

FORM  
6Rev  
05/18State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303) 894-2100 Fax: (303) 894-2109



DE ET OE ES

Document Number:

401843293

Date Received:

11/16/2018

## WELL ABANDONMENT REPORT

This form is to be submitted as an Intent to Abandon whenever an abandonment is planned on a borehole. After the abandonment is complete, this form shall again be submitted as a Subsequent Report of the actual work completed. The approved intent shall be valid for six months after the approval date, after that period, a new intent will be required. Attachments required with the Intent to Abandon are wellbore diagrams of the current configuration and the proposed configuration with plugs set.

A Subsequent Report of Abandonment shall indicate the actual work completed. Attachments required with a Subsequent Report are a wellbore diagram showing plugs that were set and casing remaining in the hole, the job summaries from all plugging contractors used, including wireline and cementing (third party verification) and any logs that may have been run during abandonment.

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

For "Intent" 24 hour notice required,

Name: Montoya, John

Tel: (970) 397-4124

COGCC contact:

Email: john.montoya@state.co.us

API Number 05-123-22890-00

Well Name: HOWARD LAKE

Well Number: 11-9

Location: QtrQtr: NWNW Section: 9 Township: 6N Range: 64W Meridian: 6

County: WELD

Federal, Indian or State Lease Number:

Field Name: WATTENBERG

Field Number: 90750

☒ Notice of Intent to Abandon☐ Subsequent Report of Abandonment

## Only Complete the Following Background Information for Intent to Abandon

Latitude: 40.505500

Longitude: -104.562440

GPS Data:

Date of Measurement: 06/27/2010

PDOP Reading: 1.7

GPS Instrument Operator's Name: Holly L. Tracy

Reason for Abandonment:

☐ Dry☒ Production Sub-economic☐ Mechanical Problems☐ Other

Casing to be pulled:

☒ Yes☐ No

Estimated Depth: 1800

Fish in Hole:

☐ Yes☒ No

If yes, explain details below

Wellbore has Uncemented Casing leaks:

☐ Yes☒ No

If yes, explain details below

Details:

## Current and Previously Abandoned Zones

Formation	Perf. Top	Perf. Btm	Abandoned Date	Method of Isolation	Plug Depth
CODELL	7068	7078			

Total: 1 zone(s)

## Casing History

Casing Type	Size of Hole	Size of Casing	Weight Per Foot	Setting Depth	Sacks Cement	Cement Bot	Cement Top	Status
SURF	12+1/4	8+5/8	24	541	300	541	0	VISU
1ST	7+7/8	4+1/2	10.5	7,280	460	7,280	3,253	CBL

## Plugging Procedure for Intent and Subsequent Report

CIBP #1: Depth 7018 with 2 sacks cmt on top. CIBP #2: Depth 6705 with 2 sacks cmt on top.  
CIBP #3: Depth \_\_\_\_\_ with \_\_\_\_\_ sacks cmt on top. CIBP #4: Depth \_\_\_\_\_ with \_\_\_\_\_ sacks cmt on top.  
CIBP #5: Depth \_\_\_\_\_ with \_\_\_\_\_ sacks cmt on top.

NOTE: Two(2) sacks cement required on all CIBPs.

Set 255 sks cmt from 1915 ft. to 1500 ft. Plug Type: STUB PLUG Plug Tagged: ☐  
Set \_\_\_\_\_ sks cmt from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Plug Type: \_\_\_\_\_ Plug Tagged: ☐  
Set \_\_\_\_\_ sks cmt from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Plug Type: \_\_\_\_\_ Plug Tagged: ☐  
Set \_\_\_\_\_ sks cmt from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Plug Type: \_\_\_\_\_ Plug Tagged: ☐  
Set \_\_\_\_\_ sks cmt from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Plug Type: \_\_\_\_\_ Plug Tagged: ☐

