations. To the extent practicable, site lighting shall be directed downward and inward and shielded so as to avoid glare on public roads and building units within one thousand (1000) feet. Sound wall along north and west perimeter will also provide light mitigation.
4	Planning	604c.(2).I. BOPE Testing for Drilling Operations: PDC's contractors will supply a double ram-5000' PSI rated BOPE (Blinds and pipes) and always function test BOPE's prior to placement on the well head and inspect and replace all seals and ram block rubbers. After installation of the BOPE, PDCE conducts a pressure test on the BOPE at a low pressure of (200-400 psi) and a high pressure test to the maximum amount of the BOPE rating with a third party tester, all tests are digitally recorded.
5	Planning	604c.(2).J. BOPE for Well Servicing Operations: All valves will also be tested to maximum rating by a third party prior to being delivered to location. Whenever snubbing operations are being used the snubbing stack will be pressure tested at the same time the BOPE is being tested which consist of a single pipe ram and a annular bag.
6	Planning	604c.(2).L. Drill Stem Tests: PDC does not conduct drill stem tests, but will seek prior approval from the director if a drill stem test will be preformed.
7	Planning	604c.(2).U. Identification of Plugged and Abandoned Wells: Pursuant to rule 319.a. (5)., once the well has been plugged and abandoned, PDC will identify the location of the wellbore with a permanent monument that will detail the well name and date of plugging.
8	Traffic control	604c.(2).D. Traffic Plan: If required by the local government, a traffic plan will be coordinated with the local jurisdiction prior to commencement of operations.
9	General Housekeeping	604c.(2).N. Control of Fire Hazards: PDC will ensure that any material that might be deemed a fire hazard will be will remain no less than twenty-five (25) feet from the wellhead(s), tanks and separator(s). PDC installs automation equipment for tank level and pressure monitoring inside the bermed area that complies with API RP 500 classifications and with the current national electrical code as adopted by the State of Colorado.
10	General Housekeeping	604c.(2).P. Removal of Surface Trash: A commercial size trash bin for removing debris will be located on site. This bin will be for use by all parties affiliated with the operation.
11	General Housekeeping	604c.(2).T. Well Site Cleared: The wellsite will be cleared of all non-essential equipment within ninety (90) days after all wells associated with the pad have been plugged and abandoned.

12	Material Handling and Spill Prevention	604c.(2).F. Leak Detection Plan: See attached.
13	Material Handling and Spill Prevention	604c.(2).K. Pit Level Indicators: PDC uses an Electronic Drilling Recorder (EDR) with pit level monitor(s) and alarm(s) for production rigs. Basic level gages are used on steel pits utilized for the surface rig.
14	Construction	604c.(2).G. Berm Construction: A geosynthetic liner will be laid under the tanks on this location and a metal containment has been constructed.
15	Construction	604c.(2).S. Access Roads: PDC will utilize the lease access road from WCR 53 for drilling operations and maintenance equipment. The road will be properly constructed and maintained to accommodate for local emergency vehicle access. PDC will be working with Weld County on traffic planning.
16	Construction	604c.(2).M. Fencing Requirements: The completed wellsites will be surrounded with a fence and gate. PDC personnel will monitor the wellsites regularly upon completion of the wells. Authorized representatives and/or PDC personnel shall be on-site during drilling and completion operations.
17	Construction	604c.(2).Q. Guy Line Anchors: Rig guy wires are anchored to the rig's base beam that the rig stands on, temporary and permanent anchors will not be set on this location.
18	Construction	604c.(2).R. Tank Specifications: Condensate storage tanks will be designed, constructed and maintained in accordance with National Fire Protection Association (NFPA) Code 30 (2008 version). PDC will maintain written records to verify proper design, construction and maintenance. All records will be available for inspection by the Director.
19	Noise mitigation	604c.(2).A. Noise: WELL PAD: PDC has conducted baseline noise surveys for all drilling rigs that are being contracted and has also conducted a baseline noise survey for hydraulic fracture stimulation operations on a representative horizontal well. These baseline surveys are utilized for site specific noise modeling to determine if any mitigation measures are warranted. A review was conducted to identify potential receptors within 1000 feet of the proposed Churchill 28J-HZ pad site. There are 4 building units of concern are located north of the proposed pad at a distance of approximately 720, 725, 740 and 880 feet and 2 building units of concern located west of proposed pad at a distance of approximately 630 and 787 feet. As a result, noise modeling was conducted for the proposed pad located in the SENW Section 28 – T 5N – R 64W. Based on the results, projected noise levels would not exceed the Light Industrial Zone standard of 65 decibels (db) at the receptor locations during drilling operations. Results do indicate that noise levels would exceed 65 decibels 350 feet to the north-west during completion operations. Therefore, mitigation will be necessary for the Churchill 28J-HZ pad and will be installed prior to drilling and completion operations. Methods of noise mitigation shall include full blanket soundwalls on the north and west sides of the pad site at a height adequate to reduce noise. PRODUCTION FACILITIES: It is not anticipated that noise mitigation will be necessary at the proposed tank battery location. After construction is completed, equipment installed and production begins, noise levels will be assessed to determine if mitigation measures will be required to be compliant with Rule 802. If noise mitigation measures are warranted, the COGCC will be consulted accordingly.
20	Emissions mitigation	604c.(2).C. Green Completions: Flowlines, 48" HLPs, sand traps all capable of supporting green completions as described in rule 805 shall be installed at any Oil and Gas location at which commercial quantities of gas and or oil are reasonable expected to be produced based on existing wells. All green flow back equipment will be able to handle more than 1.5 times the amount of any know volumes in the surrounding field. First sign of salable gas will be put into production equipment and turned down line.
21	Drilling/Completion Operations	604c.(2).O. Loadlines: All loadlines shall be bullplugged or capped.

