

**State of Colorado**  
**Oil and Gas Conservation Commission**

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DE	ET	OE	ES
Document Number: <b>402090324</b>			
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**SUNDRY NOTICE**

Submit a signed original. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full in Comments or provide as an attachment. Identify Well by API Number; identify Oil and Gas Location by Location ID Number; identify other Facility by Facility ID Number.

OGCC Operator Number: 69175 Contact Name Jenifer Hakkarinen  
 Name of Operator: PDC ENERGY INC Phone: (303) 8605800  
 Address: 1775 SHERMAN STREET - STE 3000 Fax: ( )  
 City: DENVER State: CO Zip: 80203 Email: Jenifer.Hakkarinen@pdce.com

Complete the Attachment  
Checklist

OP OGCC

API Number : 05- 123 45456 00 OGCC Facility ID Number: 452199  
 Well/Facility Name: Thistle Down Well/Facility Number: 31i-302  
 Location QtrQtr: NESW Section: 31 Township: 5N Range: 64W Meridian: 6  
 County: WELD Field Name: WATTENBERG  
 Federal, Indian or State Lease Number: \_\_\_\_\_

Survey Plat		
Directional Survey		
Srfc Eqpmt Diagram		
Technical Info Page		
Other		

**CHANGE OF LOCATION OR AS BUILT GPS REPORT**

- Change of Location \*       As-Built GPS Location Report       As-Built GPS Location Report with Survey

\* Well location change requires new plat. A substantive surface location change may require new Form 2A.

**SURFACE LOCATION GPS DATA** Data must be provided for Change of Surface Location and As Built Reports.

Latitude \_\_\_\_\_ PDOP Reading \_\_\_\_\_ Date of Measurement \_\_\_\_\_  
 Longitude \_\_\_\_\_ GPS Instrument Operator's Name \_\_\_\_\_

**LOCATION CHANGE (all measurements in Feet)**

Well will be: \_\_\_\_\_ (Vertical, Directional, Horizontal)

Change of **Surface** Footage **From** Exterior Section Lines:

Change of **Surface** Footage **To** Exterior Section Lines:

Current **Surface** Location **From** QtrQtr NESW Sec 31

New **Surface** Location **To** QtrQtr \_\_\_\_\_ Sec \_\_\_\_\_

Change of **Top of Productive Zone** Footage **From** Exterior Section Lines:

Change of **Top of Productive Zone** Footage **To** Exterior Section Lines:

Current **Top of Productive Zone** Location **From** Sec 31

New **Top of Productive Zone** Location **To** Sec \_\_\_\_\_

Change of **Bottomhole** Footage **From** Exterior Section Lines:

Change of **Bottomhole** Footage **To** Exterior Section Lines:

Current **Bottomhole** Location Sec 32 Twp 5N

New **Bottomhole** Location Sec \_\_\_\_\_ Twp \_\_\_\_\_

Is location in High Density Area? \_\_\_\_\_

Distance, in feet, to nearest building \_\_\_\_\_, public road: \_\_\_\_\_, above ground utility: \_\_\_\_\_, railroad: \_\_\_\_\_,

property line: \_\_\_\_\_, lease line: \_\_\_\_\_, well in same formation: \_\_\_\_\_

Ground Elevation \_\_\_\_\_ feet Surface owner consultation date \_\_\_\_\_

FNL/FSL		FEL/FWL	
<u>1384</u>	<u>FSL</u>	<u>1357</u>	<u>FWL</u>
_____	_____	_____	_____
Twp <u>5N</u>	Range <u>64W</u>	Meridian <u>6</u>	
Twp _____	Range _____	Meridian _____	
<u>160</u>	<u>FSL</u>	<u>735</u>	<u>FWL</u>
_____	_____	_____	_____
Twp <u>5N</u>	Range <u>64W</u>		
Twp _____	Range _____		
<u>160</u>	<u>FSL</u>	<u>800</u>	<u>FWL</u>
_____	_____	_____	_____
Twp _____	Range _____		
Twp _____	Range _____		

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\*\*

\*\* attach deviated drilling plan



Comments:

**ENGINEERING AND ENVIRONMENTAL WORK**

NOTICE OF CONTINUED TEMPORARILY ABANDONED STATUS

Indicate why the well is temporarily abandoned and describe future plans for utilization in the COMMENTS box below or provide as an attachment, as required by Rule 319.b.(3).

Date well temporarily abandoned \_\_\_\_\_ Has Production Equipment been removed from site? \_\_\_\_\_

Mechanical Integrity Test (MIT) required if shut in longer than 2 years. Date of last MIT \_\_\_\_\_

SPUD DATE: \_\_\_\_\_

**TECHNICAL ENGINEERING AND ENVIRONMENTAL WORK**

Details of work must be described in full in the COMMENTS below or provided as an attachment.

