

FORM  
2A

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:

400562261

Date Received:

04/30/2014

## Oil and Gas Location Assessment

New Location     Refile     Amend Existing Location    Location#: \_\_\_\_\_

Submit signed original form. This Oil and Gas Location Assessment is to be submitted to the COGCC for approval prior to any ground disturbance activity associated with oil and gas operations. Approval of this Oil and Gas Location Assessment will allow for the construction of the below specified Location; however, it does not supersede any land use rules applied by the local land use authority. Please see the COGCC website at <http://cogcc.state.co.us/> for all accompanying information pertinent this Oil and Gas Location Assessment.

Location ID:

Expiration Date:

This location assessment is included as part of a permit application.

### CONSULTATION

This location is included in a Comprehensive Drilling Plan. CDP # \_\_\_\_\_

This location is in a sensitive wildlife habitat area.

This location is in a wildlife restricted surface occupancy area.

This location includes a Rule 306.d.(1)A.ii. variance request.

### Operator

Operator Number: 69175

Name: PDC ENERGY INC

Address: 1775 SHERMAN STREET - STE 3000

City: DENVER                      State: CO                      Zip: 80203

### Contact Information

Name: Julie Webb

Phone: (303) 381-3933

Fax: ( )

email: julie.webb@pdce.com

### RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20090078                       Gas Facility Surety ID: \_\_\_\_\_

Waste Management Surety ID: \_\_\_\_\_

### LOCATION IDENTIFICATION

Name: Ledford

Number: 22Y-HZ Pad

County: WELD

Quarter: SESE    Section: 22    Township: 5N    Range: 64W    Meridian: 6    Ground Elevation: 4598

Define a single point as a location reference for the facility location. When the location is to be used as a well site then the point shall be a well location.

Footage at surface: 254 feet FSL from North or South section line

327 feet FEL from East or West section line

Latitude: 40.378330                      Longitude: -104.527550

PDOP Reading: 2.1                      Date of Measurement: 12/13/2013

Instrument Operator's Name: Brian Rottinghaus

## RELATED REMOTE LOCATIONS

(Enter as many Related Locations as necessary. Enter the Form 2A document # only if there is no established COGCC Location ID#)

This proposed Oil and Gas Location is:

LOCATION ID # FORM 2A DOC #



## FACILITIES

Indicate the number of each type of oil and gas facility planned on location

Wells	<u>4</u>	Oil Tanks	<u>12</u>	Condensate Tanks	<u>      </u>	Water Tanks	<u>4</u>	Buried Produced Water Vaults	<u>2</u>
Drilling Pits	<u>      </u>	Production Pits	<u>      </u>	Special Purpose Pits	<u>      </u>	Multi-Well Pits	<u>      </u>	Temporary Large Volume Above Ground Tanks	<u>1</u>
Pump Jacks	<u>      </u>	Separators	<u>4</u>	Injection Pumps	<u>      </u>	Cavity Pumps	<u>      </u>		
Gas or Diesel Motors	<u>      </u>	Electric Motors	<u>      </u>	Electric Generators	<u>      </u>	Fuel Tanks	<u>      </u>	Gas Compressors	<u>      </u>
Dehydrator Units	<u>      </u>	Vapor Recovery Unit	<u>1</u>	VOC Combustor	<u>2</u>	Flare	<u>      </u>	LACT Unit	<u>      </u>
								Pigging Station	<u>      </u>

## OTHER FACILITIES

Other Facility Type

Number

Meter	<u>1</u>
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Per Rule 303.b.(3)C, description of all oil, gas, and/or water pipelines:

Each well will have a flow line, oil production line, water production line and a backpressure line, each battery will have a gas sales line. Oil production line and flow lines are 3 inch steel SCH 80FB PE DRL. Water production line and low pressure gas vent lines are 2 inch SDR7 poly. Gas sales lines installed and maintained by Gas Purchaser, normally 6 inch steel .256 FBE

## CONSTRUCTION

Date planned to commence construction: 04/01/2015 Size of disturbed area during construction in acres: 4.80  
Estimated date that interim reclamation will begin: 06/01/2015 Size of location after interim reclamation in acres: 1.90  
Estimated post-construction ground elevation: 4598

