

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 1 South, Range 67 West, Section 6: N/2NW/4.
 Township 1 South, Range 68 West, Section 1: that part of the NE/4NE/4 lying east of the railroad right -of-way containing 5 acres.

Total Acres in Described Lease: 77 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: 605 Feet
 Building Unit: 706 Feet
 High Occupancy Building Unit: 5280 Feet
 Designated Outside Activity Area: 5280 Feet
 Public Road: 292 Feet
 Above Ground Utility: 544 Feet
 Railroad: 534 Feet
 Property Line: 50 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: 07/17/2015

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: 234 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: S2N2 of Section 1 T1S R68W

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		160	GWA

DRILLING PROGRAM

Proposed Total Measured Depth: 12646 Feet

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

411 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: Land application

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Beneficial reuse

Other Disposal Description:

Drill cuttings will be land applied at PDC spread fields with COGCC Facility ID 444255, 159534, 436033, or 434889.

Beneficial reuse or land application plan submitted? Yes

Reuse Facility ID: 444255 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	8422	650	8422	0
1ST LINER	6+1/8	4+1/2	13.5	7225	12646			

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 surface. CBL will only be run in the vertical section of the wellbore. Distance to the completed portion of the nearest well was measured to via the anti-collision report located within the deviated drilling plan attached, beginning on Page 8. Distance to the nearest wellbore belonging to another operator was measured using COGIS Map in 2D (plan view) from the Beisel Unit 1.

PDC requests an exception to rule 317.p.: PDC will run a cased hole log.

The Rio-LA 6F-434 will have a treated interval less than 150' from the treated interval of the Rio-LA 6F-334. All wells are owned by PDC Energy, Inc. so no stimulation setback consent is needed.

Pre-application notice certification attached as "Other".

Executed SUA and SUA amendment attached.

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: Kelsi Welch _____

Title: Regulatory Analyst Date: 4/15/2016 Email: kelsi.welch@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: 5/31/2016

Expiration Date: 05/30/2018

API NUMBER
05 001 09947 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>1) Bradenhead test shall be performed within 60 days of rig release and prior to stimulation. Test results shall be submitted on Form 17 within 10 days of test.</p> <p>2) Bradenhead test shall be performed between 6 and 7 months after rig release and shall be submitted on Form 17 within 10 days of test.</p> <p>3) Bradenhead test shall be performed within 30 days of First Production as reported on Form 5A and shall be submitted on Form 17 within 10 days of test.</p>
	<p>Operator acknowledges the proximity of the non-operated listed well(s). 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") stating that appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of this well.</p> <p>05-001-07108, BEISEL UNIT 1 ;</p>
	<p>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.</p> <p>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 Sussex to 200' above Sussex. Verify coverage with cement bond log.</p> <p>Diana Burn, P.E.</p>

Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Planning	604c.(2).V. Development From Existing Well Pads: An existing pad was not available to utilize to develop these wells.
2	Planning	604.c.(2).W. Site Specific Measures: Lights should be turned downward and away from building units within the 1,000 foot buffer area. Dust mitigation will be provided as necessary on lease access roads.
3	Planning	804. Visual Impact: Production facilities, regardless of construction date, which are observable from any public highway will 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.
4	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.

5	Planning	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.
6	Planning	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.
7	Planning	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.
8	Traffic control	"604c.(2).S. Access Roads: PDC will utilize an improved lease access road off of Colorado Blvd. for all heavy truck traffic and rig moves along with drilling operations and maintenance equipment. The lease access road will be properly constructed and maintained to accommodate for local emergency vehicle access. Dust will be mitigated as necessary on lease access road. "
9	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.
10	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.
11	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.
12	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.

13	Dust control	805.b(1)-(c) Odors and Dust: Oil and gas facilities and equipment will operate in a manner that odors and dust do not constitute a nuisance or hazard to public welfare. Odors: Oil and gas operations will 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. Dust; PDC will employ practices for control of fugitive dust caused by operations include but 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. When necessary, PDC coordinates dust mitigation with the county on gravel roads, places road base where allowed by surface owner around tanks and wellheads to minimize dust, and will water the roads and locations when dry. In addition, automation is used on all new wells to minimize truck traffic.
14	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.
15	Construction	604c.(2).O. Loadlines: All loadlines shall be bullplugged or capped.
16	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.
17	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.
18	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 pad site. There are 2 building units of concern located 654 feet north-east and 812 feet north-east. Light and sound mitigation will be installed to the north, east and west sides of the proposed location. Methods of noise mitigation shall include but not be limited to hay bales, noise walls, or customized semi-trailers. 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.
19	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.
20	Drilling/Completion Operations	604c.(2).I. BOPE Testing for Drilling Operations: PDC's contractors will supply a double ram BOPE (Blinds and pipes). BOPE is always function tested and all seals and ram block rubbers are inspected. 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 with a third party tester, all tests are digitally recorded and any failed equipment or seals are replaced and re-tested.

