

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:

400522271

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:

01/03/2014

Well Name: SunMarke

Well Number: 28W-414

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: SENE Sec: 28 Twp: 4N Rng: 67W Meridian: 6

Latitude: 40.286670

Longitude: -104.886970

Footage at Surface: 1560 feet FNL/FSL FNL 211 feet FEL/FWL FEL

Field Name: WATTENBERG

Field Number: 90750

Ground Elevation: 4908

County: WELD

GPS Data:

Date of Measurement: 08/26/2013 PDOP Reading: 2.0 Instrument Operator's Name: Mark Angell

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
2110 FNL 734 FEL 2193 FNL 500 FWL
Sec: 28 Twp: 4N Rng: 67W Sec: 28 Twp: 4N 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.)

N2 of Sec 28 T4N R67W 6th PM

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: 500 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 378 Feet

Building Unit: 378 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 200 Feet

Above Ground Utility: 236 Feet

Railroad: 5280 Feet

Property Line: 211 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: 12/16/2013

SPACING and UNIT INFORMATION

Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in the same formation: 167 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

N2S2 and S2N2 of Sec 28 T4N R67W 6th PM

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		320	GWA

DRILLING PROGRAM

Proposed Total Measured Depth: 11741 Feet

Distance to nearest permitted or existing wellbore penetrating objective formation: 167 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? Yes

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	7850	650	7850	500
1ST LINER	6+1/8	4+1/2	11.6	6538	11741			

☒ 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 (McCarty 28-1) measured to via the Anti-Collision Report in the Deviated Drilling plan. Drill cuttings will be land applied at PDC spread fields with COGCC Facility ID 430649 or 429629. Building Unit within the exception zone is a partially boarded up, uninhabited home. Contact was made with the owner of the Building Unit and the owner waived all notice, meeting, and mitigation requirements covered under Rule 305.a, 305.c., 306.e, 604.c.(2).A-W., and the MIRU policy effective Dec. 16, 2013. Waiver is 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: Liz Lindow

Title: Regulatory Analyst Date: 1/3/2014 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: 2/8/2014

Expiration Date: 02/07/2016

API NUMBER

05 123 38903 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
	<p>Operator acknowledges the proximity of the:</p> <p>McCarty 28-1 (API NO 123-12931): [OPTION 4] Although surface casing is set above the base of the Fox Hills aquifer, the production casing is cemented to a height sufficient to cover the Niobrara formation This well will be mitigated under option #4 using a retrievable bridge plug placed over the Niobrara formation , the casing will be pressure tested to 2000 psi, and the installation of a 5K psi well head. The bradenhead will be visually monitored for flow during offsetting fracing operations.</p> <p>McCarty 28-2 (API NO 123-12945): [OPTION 4] Although surface casing is set above the base of the Fox Hills aquifer, the production casing is cemented to a height sufficient to cover the Niobrara formation This well will be mitigated under option #4 using a retrievable bridge plug placed over the Niobrara formation, the casing will be pressure tested to 2000 psi, and the installation of a 5K psi well head. The bradenhead will be visually monitored for flow during offsetting fracing operations.</p> <p>McCarty 28-4 (API NO 123-12947): [OPTION 4] Although surface casing is set above the base of the Fox Hills aquifer, the production casing is cemented to a height sufficient to cover the Niobrara formation This well will be mitigated under option #4 using a retrievable bridge plug placed over the Niobrara formation, the casing will be pressure tested to 2000 psi, and the installation of a 5K psi well head. The bradenhead will be visually monitored for flow during offsetting fracing operations.</p> <p>McCarty 28-6 (API NO 123-13308): [OPTION 4] Although surface casing is set above the base of the Fox Hills aquifer, the production casing is cemented to a height sufficient to cover the Niobrara formation This well will be mitigated under option #4 using a retrievable bridge plug placed over the Niobrara formation, the casing will be pressure tested to 2000 psi, and the installation of a 5K psi well head. The bradenhead will be visually monitored for flow during offsetting fracing operations.</p> <p>McCarty 28-7 (API NO 123-13309): [OPTION 4] Although surface casing is set above the base of the Fox Hills aquifer, the production casing is cemented to a height sufficient to cover the Niobrara formation This well will be mitigated under option #4 using a retrievable bridge plug placed over the Niobrara formation, the casing will be pressure tested to 2000 psi, and the installation of a 5K psi well head. The bradenhead will be visually monitored for flow during offsetting fracing operations.</p> <p>Hicks 41-29 (API NO 123-20283): [OPTION 4] Although surface casing is set above the base of the Fox Hills aquifer, the production casing is cemented to a height sufficient to cover the Niobrara formation This well will be mitigated under option #4 using a retrievable bridge plug placed over the Niobrara formation, the casing will be pressure tested to 2000 psi, and the installation of a 5K psi well head. The bradenhead will be visually monitored for flow during offsetting fracing operations.</p>
	<p>Operator acknowledges the proximity of the non-operated wells:</p> <p>The Gollner O 27-04 (API NO 123-15969): [OPTION 4] Although surface casing is set above the base of the Fox Hills aquifer, the production casing is cemented to a height sufficient to cover the Niobrara formation This well will be mitigated under option #4 using a retrievable bridge plug placed over the Niobrara formation, the casing will be pressure tested to 2000 psi, and the installation of a 5K psi well head. The bradenhead will be visually monitored for flow during offsetting fracing operations.</p> <p>The Gollner O 27-05 (API NO 123-15970): [OPTION 4] Although surface casing is set above the base of the Fox Hills aquifer, the production casing is cemented to a height sufficient to cover the Niobrara formation This well will be mitigated under option #4 using a retrievable bridge plug placed over the Niobrara formation, the casing will be pressure tested to 2000 psi, and the installation of a 5K psi well head. The bradenhead will be visually monitored for flow during offsetting fracing operations.</p>

	<p>1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU.</p> <p>2) Comply with Rule 317.i and provide cement coverage from the bottom of the production casing to a minimum of 200' above Niobrara. Verify coverage with cement bond log.</p> <p>3) Run and submit Directional Survey from TD to base of surface casing. The operator shall comply with Rule 321, and it shall be the operator's responsibility to ensure that the wellbore complies with setback requirements in commission orders or rules prior to producing the well.</p>
	<p>Rule 317.o 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 Form 5 for every well on the pad shall identify which well was logged.</p>

Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Drilling/Completion Operations	<p>Wellbore Fracturing Stimulation: 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> <p>Anti-Collision: 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>

Total: 1 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>
400522271	FORM 2 SUBMITTED
400532999	30 DAY NOTICE LETTER
400533001	WAIVERS
400533002	OTHER
400533003	EXCEPTION LOC REQUEST
400533004	EXCEPTION LOC WAIVERS
400533005	SURFACE AGRMT/SURETY
400533006	DEVIATED DRILLING PLAN
400533008	WELL LOCATION PLAT
400533009	PROPOSED SPACING UNIT
400534769	DIRECTIONAL DATA
400535007	OffsetWellEvaluations Data

Total Attach: 12 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final review complete.	2/6/2014 10:52:10 AM
Permit	Operator shall comply with Buffer Zone Move-In, Rig-Up Notice Policy dated 12-16-2013.	2/6/2014 10:51:59 AM
Permit	Note that the Pre-applicaion request is included in the attachment "Waivers". Ready to pass pending public comment 1/27/14.	1/8/2014 9:28:51 AM
Permit	Passed completeness.	1/6/2014 10:30:18 AM

Total: 4 comment(s)