## DRILLING PROGRAM

Will a closed loop system be used for drilling fluids: Yes

Is H<sub>2</sub>S anticipated? No

Will salt sections be encountered during drilling: No

Will salt based mud (>15,000 ppm Cl) be used? No

Will oil based drilling fluids be used? No

## DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Method: Recycle/reuse

Cutting Disposal: OFFSITE Cuttings Disposal Method: Beneficial reuse

Other Disposal Description:

Drill cuttings will be land applied at PDC spread fields with COGCC Facility ID 425112, 429629, 430649, 431183, or 434889.

Beneficial reuse or land application plan submitted? Yes

Reuse Facility ID: 425112 or Document Number:                     

Centralized E&P Waste Management Facility ID, if applicable:                     

## SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: Wayne Ledford Phone: \_\_\_\_\_  
 Address: 6104 South Tidwell Road Fax: \_\_\_\_\_  
 Address: \_\_\_\_\_ Email: \_\_\_\_\_  
 City: Carlsbad State: NM Zip: 88220  
 Surface Owner:  Fee  State  Federal  Indian  
 Check all that apply. The Surface Owner:  is the mineral owner  
 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 from or produced to this Oil and Gas Location: Yes  
 The right to construct this Oil and Gas Location is granted by: Surface Use Agreement  
 Surface damage assurance if no agreement is in place: \_\_\_\_\_ Surface Surety ID: \_\_\_\_\_  
 Date of Rule 306 surface owner consultation 12/05/2013

**CURRENT AND FUTURE LAND USE**

**Current Land Use (Check all that apply):**  
 Crop Land:  Irrigated  Dry land  Improved Pasture  Hay Meadow  CRP  
 Non-Crop Land:  Rangeland  Timber  Recreational  Other (describe): \_\_\_\_\_  
 Subdivided:  Industrial  Commercial  Residential

**Future Land Use (Check all that apply):**  
 Crop Land:  Irrigated  Dry land  Improved Pasture  Hay Meadow  CRP  
 Non-Crop Land:  Rangeland  Timber  Recreational  Other (describe): \_\_\_\_\_  
 Subdivided:  Industrial  Commercial  Residential

## CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 520 Feet  
Building Unit: 520 Feet  
High Occupancy Building Unit: 5280 Feet  
Designated Outside Activity Area: 5280 Feet  
Public Road: 246 Feet  
Above Ground Utility: 222 Feet  
Railroad: 2110 Feet  
Property Line: 254 Feet

### INSTRUCTIONS:

- All measurements shall be provided from center of nearest Well or edge of nearest Production Facility to nearest of each cultural feature as described in Rule 303.b.(3)A.  
- 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: 02/20/2014

## SOIL

List all soil map units that occur within the proposed location. attach the National Resource Conservation Service (NRCS) report showing the "Map Unit Description" report listing the soil typical vertical profile. This data is to used when segregating topsoil.

The required information can be obtained from the NRCS web site at <http://soildatamart.nrcs.usda.org/> or from the COGCC web site GIS Online map page found at <http://colorado.gov/cogcc>. Instructions are provided within the COGCC web site help section.

NRCS Map Unit Name: 50: Otero sandy loam  
NRCS Map Unit Name: \_\_\_\_\_  
NRCS Map Unit Name: \_\_\_\_\_

## PLANT COMMUNITY:

Complete this section only if any portion of the disturbed area of the location's current land use is on non-crop land.

Are noxious weeds present: Yes  No   
Plant species from:  NRCS or,  field observation Date of observation: \_\_\_\_\_  
List individual species: \_\_\_\_\_

Check all plant communities that exist in the disturbed area.

