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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
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Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

02/09/2018  
PERMIT MODIFICATION APPROVAL  
Vertical / Plugging

CABOT OIL & GAS CORPORATION  
2000 PARK LANE, SUITE 300

PITTSBURGH, PA 15275

Re: Permit Modification Approval for C-48  
47-081-01183-00-00

**WILL SET BOTTOM HOLE PLUG BEFORE CUTTING 4 1/2 INCH PRODUCTION CASING**

CABOT OIL & GAS CORPORATION

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin  
Chief



Operator's Well Number: C-48  
Farm Name: BEAVER COAL CO., LTD.  
U.S. WELL NUMBER: 47-081-01183-00-00  
Vertical / Plugging  
Date Issued: 02/09/2018

Promoting a healthy environment.

81-01183 PM

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Fwd: Changes procedure 47-081-01183

Bill Shreve

Phillip Hill (phillip.hill@cabotog.com)

Reply

Sent from my iPhone

Begin forwarded message:

From: "Kennedy, Gary L" < >  
Date: February 8, 2018 at 7:53:41 AM EST  
To: Bill Shreve < >  
Subject: Re: Changes procedure 47-081-01183

Hey Bill

I see no problem with the change but we should run it by Jeff McLaughlin to get an official modification.

Thanks

Gary

Sent from my iPhone

On Feb 7, 2018, at 7:45 PM, Bill Shreve < > wrote:

To: Gary Kennedy WV DEP

Gary would you please look over changes I would like to make to the plugging procedure for Cabot Oil & Gas Beaver Coal C-48 API # 47-081-01183.

It was to pull 4 1/2" casing before setting bottom hole plugs. I do not think this is a good idea. it could bridge off and we will not be able to get back down to the bottom of the hole to set bottom hole plugs.

1. TOO H with 1 1/2" tubing.
2. Remove packer.
3. TIH with 1 1/2" tubing.
4. Set bottom hole plugs as described in procedure.
5. TOO H with 1 1/2" tubing.
6. Wait 8 hrs.
7. TIH with wire-line to confirm TOC.
8. Freepoint cut and pull 4 1/2" casing.
9. Go back to original procedure. Thank you Bill Shreve plugging supervisor for Cabot Oil & Gas.

Upgrade to Premium

**Beaver Coal C-48  
API # 47 - 081 - 01183  
PLUGGING PROCEDURE**

Current Configuration

TD @ 2,343'

16" conductor @ 30', not cemented

9-5/8" casing @ 266' cemented and grouted to surface

7" casing @ 842' cemented and grouted to surface

4 1/2" casing @ with cement top estimated to be at 861'

1-1/2" tubing @ 1,628' with Arrow Model PAD-1 Tension Packer @ 953'

Fresh water @ 105', 140', 400', 425', 432', 500'

Coal @ 60'-63', 72'-76', 110'-114', 135'-140', 188'-192'

Ravenciff @ 826' - 962'; perforations @ 884' - 914'; flowed gas but isolated behind packer and not produced due to excessive water production

Maxton @ 1548' - 1640'; "Upper Maxton" perforations @ 1,406' to 1,416'; "Middle Maxton" perforations @ 1,574' - 1,604'

Check Rock Pressure PROCEDURE

1. Contact Pineville Office a minimum of 48 hours prior to starting work.
2. Contact State Inspector a minimum of 24 hours prior to starting work.
3. Lay 2" line from wellhead to tank and stake down securely.
4. MIRU service rig and blow down well. Have vacuum truck available to catch any fluids circulated from well.
5. Unpack wellhead.
6. Latch onto 1 1/2" tubing, unset Arrow Model PAD-1 tension packer, POOH.
7. Run freepoint on 4 1/2" casing, cut above freepoint, and POOH. (NOTE: cement top is estimated @ 861')
8. TIH with 2 3/8" work string to 1,800'
9. MIRU Cement Company and pump 5.5 bbls 6% Gel.
10. Pump 46 sks (9 3/4 bbls) of Class A cement for cement plug #1 @ 1,800' - 1,300'.
11. Displace w/ 5 bbls of 6% Gel.
12. Pull work string up to +/- 1,000', safely above cement top. WOC minimum 8 hours.
13. RIH with workstring, tag TOC to confirm.
14. PU workstring to 950'.
15. Pump 6.5 bbls 6% gel followed by 36.5 sks (7 3/4 bbls) of Class A cement for cement plug #2 @ 950' - 700'.
16. Displace w/ 3 bbls of 6% Gel
17. Pull work string up to +/- 500', safely above cement top. WOC minimum 8 hours.
18. RIH with workstring, tag TOC to confirm.
19. PU workstring to 550'.
20. Pump 108.5 sks (22.8 bbls) of Class A cement for cement plug #3 @ 550' to surface
21. TOOH with work string and lay down.
22. RDMO Cementing Company.
23. Place monument as required by law on top of well bore.
24. Reclaim well site.

RECEIVED  
Office of Oil and Gas

JAN 23 2018

WV Department of  
Environmental Protection