Perforate and squeeze at \_\_\_\_\_ ft. with \_\_\_\_\_ sacks. Leave at least 100 ft. in casing \_\_\_\_\_ CICR Depth

Perforate and squeeze at \_\_\_\_\_ ft. with \_\_\_\_\_ sacks. Leave at least 100 ft. in casing \_\_\_\_\_ CICR Depth

Perforate and squeeze at \_\_\_\_\_ ft. with \_\_\_\_\_ sacks. Leave at least 100 ft. in casing \_\_\_\_\_ CICR Depth

(Cast Iron Cement Retainer Depth)

Set 500 sacks half in. half out surface casing from 915 ft. to 0 ft. Plug Tagged: ☒

Set \_\_\_\_\_ sacks at surface

Cut four feet below ground level, weld on plate Above Ground Dry-Hole Marker: ☐ Yes ☐ No

Set \_\_\_\_\_ sacks in rat hole Set \_\_\_\_\_ sacks in mouse hole

### Additional Plugging Information for Subsequent Report Only

Casing Recovered: \_\_\_\_\_ ft. \_\_\_\_\_ inch casing Plugging Date: \_\_\_\_\_  
of \_\_\_\_\_

\*Wireline Contractor: \_\_\_\_\_ \*Cementing Contractor: \_\_\_\_\_

Type of Cement and Additives Used: \_\_\_\_\_

Flowline/Pipeline has been abandoned per Rule 1105 ☐ Yes ☐ No \*ATTACH JOB SUMMARY

#### Technical Detail/Comments:

Howard Lake 11-9 (05-123-22890)/Plugging Procedure (Intent)

Producing Formation: Codell: 7068'-7078'

Upper Pierre Aquifer: 650'-1660'

TD: 7315' PBD: 7231'

Surface Casing: 8 5/8" 24# @ 541' w/ 300 sxs cmt

Production Casing: 4 1/2" 10.5# @ 7280' w/ 441 sxs cmt (TOC @ 3253' - CBL).

Tubing: 2 3/8" tubing set @ 7052' (7/15/2005).

Proposed Procedure:

1. Run gyro survey.
2. MIRU pulling unit. Pull 2 3/8" tubing.
3. RU wireline company.
4. TIH with CIBP. Set BP at 7018'. Top with 2 sxs 15.8#/gal CI G cement.
5. TIH with CIBP. Set BP at 6705'. Top with 2 sxs 15.8#/gal CI G cement.
6. TIH with casing cutter. Cut 4 1/2" casing at 1800'. Pull cut casing.
7. TIH with tubing to 1915'. RU cementing company. Mix and pump 255 sxs 15.8#/gal CI G cement w/ 2% CaCl down tubing (Pierre coverage from 1915'-1500').
8. Pickup tubing to 741'. Mix and pump 405 sxs 15.8#/gal CI G cement down tubing. Cement should circulate to surface.
9. Cut surface casing 6' below ground level and weld on cap.

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 Date: 11/16/2018 Email: JENIFER.HAKKARINEN@PDCE.COM

Based on the information provided herein, this Well Abandonment Report (Form 6) complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: Wolfe, Stephen

