west virginia department of environmental protection

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

PERMIT MODIFICATION APPROVAL

September 25, 2014

NOBLE ENERGY, INC.
333 TECHNOLOGY DRIVE, SUITE 116
CANONSBURG, PA 15317

Re: Permit Modification Approval for API Number 5101669 , Well #: MND3FHS
Added Target Formations

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
Assistant Chief of Permitting
Office of Oil and Gas

noble energy

4705101669
MOD

July 29, 2014

Dee Swiger
Regulatory Analyst III

West Virginia Department of Environmental Protection
Office of Oil and Gas
Environmental Resource Analyst
601 57th St. S.E
Charleston, WV 25304

Permit Application – **MND 3 FHS 47-051-01669 modification for additional zones**

Dear Office of Oil & Gas,

Enclosed please find a revised WW-6B revising line 6 and 16. We would like to modify the permit to allow us to stimulate and produce the Burkett, Tully, Hamilton and Marcellus formations. I have also included a revised survey plat and signed waiver from the coal operator. We anticipate completing this well mid-September.

Please let me know if you require further information.

Sincerely,

Dee Swiger

DS/

Enclosure(s):

Received
AUG 1 2014
Office of Oil and Gas
WV Dept. of Environmental Protection

WW - 6B
(3/13)

4705101669
MOD

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

1) Well Operator:	Noble Energy, Inc	494501907	Marshall	Franklin	Powhatan Point
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: MND 3 FHS Well Pad Name: MND 3

3 Elevation, current ground: 1128.39' Elevation, proposed post-construction: 1112'

4) Well Type: (a) Gas ■ Oil _____ Underground Storage _____

Other _____

(b) If Gas: Shallow ■ Deep _____

Horizontal ■

5) Existing Pad? Yes or No: NO

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):

Target-Burkett Depth 6170-6197', Thickness 27', Pressure 4090 PSI, Tully Depth 6197-6205.5, Thickness 8.5' Pressure 4096 PSI, Hamilton Depth 6205.5-6226', Thickness 20.5', Pressure 4109 PSI, Marcellus, Depth-6226'-6290 Thickness-64', Pressure-4151 PSI

7) Proposed Total Vertical Depth: 6279'

8) Formation at Total Vertical Depth: Marcellus

9) Proposed Total Measured Depth: 12,804'

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Office of Oil and Gas
WV Dept. of Environmental Protection

10) Approximate Fresh Water Strata Depths: 165', 298'

11) Method to Determine Fresh Water Depth: Offset well data

12) Approximate Saltwater Depths: None noted for offsets

13) Approximate Coal Seam Depths: 612' Pittsburgh Base

14) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated, drilling in pillar-see mine maps

15) Does proposed well location contain coal seams directly overlying or adjacent to an active mine? If so, indicate name and depth of mine: Yes, McElroy & Ireland Mine at approx. 612'

16) Describe proposed well work: Drill the vertical depth to the Marcellus at an estimated total vertical depth of approximately 6,279 feet.

Drill Horizontal leg - stimulate and produce from the Burkett to and including the Marcellus Formation.

If we should encounter an unanticipated void we will install casing at a minimum of 20' below the void but not more than 50' below the void, set a basket and grout to surface.

17) Describe fracturing/stimulating methods in detail:

The stimulation will be multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals. See attached list.

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 15.6 acres

19) Area to be disturbed for well pad only, less access road (acres): 9.1 acres

4705101669 MOD

WW-6AW
(1-12)

API NO. 47-051-01669
OPERATOR WELL NO. MND3 FHS
Well Pad Name: MND3

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A
The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions
Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided,* That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, Alex O'Neill, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	West Virginia	WVSPN NAD 27	Easting:	1,637,190.948
County:	Marshall		Northing:	494,425.707
District:	Franklin	Public Road Access:		County Road 2/1
Quadrangle:	POWHATAN POINT	Generally used farm name:		CONSOLIDATION COAL CO.
Watershed:	Conner Run			

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials, **provided that NOBLE ENERGY, INC. drills the well on WV North NAD27 coordinates of North 494,425.707, East 1,637,190.948.**

*Please check the box that applies

- ☐ SURFACE OWNER
- ☐ SURFACE OWNER (Road and/or Other Disturbance)
- ☐ SURFACE OWNER (Impoundments/Pits)
- ☐ COAL OWNER OR LESSEE
- ☒ COAL OPERATOR
- ☐ WATER PURVEYOR
- ☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD

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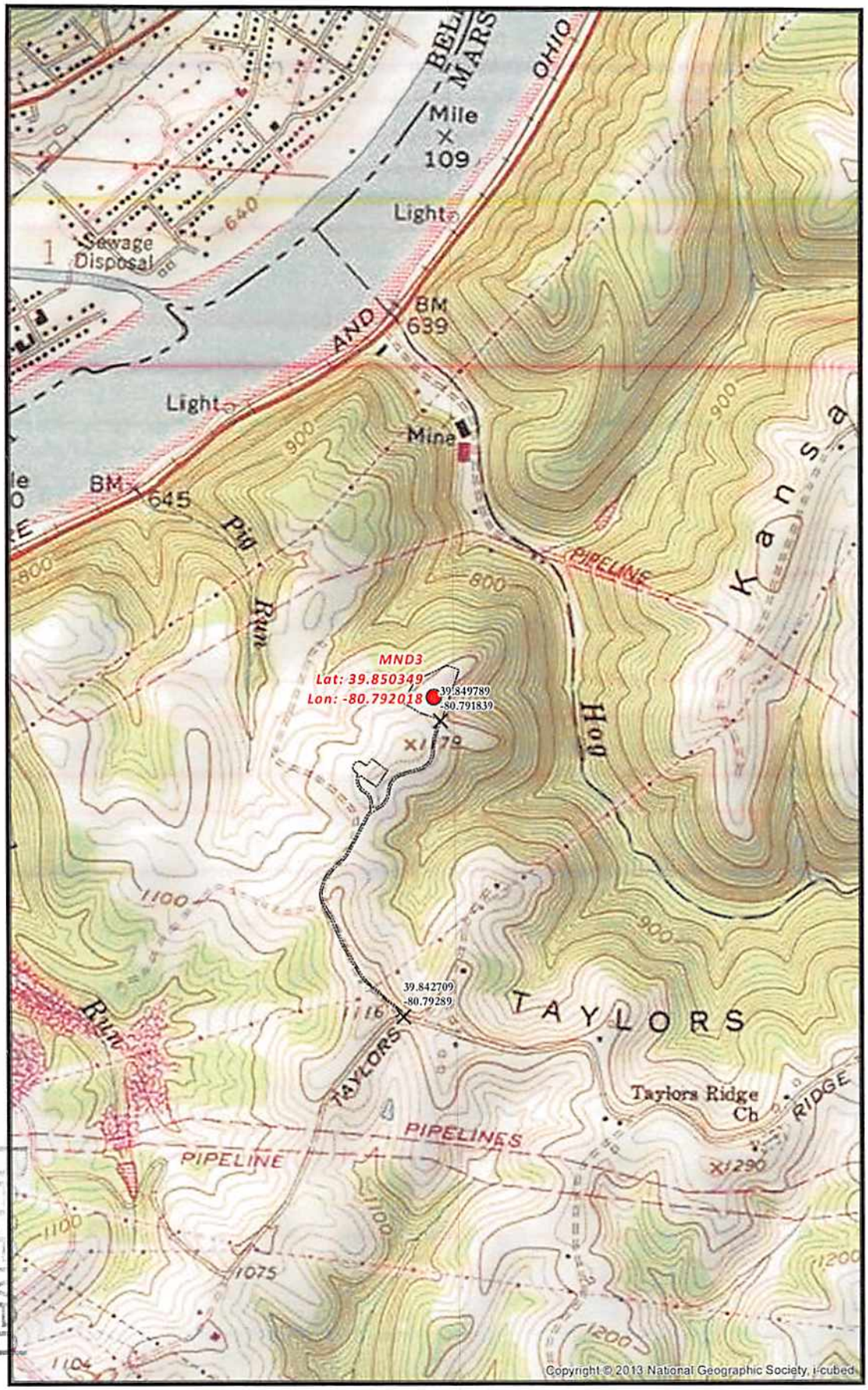
AUG 1 2014
Office of Oil and Gas
WV Dept. of Environmental Protection

FOR EXECUTION BY A NATURAL PERSON
Signature: _____
Print Name: _____
Date: _____

FOR EXECUTION BY A CORPORATION, ETC.
Company: CONSOLIDATION COAL CO.
By: Alex O'Neill
Its: Coal, Oil & Gas Relations Manager
Signature: _____
Date: 7/25/2014