NOTICE OF INTENT Approximate Start Date 06/27/2019

REPORT OF WORK DONE Date Work Completed \_\_\_\_\_

<input type="checkbox"/> Intent to Recomplete (Form 2 also required)	<input type="checkbox"/> Request to Vent or Flare	<input type="checkbox"/> E&P Waste Mangement Plan
<input type="checkbox"/> Change Drilling Plan	<input type="checkbox"/> Repair Well	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input type="checkbox"/> Gross Interval Change	<input type="checkbox"/> Rule 502 variance requested. Must provide detailed info regarding request.	
<input checked="" type="checkbox"/> Other <u>Bradenhead Mitigation</u>	<input type="checkbox"/> Status Update/Change of Remediation Plans for Spills and Releases	

**COMMENTS:**

The Thistle Down 31i-302 is currently pending stimulation operations. The well and its monitoring/mitigation plan is as follows:

1. In January 2019, the bradenhead was reported to COGCC with 350 psig which then PDC has been gathering data to help determine best solution for wells with BH pressure.
2. At the 6 month post rig release test the bradenhead was recorded at 430 psig which is most likely accounted for due to change in ambient temperature and additional slow build up.
3. Since that test, multiple blow downs have been done indicating the presence of no fluid and quick blow down to zero pressure. The build ups after indicate the pressure is slowly being worked off.
4. Per our conversation with the COGCC we will proceed with said stimulation and monitor all bradenheads with automation for a 100 psig increase.
5. After completions has completed, the pad will be commissioned for a bradenhead pressure abatement system that combusts bradenhead gas via VRU system with bradenhead gas routed to a working tank to keep pressure below 50 psi threshold. The abatement system will be in place for 6 months, at which time PDC will complete a reevaluation of pressure to determine if further mitigation is required. Buildup and duration of pressure will be monitored via automation system and PDC will contact COGCC engineer if pressure increases at any time.

**CASING AND CEMENTING CHANGES**

Casing Type	Size	Of	/	Hole	Size	Of	/	Casing	Wt/Ft	Csg/LinTop	Setting Depth	Sacks of Cement	Cement Bottom	Cement Top

**H2S REPORTING**

Data Fields in this section are intended to document Sample and Location Data associated with the collection of a Gas Sample that is submitted for Laboratory Analysis.

Gas Analysis Report must be attached.

H2S Concentration: \_\_\_\_\_ in ppm (parts per million) Date of Measurement or Sample Collection \_\_\_\_\_

Description of Sample Point:

Absolute Open Flow Potential \_\_\_\_\_ in CFPD (cubic feet per day)

Description of Release Potential and Duration (If flow is not open to the atmosphere, identify the duration in which the container or pipeline would likely be opened for servicing operations.):

Distance to nearest occupied residence, school, church, park, school bus stop, place of business, or other areas where the public could reasonably be expected to frequent: \_\_\_\_\_

Distance to nearest Federal, State, County, or municipal road or highway owned and principally maintained for public use: \_\_\_\_\_

COMMENTS:

<b><u>Best Management Practices</u></b>	
<b><u>No BMP/COA Type</u></b>	<b><u>Description</u></b>

Operator Comments:

[Empty box for Operator Comments]

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

Signed: \_\_\_\_\_ Print Name: Jenifer Hakkarinen  
Title: reg tech Email: Jenifer.Hakkarinen@pdce.com Date: 6/27/2019

Based on the information provided herein, this Sundry Notice (Form 4) complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: Wolfe, Stephen Date: 7/5/2019

**CONDITIONS OF APPROVAL, IF ANY:**

<u>COA Type</u>	<u>Description</u>
	1)Any gas produced from the Bradenhead will be controlled with the best available technology to protect health and safety. Operator will ensure that any emissions do not constitute a nuisance or hazard to public welfare and are subject to CDPHE regulations. 2)Operator has notified COGCC staff of the existing bradenhead pressure on this well and will monitor and respond to any change in pressure during all stimulations on this pad per the COGCC Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area, May 29, 2012. 3)Following stimulation of this well, Operator will keep surface casing blown down until such time that a VRU abatement system designed to maintain a maximum of 50 psi back pressure is installed. During the blow down, flow and build up cycles, the pressure and rate will be recorded in such a way as to characterize the well performance for comparison over time. 4)Operator will perform up to 6 months of abatement to be followed by a summary of well performance submitted via sundry to the COGCC at which time the future course of action will be considered.

**General Comments**

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Engineer	BHT – 4/26/19 Doc # 402030087 BHP= /208 psi int/surf, 172/202 psi tbg/csg, bled down to 0, no liquids, gas samples taken - yes, waiting on results.	07/01/2019

Total: 1 comment(s)

**Attachment Check List**

<u>Att Doc Num</u>	<u>Name</u>
402090324	SUNDRY NOTICE APPROVED-OTHER
402097769	FORM 4 SUBMITTED

Total Attach: 2 Files