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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  
fax: (304) 926-0452

Jim Justice, Governor  
Austin Caperton, Cabinet Secretary  
www.dep.wv.gov

PERMIT MODIFICATION APPROVAL  
Vertical / Vertical Well - 1

BRC OPERATING COMPANY, LLC  
200 CRESCENT COURT, SUITE 1900

DALLAS, TX 75201

Re: Permit Modification Approval for MWV RUPERT 3-1H  
47-025-00044-00-00

**Partial Plugging and Marcellus Completion**

BRC OPERATING COMPANY, LLC

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: MWV RUPERT 3-1H  
Farm Name: PLUM CREEK TIMBERLANDS LP  
U.S. WELL NUMBER: 47-025-00044-00-00  
Vertical / Vertical Well - 1  
Date Issued: 02/28/2017

Promoting a healthy environment.

03/03/2017



6000 Town Center Blvd.  
Suite 220  
Canonsburg, PA 15317  
Tel. 724.745.5929  
www.ntglobal.com

February 10, 2017

Mr. Jeff McLaughlin, Technical Analyst  
West Virginia Department of Environmental Protection  
Office of Oil and Gas  
601 57<sup>th</sup>. Street, SE  
Charleston, WV  
25304-2345

ATTN: Mr. McLaughlin

RE: BRC Operating Company, LLC  
Deep Vertical Gas Well Development  
**Operators Well Number: MWV Rupert 3-1H**  
**API Well Number: 47-2500044**  
**Submission of Well Work Permit Modification**  
**Partial Plugging Permit Application**

Please find attached application for "Partial Plugging" of the above referenced well.

Pursuant to submittal requirements of the application, find attached "Plugging Permit Checklist" which serves to summarize all included documents.

Both the surface owner and coal owner have been provided Waiver forms in order to expedite approval of the permit. Both have assured me that the waivers will be signed and are forthcoming. In an effort to proceed, absent the waivers; I have provided notice to each by certified mail. Upon receipt of the waiver, I will forward them under separate cover to the OOG.

Should you have any questions or may require an on-site meeting, please do not hesitate to contact me at 724-470-8664, or via email at [wjenko@ntglobal.com](mailto:wjenko@ntglobal.com).

Respectfully,

A handwritten signature in black ink, appearing to read 'Walter W. Jenko'.

Walter W. Jenko, P.E.

cc: Chad Touchet, Vice President-BRC Operating Company, LLC

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## Plugging Procedure

February 8, 2017

(Second Revision - 2/10/2017- Revision II)

1. Shut in well and pump 9.2# fluid from surface to upper set of perforations to kill well
2. Pull packer (set @ 11,380') & tubing out of well, lay tubing down and move to the side of location
3. PU 2 3/8" – PH6 rental string with 3.625" - drill bit (4.5" - 13.5# Casing - 3.795" drift)
4. RIH to first plug. Circulate 9.5 lb/gal kill fluid down the tubing & up the casing to make sure we do not take a pressure kick when we drill the plug @ 11,834'. Drill out. **Pump additional kill fluid as needed**
5. POOH, lay rental string - 2 3/8" – PH6 on the rack and release
6. RIH with 2 3/8" (BRC owned) tubing & 4 1/2" KLX squeeze packer
7. Set packer above the 3rd set of perforations (approximately 8,600')
8. RU Cement pump & pump complete tubing & casing volume with fresh water – 87 Bbls
9. Mix 58.5 bbls cement (approximately 300 sacks) - volume from 8,600' to 12,520' (squeeze packer to lower CIBP) and displace with fresh water until below the packer set @ 8,600'. If we do not pump clean fluid past the packer, unset packer, pull 10 stands of pipe and reverse out any residual cement
10. Shut down & wait for cement to set
11. RIH with tubing & tag the top of the cement to make sure the location of the top of the cement is acceptable to the DEP
12. Release all pressure on ALL tubulars (tubing and casing) and POOH. Lay tubing down and move to the side of location
13. RIH with casing jet cutter & cut casing 100 – 200 feet above highest cement point
14. RU 4 1/2" WOR handling tools and pull casing out of well, laying down
15. Shut in & secure well. Rig down all services & move off location. Wait for permits before completing Marcellus

Field Contact:

Jake Benton – 903.617.7316

[bentonjake@yahoo.com](mailto:bentonjake@yahoo.com)

Benton Consulting, LLC.

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200 Crescent Court  
Suite 1900  
Dallas, Texas 75201  
Tel: 817-739-4410  
Fax: 682-626-1333  
Email: catouchet@bluescapedgroup.com

Chad Touchet  
Vice President  
Completions & Production

February 13, 2017

Mr. Jeff McLaughlin  
West Virginia Department of Environmental Protection  
Office of Oil and Gas  
601 57<sup>th</sup>. Street, SE  
Charleston, WV  
25304-2345

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Re: MWV Rupert 3-1H Vertical Well

API Well No. 47-02500044

Greenbrier County, WV

Permit Modification Request

Dear Mr. McLaughlin:

As discussed during our telephone conference of February 9, 2017, BRC Operating Company, LLC herein this letter is making request to the Office of Oil and Gas for modification to the above referenced Well Work Permit. The proposed modification work is outlined as follows:

**VERTICAL COMPLETION/TEST GENERAL PLAN:** Completion and testing of vertical operations for the Marcellus formation with slickwater fracture stimulation.

**Marcellus Formation ( 8,230' to 8,390' )**

1. MIRU work over unit.
2. Run TCP gun to formation, positioned at TVD  $\geq$  8,230', within 9-5/8" casing.

03/03/2017

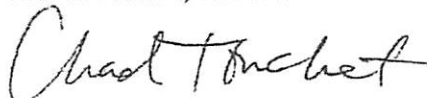
3. Position and fire gun into formation, 6 SPF and 60° phasing at 2' length. Distribute at 5 clusters spaced evenly throughout formation; total 60 holes.
4. RD
5. RU fracturing equipment.
6. Fracture and stimulate Marcellus formation; use water from MWV Fresh Water Impoundment.
7. Flush wellbore clean.
8. RD.
9. Initiate flowback operations.
10. Record flowback volumes.
11. Evaluate formation open and final flows for 30 day period.

Approval by the Office of Oil and Gas at its earliest opportunity would be most appreciated.

Should you have any questions, please do not hesitate to contact me.

Respectfully,

Chad A. Touchet, Vice President



Cc: Gene Smith, WV DEP-OOG

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