PERMIT MODIFICATION APPROVAL

November 17, 2014

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

Re: Permit Modification Approval for API Number 51017325, Well #: MND 6 HHS

Deep Well Approved

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,

[Signature]

Gene Smith
Assistant Chief of Permitting
Office of Oil and Gas

Promoting a healthy environment.
Department of Environmental Protection
Office of Oil and Gas
Charleston, WV 25304

RE: Application for Deep Well Permit – API #47-051-01732

COMPANY: Noble Energy, Inc.
FARM: Consolidation Coal Company #MND 06 HHS
COUNTY: Marshall DISTRICT: Franklin QUAD: Powhatan Point

The deep well review of the application for the above company is APPROVED FOR UTICA/POINT PLEASANT. If operator wishes to drill deeper than the Trenton, additional approval must be obtained from the OGCC.

The applicant has complied with the provision of Chapter 22C-9, of the Code of West Virginia, nineteen hundred and thirty-one (1931), as amended, Oil and Gas Conservation Commission as follows:

1. Comments to Notice of Deviation filed? No

2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners; Yes

3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells, well name, and the name and address of the operator; none

4. Provided a plat showing that the proposed location is a distance of 400 feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

Cindy Raines
Executive Assistant

Promoting a healthy environment.
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 6 HHS** Well Pad Name: **MND 6**

3) Farm Name/Surface Owner: **Consolidated Coal Company** Public Road Access: **CR 7/4-Fish Creek Rd**

4) Elevation, current ground: **722'** Elevation, proposed post-construction: **721'**

5) Well Type
   (a) Gas
   (b) If Gas
      Shallow
      Horizontal
   Oil
   Underground Storage

6) Existing Pad: Yes or No **Yes**

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
   Utica at 9809' - 10358' 549' in thickness. Anticipated pressure at 9075. Point Pleasant at 10358' - 10467' 109' in thickness - Anticipated pressure 9371

8) Proposed Total Vertical Depth: **10,667'**

9) Formation at Total Vertical Depth: **Trenton**

10) Proposed Total Measured Depth: **20,115'**

11) Proposed Horizontal Leg Length: **9,094'**

12) Approximate Fresh Water Strata Depths: **128' and 265'**

13) Method to Determine Fresh Water Depths: **Offset well data**

14) Approximate Saltwater Depths: **None noted in offsets**

15) Approximate Coal Seam Depths: **284' to 294'**

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

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? **Yes**

(a) If Yes, provide Mine Info: **Name:** 1082' to nearest active mining
    **Depth:** Base at 294' at deepest point
    **Seam:** Pittsburgh
    **Owner:** Murray American Energy (Previously Consol)

11/21/2014
### Casing and Tubing Program

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Size</th>
<th>New or Used</th>
<th>Grade</th>
<th>Weight per ft (lb/ft)</th>
<th>FOOTAGE: For Drilling</th>
<th>INTERVALS: Left in Well</th>
<th>CEMENT: Fill-up (Cu. Ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor</td>
<td>30&quot;</td>
<td>New</td>
<td>LS</td>
<td>94#</td>
<td>120'</td>
<td>120'</td>
<td>GTS</td>
</tr>
<tr>
<td>Fresh Water</td>
<td>20&quot;</td>
<td>New</td>
<td>LS</td>
<td>94#</td>
<td>694'</td>
<td>694'</td>
<td>CTS</td>
</tr>
<tr>
<td>Coal</td>
<td>13 3/8&quot;</td>
<td>NEW</td>
<td>J-55</td>
<td>54.5#</td>
<td>2017'</td>
<td>2017'</td>
<td>CTS</td>
</tr>
<tr>
<td>Intermediate</td>
<td>9 5/8&quot;</td>
<td>New</td>
<td>J-55</td>
<td>53#</td>
<td>8869'</td>
<td>8869'</td>
<td>CTS</td>
</tr>
<tr>
<td>Production</td>
<td>5 1/2&quot;</td>
<td>New</td>
<td>P110</td>
<td>23#</td>
<td>20,115'</td>
<td>20,115'</td>
<td></td>
</tr>
<tr>
<td>Tubing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**JIN 8/13/14**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Size</th>
<th>Wellbore Diameter</th>
<th>Wall Thickness</th>
<th>Burst Pressure</th>
<th>Cement Type</th>
<th>Cement Yield (cu. ft/k)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor</td>
<td>30&quot;</td>
<td>36&quot;</td>
<td>.375</td>
<td></td>
<td>GTS</td>
<td>GTS</td>
</tr>
<tr>
<td>Fresh Water</td>
<td>20&quot;</td>
<td>26&quot;</td>
<td>.438</td>
<td>2730</td>
<td>Type 1</td>
<td>1.18</td>
</tr>
<tr>
<td>Coal</td>
<td>13 3/8&quot;</td>
<td>17 1/2&quot;</td>
<td>.380</td>
<td>2730</td>
<td>Type 1</td>
<td>1.18</td>
</tr>
<tr>
<td>Intermediate</td>
<td>9 5/8&quot;</td>
<td>12 1/4&quot;</td>
<td>.545</td>
<td>10,900</td>
<td>Class A</td>
<td>2.47 lead and 1.57 tail</td>
</tr>
<tr>
<td>Production</td>
<td>5 1/2&quot;</td>
<td>8 1/2&quot;</td>
<td>.415</td>
<td>16,510</td>
<td>Class A</td>
<td>1.3</td>
</tr>
<tr>
<td>Tubing</td>
<td></td>
<td>See attached WBS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Packers