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov

51-01669



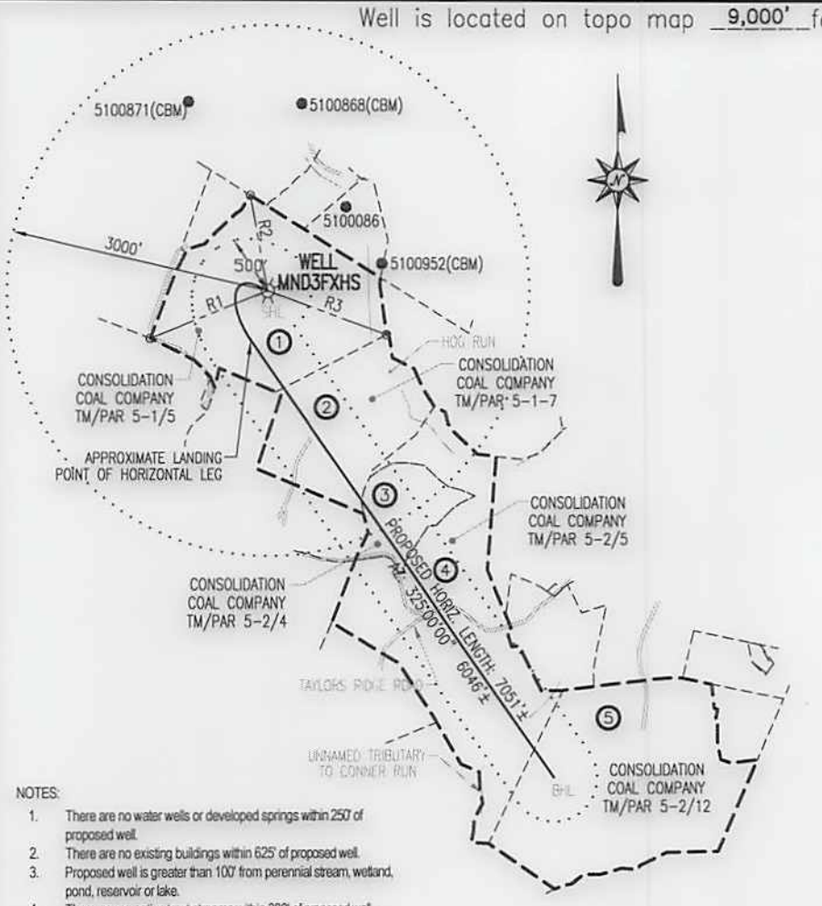
MND3 SITE SAFETY PLAN - SITE WELL LOCATION -	0 500 1,000 2,000 Feet Scale 1" = 1,000'	noble energy	Date: 7/3/2013 Author: ChristopherGlover
Access Road Intersection · Well Pad Center PROPOSED	Projection: NAD_1927_StatePlane_West_Virginia_North_FIPS_4701 Units: Feet US	Disclaimer: All data is licensed for use by Noble Energy Inc. use only.	1/6

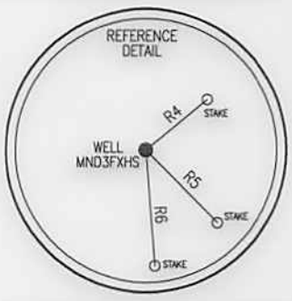
Document Path: G:\Denver\GIS-Denver\Projects\District_30\Appalachia\MXDs\EHSR\Permitting\Moundsville\MND3\D30_PA_WV_MND3_Well_Location.mxd

RECEIVED
AUG 8 2013

Well is located on topo map 9,000' feet south of Latitude: 39 ° 52 ' 30 "

Well is located on topo map 163' feet west of Longitude: 80 ° 47 ' 30 "





LINE	BEARING	DISTANCE
R1	S 68°23'02" W	1448.13'
R2	N 10°33'55" W	1095.09'
R3	S 70°11'23" E	1450.46'
R4	N 50°29'36" E	180.96'
R5	S 44°43'46" E	232.44'
R6	S 04°29'51" E	263.48'

NOTES:

1. There are no water wells or developed springs within 250' of proposed well.
2. There are no existing buildings within 625' of proposed well.
3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
4. There are no native trout streams within 300' of proposed well.
5. Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
6. It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

LEGEND

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- WATER SOURCE
- LEASE NUMBER BASED ON ATTACHED WW-6A1
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE

WELLS WITHIN 3000'

- EXISTING WELLS
- PLUGGED WELLS

SURFACE HOLE LOCATION (SHL)	APPROX. LANDING POINT	BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83	UTM 17-NAD83	UTM 17-NAD83
N:4411172.14	N:4411002.05	N:4409510.86
E:517788.00	E:517732.48	E:518814.22
NAD27, WV NORTH	NAD27, WV NORTH	NAD27, WV NORTH
N:494425.684	N:493870.57	N:488917.84
E:1637190.950	E:1636999.43	E:1640467.38
LAT/LON DATUM-NAD83	LAT/LON DATUM-NAD83	LAT/LON DATUM-NAD83
LAT:39.850383	LAT:39.848852	LAT:39.835393
LON:80.792064	LON:80.792718	LON:80.780116

Blue Mountain Inc.
11023 MASON DIXON HIGHWAY
BURTON, WV 26562
PHONE: (304) 662-6486

FILE #: MND3FXHS

DRAWING #: MND3FXHS

SCALE: 1" = 2000'

MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: [signature]

R.P.E.: _____ L.L.S.: P.S. No. 2000

GEORGE D. SIX LICENSED No. 2000 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: JULY 28, 2014

OPERATOR'S WELL #: MND3FXHS

API WELL #: 47 (STATE) 51 (COUNTY) 01669 H6A MOD (PERMIT)

Well Type: ☐ Oil ☐ Waste Disposal ☒ Production ☐ Deep
☒ Gas ☐ Liquid Injection ☐ Storage ☒ Shallow

WATERSHED: SHORT CREEK ELEVATION: 1128.39'

COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, OH-WV 7.5'

SURFACE OWNER: CONSOLIDATION COAL COMPANY ACREAGE: 180.214±

OIL & GAS ROYALTY OWNER: SEE ATTACHED WW-6A1 ACREAGE: 380.911±

DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☐

PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐ PLUG & ABANDON ☐

CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY): _____

TARGET FORMATION: BURKETT-TULLY-HAMILTON-MARCELLUS ESTIMATED DEPTH: TVD: 6,279'± TMD: 12,804'±

WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN

Address 333 TECHNOLOGY DRIVE, SUITE 116 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590

City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301