21	Drilling/Completion Operations	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.
22	Drilling/Completion Operations	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.
23	Drilling/Completion Operations	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.

Total: 23 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>
400956531	FORM 2 RESUBMITTED
401017710	FORM 2 SUBMITTED
401017711	FORM 2 REJECTED
401028601	WELL LOCATION PLAT
401028602	DEVIATED DRILLING PLAN
401028603	PROPOSED SPACING UNIT
401028605	DIRECTIONAL DATA
401028606	EXCEPTION LOC WAIVERS
401028607	EXCEPTION LOC REQUEST
401028608	EXCEPTION LOC WAIVERS
401028609	EXCEPTION LOC REQUEST
401028610	OPEN HOLE LOGGING EXCEPTION
401028611	30 DAY NOTICE LETTER
401028613	OTHER
401028614	SURFACE AGRMT/SURETY
401028617	SURFACE AGRMT/SURETY
401028622	FORM 2 SUBMITTED

Total Attach: 17 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed.	5/27/2016 12:47:15 PM
Permit	Permitting Review Complete.	5/5/2016 3:29:56 PM
Permit	Operator requested Exception to Open Hole Logging Rule 317.p. See attached.	5/5/2016 3:29:55 PM

Permit	Operator requests approval of a Rule 603.a.(2) exception location: Wellhead is to be located less than 150' from a property line. Request letter and waivers attached.	5/5/2016 3:29:54 PM
Permit	This form has passed completeness.	4/15/2016 9:35:38 AM
Permit	REJECTION COMMENT: This APD is being rejected per the Rejection Process criteria that a pad of Form 2's requiring a total of four or more attachments to be added will be rejected. This pad requires an Open Hole Logging Exception Request that states cased hole neutron log will be run from kick-off point to into surface casing for a total of (7) APD's. The Operator and COGCC staff have been consulted.	3/30/2016 9:08:54 AM
Permit	Per operator changed Distance from Completed Portion of Proposed Wellbore to Nearest Completed Portion of Offset Wellbore Permitted or Completed in the same formation from 105' to 234'. Permitting Review Complete.	3/11/2016 11:54:54 AM
Permit	ON HOLD: requesting corrected Distance from Completed Portion of Proposed Wellbore to Nearest Completed Portion of Offset Wellbore Permitted or Completed in the same formation.	2/25/2016 4:13:02 PM
Permit	Operator requests approval of a Rule 603.a.(2) exception location: Wellhead is to be located less than 150' from a property line. Request letter and waivers attached.	2/25/2016 4:13:02 PM
Permit	Operator requested Exception to Open Hole Logging Rule 317.p. See attached.	2/25/2016 4:13:01 PM
Public	The government of Adams County is in the process of updating their current requirements with regards to oil and gas to include improved public input requirements, improved air quality monitoring and possibly their own inspector.All permits should be deferred until that review and update is completed.	1/6/2016 4:12:06 PM
Public	The City of Thornton is in the process of reviewing and updating their current regulations on oil and gas development.Until the City Council completes this review, all new permits that are close enough to affect City of Thornton residents, use City of Thornton services, or require other services like possible right of ways for pipelines should be deferred until the City Council has completed this review and update.	1/6/2016 4:11:31 PM
Public	The roads along HWY7 are insufficient at this point to be able all the new development in the area.Handling the increased truck traffic along it would make it impossible for the current residents.Widening and traffic lights would be required in order to accomodate this activity.	1/6/2016 4:10:54 PM
Public	This area has a ton of new home subdivisions and the location is too close to these homes to be able to permit this without a proper emergency plan with the local emergency services trained and equipped to handle any type of emergency that can arise.	1/6/2016 4:09:12 PM
Public	A community meeting needs to be held on this to notify homeowners before this permit should be approved.	1/6/2016 4:08:31 PM

Public	If an MOU has not been obtained from Adams County then reject this request so that the LGD can be aware of this site and take local appropriate action. The oil and gas operator should be required to sign an MOU with the local land use authority before any permits are approved.	1/6/2016 4:07:59 PM
Public	If an MOU has not been obtained from Adams County then reject this request so that the LGD can be aware of this site and take local appropriate action.	1/5/2016 3:43:42 PM
Permit	Passed completeness.	12/28/2015 10:09:43 AM

Total: 18 comment(s)