- Disturbed Grassland (Cactus, Yucca, Cheatgrass, Rye)  
 Native Grassland (Bluestem, Grama, Wheatgrass, Buffalograss, Fescue, Oatgrass, Brome)  
 Shrub Land (Mahogany, Oak, Sage, Serviceberry, Chokecherry)  
 Plains Riparian (Cottonwood, Willow, Aspen, Maple, Poplar, Russian Olive, Tamarisk)  
 Mountain Riparian (Cottonwood, Willow, Blue Spruce)  
 Forest Land (Spruce, Fir, Ponderosa Pine, Lodgepole Pine, Juniper, Pinyon, Aspen)  
 Wetlands Aquatic (Bullrush, Sedge, Cattail, Arrowhead)  
 Alpine (above timberline)  
 Other (describe): \_\_\_\_\_

## WATER RESOURCES

Is this a sensitive area:  No  Yes

Distance to nearest

downgradient surface water feature: 240 Feet

water well: 405 Feet

Estimated depth to ground water at Oil and Gas Location 28 Feet

Basis for depth to groundwater and sensitive area determination:

Depth to groundwater based on CO Division of Water Resources, sensitive area determination due to downgradient surface water within 300'.

Is the location in a riparian area:  No  Yes

Was an Army Corps of Engineers Section 404 permit filed  No  Yes If yes attach permit.

Is the location within a Rule 317B Surface Water Supply Area buffer No zone:

If the location is within a Rule 317B Surface Water Supply Area buffer have all public water supply systems within 15 miles been notified: \_\_\_\_\_

## GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 318A

## 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)

## RULE 502.b VARIANCE REQUEST

- Rule 502.b. Variance Request from COGCC Rule or Spacing Order Number \_\_\_\_\_

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 following wells will be drilled from this pad Ledford 22T-321, Ledford 22T-421, Ledford 22Y-241, Ledford 22Y-401. PDC is developing under a Joint Operating Agreement for the minerals below the SHL there for the SUA is attached.

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

Signed: \_\_\_\_\_ Date: 04/30/2014 Email: julie.webb@pdce.com

Print Name: Julie Webb Title: Regulatory Analyst

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: \_\_\_\_\_

### **Conditions Of Approval**

All representations, stipulations and conditions of approval stated in this Form 2A for this location shall constitute representations, stipulations and conditions of approval for any and all subsequent operations on the location unless this Form 2A is modified by Sundry Notice, Form 4 or an Amended Form 2A.

#### **COA Type**

#### **Description**

<b><u>COA Type</u></b>	<b><u>Description</u></b>

### **Best Management Practices**

#### **No BMP/COA Type**

#### **Description**

1	Planning	604c.(2).E. Multiwell Pads: This 2A application is for a 4-well pad. No suitable existing locations are in the area. Other locations were reviewed, location was chosen to keep facility out of the existing pivot.
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: Dust abatement will be applied and properly maintained on CR 54 to minimize dust. Lights should be turned downward and away from building units within the 1,000 foot buffer area.
4	Planning	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.
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	Storm Water/Erosion Control	Stormwater Management Plan contains required elements associated with PDC's construction activities for Areas 1, 2, 3, and 5, as defined in the CDPS General Permit for Stormwater Discharges Associated with Construction Activity, Authorization to Discharge Under the Colorado Discharge Permit System (Permit No. COR-030000, re-issued and effective July 1, 2007).BMPs for sediment and erosion control will be accomplished through a combination of construction techniques, vegetation and re-vegetation, administrative controls, and structural features.
13	Material Handling and Spill Prevention	To prevent adverse impacts to shallow groundwater, buried produced water vault shall be installed above an impermeable synthetic or geosynthetic liner system which shall be tied back into the surface liner.
14	Material Handling and Spill Prevention	604c.(2).F. Leak Detection Plan: See attached.
15	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.
16	Construction	604c.(2).G. Berm Construction: A geosynthetic liner will be laid under the tanks on this location and a metal containment will be constructed. Operator must implement site-specific best management practices in accordance with good engineering practices, including, but not limited to, construction of a berm or diversion dike, site grading, or other comparable measures, sufficient to protect the down gradient water sources located as follows from the nearest well head : barrow ditch 240 feet and 268 feet south
17	Construction	604c.(2).S. Access Roads: PDC will utilize the lease access road from WCR 54 (paved) for drilling operations and maintenance equipment. The road will be properly constructed and maintained to accommodate for local emergency vehicle access.
18	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.
19	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.
20	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.