22	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 wellpath 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>Operator will comply with COGCC Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area dated May 29, 2012. The Colorado Oil and Gas Conservation Commission (COGCC) has established this Policy Regarding Bradenhead Monitoring During Hydraulic Fracturing Treatments ("Treatment") in the Greater Wattenberg Area ("GWA") pursuant to COGCC 207.a. ("Policy"). This Policy applies to oil and gas operations in the GWA as defined by the COGCC Rules of Practice and Procedure.</p>
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Total: 22 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

<u>Att Doc Num</u>	<u>Name</u>
400532345	FORM 2 SUBMITTED
400534921	PROPOSED SPACING UNIT
400534922	WELL LOCATION PLAT
400534923	30 DAY NOTICE LETTER
400534925	EXCEPTION LOC REQUEST
400534926	EXCEPTION LOC WAIVERS
400544074	OffsetWellEvaluations Data
400544076	DEVIATED DRILLING PLAN
400544077	DIRECTIONAL DATA
400552012	OTHER

Total Attach: 10 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final review complete.	6/30/2014 7:51:50 AM
Permit	On June 18, 2014, operator sent an email indicating that "After many meetings with the building unit owners, land owners, the Weld County Commissioners, and the Town of Kersey, it has been decided to move all facilities off of this location. The new production facility for this location will be further south and will be permitted under document #400629171. This new location for the production facilities will be submitted to the COGCC soon." Operator also provided revised attachments for the 2A (Doc 400532074) reflecting the removal of all production facilities from this proposed location. Returning form to In Process.	6/30/2014 7:28:00 AM
Permit	Opr reports that they continue to work with Weld County Commissioners, the town of Kersey, and the subdivision on an amicable solution.	4/14/2014 7:49:34 AM
Public	As a property owner within very close proximity to this proposed well site I have	3/2/2014 5:02:56 PM

numerous concerns. Let me start out saying that I am not "anti-oil". I own several vehicles that would be considered gas guzzlers, so I know how important the oil and gas industry is. I don't even have a major concern with where these wells will be located. The exception I have is with the IMMENSE size of this operation so close to a subdivision and small town. It is absolutely absurd to have 32 tanks in someone's backyard! Building something this massive as close to a populated area as it will be is ridiculous. This size of facility should be out where there are no houses in close proximity. I have read in your GOALS and MISSION that "your authority does not extend to the protection of private property interests, including property value." Your mission is to protect the rights of the mineral owners, and screw any property owners. As far as I can tell, you only care about getting as much oil and gas from the ground as possible and whatever you have to destroy in the process, you just don't care. You say you won't damage anyone's livelihood (farmers and their irrigation circles), but yet you have no problem destroying property values, which in effect destroys those homeowners who are just barely getting by. When I talked with one of your reps at a recent meeting, I mentioned the fact that his company (PDC) would be making millions, the mineral rights owners (Churchill) will be making millions, and those of us near the huge well site would LOSE money because our property values would go down. He acted like he thought it was ridiculous that I had an issue with that. There are numerous studies from Colorado, as well as other states where drilling is exploding, that indicate that property values within 1 mile of a well site will drop anywhere from 7-22%. I can guarantee with a site this BIG, it will be closer to the 22%. I would love for someone at PDC to call and tell me that if their property value went down that much, FOR ANY REASON, that they would be happy about it. I implore you to PLEASE have some consideration for those of us who will be financially impacted in a negative way. Those same studies also indicate that mortgage companies are beginning to be very cautious about lending money to purchase a property within close proximity to a well site, even a small one, not to mention a HUGE one like this. So regardless of what my property might be worth before or after the drilling, if no one can get a loan to buy it, it might as well be worthless. Does PDC really just not care about this? How do you people sleep at night?? According to a recent story in USA Today, even the CEO of Exxon-Mobile doesn't want it in his backyard. He is suing a company to keep them from building a water tower in close proximity to his house to provide water for fracking. And he makes millions (billions?) from that fracking process!!!! And a water tower is nowhere near as dangerous or ugly as 32 tanks. I have a water tower very close to my property and I have no problem with it.

I am convinced that none of these comments against this facility being built will even be considered. So, that being said, there are several options that I can see PDC can have if they want to be a "good neighbor" and in good spirit, help these homeowners out. Here are some things PDC can do to mitigate the extremely negative consequences to the homeowners:

1. MOVE THIS HUGE FACILITY SOMEWHERE ELSE.
2. Reduce the size of the facility – 32 tanks is just too much!!!
3. Buy out the subdivision at current values and then sell the properties for the lower property values to people who don't mind living next to a massive oil and gas well site, if they can find any.
4. Compensate us for the loss in our property values, perhaps giving each of the 13 homeowners approximately 20% of our current property value. IF we can then sell our property at a reduced rate, our loss would be somewhat minimized.
5. Move the facility further south, away from this subdivision AND,
6. At the absolute MINIMUM, PDC should plant a living fence of ADULT trees (no bare roots) in a line between the subdivision and the well site to minimize being able to see or hear the facility. We were told at the meeting that if they planted the trees they would not maintain (water) them. I see no reason why PDC could not maintain them until they were established enough that they would not die.

Given that PDC netted \$241 million in 2013, in part because we are consumers of

	oil and gas, I see no reason why you can't do any or a combination of any of these options. Please give us some consideration of what these 13 homeowners will lose if this facility is built.	
Permit	Received notice of public comment objecting to locaiton of large facility. Form on hold at opr request while they work through concerns with nearby building unit owners.	2/20/2014 11:03:09 AM
Permit	Preliminary review complete.	2/18/2014 10:28:03 AM
Permit	Passed completeness.	2/10/2014 2:47:08 PM

Total: 7 comment(s)