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west virginia department of environmental protection

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Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

## PERMIT MODIFICATION APPROVAL

August 14, 2013

RAVEN RIDGE ENERGY  
3230 PENNSYLVANIA AVENUE  
CHARLESTON, WV 25302

Re: Permit Modification Approval for API Number 3906351 , Well #: WHITE 2A  
**MODIFY CASING TO FRACTURE**

Oil and Gas Operator:

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.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

Gene Smith  
Regulatory/Compliance Manager  
Office of Oil and Gas

ISSUED  
8/14/2013

39-06351M

WW - 2B  
(Rev. 8/10)

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**WELL WORK PERMIT APPLICATION**

1) Well Operator: RAVEN RIDGE ENERGY, LLC 494485865 KANAWHA - 39 BIG SANDY - 1 BLUE CREEK - 258  
Operator ID County District Quadrangle

2) Operator's Well Number: WHITE 2A 3) Elevation: 811'

4) Well Type: (a) Oil X or Gas X  
(b) If Gas: Production X / Underground Storage \_\_\_\_\_  
Deep \_\_\_\_\_ / Shallow X

5) Proposed Target Formation(s): WEIR Proposed Target Depth: 2,100'  
6) Proposed Total Depth: 2,400' Feet Formation at Proposed Total Depth: 2,000' - 2,400'  
7) Approximate fresh water strata depths: 150'  
8) Approximate salt water depths: 1,100' - 1,600'

9) Approximate coal seam depths: NO COAL LISTED IN TITLE

10) Approximate void depths,(coal, Karst, other): NONE

11) Does land contain coal seams tributary to active mine? NO

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)  
DRILL, STIMULATE AND FRAC (ACID & WATER) A NEW WELL.

*Henry D. Hester*  
8-16-13

13) **CASING AND TUBING PROGRAM**

| TYPE         | SPECIFICATIONS |       |               | FOOTAGE INTERVALS |              | CEMENT             |
|--------------|----------------|-------|---------------|-------------------|--------------|--------------------|
|              | Size           | Grade | Weight per ft | For Drilling      | Left in Well | Fill -up (Cu. Ft.) |
| Conductor    |                |       |               |                   |              |                    |
| Fresh Water  | 9 5/8"         | LS    | 17LBS         | 350'              | 350'         | CTS                |
| Coal         |                |       |               |                   |              |                    |
| Intermediate | 7"             | J55   | 23LBS         | 1,850'            | 1,850'       | CTS                |
| Production   | 4 1/2"         | J55   | 10.5LBS       | 2200'             | 2200'        | 150 Sacks Cmt.     |
| Tubing       |                |       |               |                   |              |                    |
| Liners       |                |       |               |                   |              |                    |

**Received**

AUG - 6 2013  
Office of Oil and Gas  
WV Dept. of Environmental Protection

Packers: Kind: \_\_\_\_\_  
Sizes: \_\_\_\_\_  
Depths Set \_\_\_\_\_  
*Well is Drilling Running Csg to Stimulate (TU)*

08/16/2013

## Nottingham, Justin E

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**From:** Danielle Boggs <dani.bays@cunninghamenergy.com>  
**Sent:** Tuesday, August 06, 2013 1:44 PM  
**To:** Nottingham, Justin E  
**Cc:** Smith, Gene C; Urban, Terry W; ryan.cunningham@cunninghamenergy.com  
**Subject:** Modifications  
**Attachments:** SKMBT\_C35130806130900.pdf

Hey Justin –

Please see attached modified WW-2B forms for the following wells:

White 1A – API 47-3906354  
White 2A – API 47-3906351  
Osborne 1A – API 47-3906347  
Osborne 2A – API 47-3906350  
Crum 1A – API 47-3906349

We wish to modify these permits to show that we wish to stimulate these wells rather than shoot them as we had first requested.

Thank you,  
*Danielle N. Boggs*  
Cunningham Energy  
3230 Pennsylvania Ave  
Charleston, WV 25302  
Direct: (304) 344-9291  
Cell: (304) 553-5850  
Fax: (304) 344-9290  
[www.cunninghamenergy.com](http://www.cunninghamenergy.com)



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