21	Noise mitigation	<p>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. A review was conducted to identify potential receptors within 1000 feet of the proposed Ledford 22Y-HZ Pad site. There are six building units of concern. The six building units are located as follows: South-east of the proposed pad at a distance of approximately 520 feet, 616 feet, 762 feet and 813 feet, and South-west of the proposed pad at a distance of approximately 643 feet and 644 feet. As a result, sound mitigation will be installed directly south and east of the proposed pad located in the NENE Section 22 – T5N – R64W prior to drilling and completion operations. 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.</p>
22	Emissions mitigation	<p>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.</p>
23	Drilling/Completion Operations	<p>PDC Energy, Inc. (PDC) has developed Best Management Practices (BMPS) to prevent injuries, property damage or environmental impacts and a Contingency Plan for any Modular Large Volume Tank (MLVT) leak or catastrophic failure of the tank integrity and resulting loss of fluid. These BMPs include, but not limited, by the following:</p> <ol style="list-style-type: none"> <li>1) PDC determines MLVT locations based on size of location, nearby surface waters, site visibility, surrounding land use, property lines, onsite traffic, site security, tear-away tank fill connections, topography (high, low, slope, direction), nearby building units, roads, access points, and surface owner requests.</li> <li>2) Signs shall be posted on each MLVT to indicate that the contents are fresh water and that no E&amp;P waste fluids are allowed. Location and additional signage shall conform to Rule 210.</li> <li>3) MLVTs will be operated with a minimum of 1 foot freeboard at all times.</li> <li>4) Access to the tanks shall be limited to operational personnel.</li> <li>5) Construction and installation of the tank structure, liner and sub-grade shall meet or exceed the manufacturer specifications. PDC follows manufacturer's Standard Operating Procedures (SOPs) and will provide these SOPs upon request to the COGCC.</li> <li>6) PDC will conduct daily, visual inspections of the exterior wall and general area for any integrity deficiencies before, during, and after filling the MLVTs. PDC uses Construction Sign-Off, Site Preparation Sign-Off, Completion Sign-Off, Pre-Fill, and Site Visit checklists to maintain a written record of inspections. However, when the fluid level in the MLVTs is less than two (2) feet and there is no activity going on (i.e. during holidays or a small break between completions), only intermittent inspections will be conducted. Two feet is the safe volume of fluid level that is needed to hold the liner down and keep the MLVT stable.</li> <li>7) Each location where MLVT's are used will have its own set of unique site-specific characteristics and associated risks (e.g., rural vs. urban setting, grade of the location, etc.) to be considered in a worst case scenario. These characteristics must be identified and addressed prior to the MLVT construction phase and should be documented in the MLVT construction checklist. Ensuring the safety of our employees, contractors, and the public are a top priority. This can be addressed with the implementation of MLVT pre-construction risk assessment measures to address safety concerns, and minimize environmental impacts and property damage in the unlikely event of a MLVT release.</li> <li>8) In the event of a catastrophic MLVT failure, the Operator shall notify the COGCC as soon as practicable but not more than 24 hours after discovery, submit a Form 22-Accident Report within 10 days after discovery, conduct a "root cause analysis", and provide same to COGCC on a Form 4-Sundry Notice within 30 days of the failure.</li> </ol>

24	Drilling/Completion Operations	604c.(2).O. Loadlines: All loadlines shall be bullplugged or capped.
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Total: 24 comment(s)

### Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
400562261	FORM 2A SUBMITTED
400570602	ACCESS ROAD MAP
400570603	HYDROLOGY MAP
400570605	LOCATION DRAWING
400570606	LOCATION PICTURES
400570610	MULTI-WELL PLAN
400570616	NRCS MAP UNIT DESC
400570623	FACILITY LAYOUT DRAWING
400582939	WASTE MANAGEMENT PLAN
400591128	OTHER
400598698	SURFACE AGRMT/SURETY
400602068	OTHER

Total Attach: 12 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>

Total: 0 comment(s)