Date: 1/30/2019

**CONDITIONS OF APPROVAL, IF ANY:** \_\_\_\_\_

Expiration Date: 7/29/2019

COA Type	Description
	<p>Venting</p> <p>Operator shall implement measures to control unnecessary and excessive venting, to protect the health and safety of the public, and to ensure that vapors and odors from well plugging operations do not constitute a nuisance or hazard to public welfare.</p>
	<p>Bradenhead Testing</p> <ul style="list-style-type: none"> <li>• Prior to the start of plugging operations, a bradenhead test shall be performed and reported if there has not been a reported bradenhead test within the 60 days immediately preceding the start of plugging operations.</li> <li>• If any of the following conditions exist then sampling of all fluids is required and sampling methods shall comply with Operator Guidance – Bradenhead Testing and Reporting Instructions, Appendix A: Liquid and Gas Sampling as found on the COGCC website, <a href="http://cogcc.state.co.us">cogcc.state.co.us</a>.             <ol style="list-style-type: none"> <li>1) The initial pressure measurement on the bradenhead is greater than 25 psi, prior to blowing down any liquid or gas from the bradenhead valve, or</li> <li>2) Pressure remains at the conclusion of the test, or</li> <li>3) Any liquids are present anytime during the test. If so, then stop the test as soon as liquids are present and sample before resuming the test.</li> </ol> </li> <li>• Form 17 Bradenhead Test Report shall be submitted within 10 days of the test.</li> <li>• If samples are collected, copies of all final laboratory analytical results shall be provided to the COGCC within three (3) months of collecting the samples. Submit via a Form 43 to upload the laboratory results to the COGCC Environmental Database. Form 43 instructions are on COGCC's website under Regulation =&gt; Forms =&gt; Form 43 COGCC Environmental Database.</li> </ul>
	<p>Plugging</p> <ul style="list-style-type: none"> <li>• Provide 48 hour notice of plugging MIRU via electronic Form 42.</li> <li>• Plugs and squeezes will be placed as stated in the plugging procedure of the approved NOI unless revised by COA or prior approval from COGCC is obtained.</li> <li>• If there is any bradenhead pressure reported on the pre-plugging Form 17, operator must wait 8 hrs after pumping plug at 1915' and then check for fluid migration or shut-in pressure on the well. Contact COGCC Area Engineer for revised plugging orders prior to continuing with plugging operations if well is not static at that time. Document well conditions in operations summary attached to the Form 6 SRA.</li> <li>• Tag plug at 1915-1500' if circulation is not maintained while pumping and displacing plug to depth, 100' minimum required.</li> <li>• COGCC Change: Increase shoe/surface plug to 915-0', water well. Adjust cement volume accordingly.</li> <li>• Submit the gyro survey with the Form 6 SRA.</li> <li>• Check for fluid migration or shut-in pressure on the well prior to pumping any plug (open hole, annular or casing) that isolates deepest aquifer or the surface casing shoe (whichever is deeper). Contact COGCC Area Engineer for revised plugging orders if well is not static at this time prior to continuing with plugging operations. Document well conditions in operations summary attached to the Form 6 SRA.</li> <li>• Tag required if the shoe plug, or combined stub/shoe plug, is not circulated to the surface. Shoe plug shall be placed as specified herein and the top of cement must be a minimum 50' into the shoe, or 50' above the stub (if not cut below the shoe), whichever is shallower.</li> <li>• Place a 50' plug (minimum) at the surface, both inside the inner most casing and in all annular spaces. All other cement plugs, without mechanical isolation, shall have at least 100' of cement left in the casing. Confirm cement to surface in all strings during cut and cap and document in operations summary attached to the Form 6 SRA.</li> <li>• Properly abandon on-location flowlines as per Rule 1105. File electronic Form 42 once abandonment complete. Within 30 days of an operator completing abandonment requirements for an off-location flowline or crude oil transfer line the operator must submit a Flowline Report, Form 44.</li> </ul>

### Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
401843293	FORM 6 INTENT SUBMITTED
401843300	WELLBORE DIAGRAM
401843301	WELLBORE DIAGRAM

Total Attach: 3 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Engineer	Base L-FH = $4850 - 4500 = 350'$ WW + Elev diff = $780 + 4850 - 4765 = 865'$ AQ Isolation (with 50' excess) = $915'$ Logs 4/29/05 Base UPA 1660'	01/30/2019
Permit	Ready to pass form. Confirmed as drilled lat/long is accurate. Final Form 5/Drilling Completion Report on file as doc# 1430067. Codell formation completion confirmed via Form 5A/Completed Interval Report(s): doc# 1430068. Confirmed Form 7 production reporting is accurate.	11/21/2018
Well File Verification	Pass	11/20/2018

Total: 3 comment(s)