| Kind: | |
| Size: | |
| Depths Set: | |
19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill the vertical pilot depth to the Trenton at an estimated total vertical depth of approximately 10,667 feet, plug back with solid cement to 200' above KOP at 9445'. Drill Horizontal leg - stimulate and produce the Point Pleasant / Utica Formations. If we should encounter an unanticipated void we will install casing at a minimum of 20' below the void but not more than 100' below the void, set a basket and grout to surface.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

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. Maximum pressure not to exceed 14,000 lb.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 9.6

22) Area to be disturbed for well pad only, less access road (acres): 7.3

23) Describe centralizer placement for each casing string:

No centralizers will be used with conductor casing. Surface casing Centralized every 3 joints to surface. 1st Intermediate string- Bow spring on first 2 joints then every third joint to 100' from surface. 2nd intermediate string- Bow spring every third joint to 100' from surface. Production casing - Curve - Rigid Bow Spring every third joint from KOP to TOC. Lateral Rigid Bow Spring every joint to KOP.

24) Describe all cement additives associated with each cement type:

Conductor-GTS. Surface & 1st Intermediate- 15.6 ppg Type 1 +2% CaCl, 0.25% Lost Circ 30% excess Yield=1.18. 2nd Intermediate 12.0 Class A lead + 5% dispersent, 10% light weight additive, .75% fluid loss additive, Yield=2.47/13.5 ppg class A tail + .5% light weight additive, Yield =1.57,0.125%sk Lost Circ 20% Excess Yield 1.19 to surface. Production - 15.0 ppg Class A+.35% retarder, 14% dispersent, .8% fluid loss & .2% freewat additive, 10% excess Yield =1.3 TOC>=1000' above 9.625' shoe. Pilot Hole- 16.8 ppg Class G (HAL) +0.55 friction reducer, .4% defoamer & .15% retarder from TD to 200' above KOP (2) 800' balanced plugs w/2.375' tubing. Yield =1.02

Surface and Coal string WVDEP approved variance attached.

25) Proposed borehole conditioning procedures:

Conductor-The hole is drilled w/air and casing is run on air. Apart from insuring the hole is clean via air circulation at TD, there are no other conditioning procedures. Surface/Coal-The hole is drilled w/air and casing is run on air. Fill with KCl water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement 1st and 2nd Intermediate -The hole is drilled and cased w/air or on SOBM. Once casing is at TD, the hole is filled w/KCl water and a minimum of one hole volume is circulated prior to pumping cement. Production-The hole is drilled with SOBM and once to TD, circulated at maximum allowable pump rate for at least 6x bottoms up. Once on bottom with casing, circulate a minimum of one hole volume prior to pumping cement. Pilot - Once at TD, Circulate at drilling pump rate for at least 3 hours. TOOH and run OH logs.

*Note: Attach additional sheets as needed.
<table>
<thead>
<tr>
<th>Ground Elevation</th>
<th>MND-6H SHL (Lat/Long)</th>
<th>MND-6H LP (Lat/Long)</th>
<th>MND-6H BHL (Lat/Long)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azm</td>
<td>720'</td>
<td>325°</td>
<td>12.25'</td>
<td></td>
</tr>
<tr>
<td>WELLBORE DIAGRAM</td>
<td>36°</td>
<td>26°</td>
<td>17.5°</td>
<td></td>
</tr>
<tr>
<td>HOLE</td>
<td>30' 949 ft LS</td>
<td>20' 949 ft</td>
<td>13.38' 54.5 ft</td>
<td></td>
</tr>
<tr>
<td>CASING</td>
<td>Conductor: 1 2/0</td>
<td>AIR or 6 1/2</td>
<td>Big Lime: 1488</td>
<td></td>
</tr>
<tr>
<td>GEOLgy</td>
<td>To Surface</td>
<td>AIR or 6 1/2 WBM</td>
<td>15.6 ppg Type 1</td>
<td></td>
</tr>
<tr>
<td>MD</td>
<td>208</td>
<td>264</td>
<td>+ 2% CaCl, 0.25%Lost</td>
<td></td>
</tr>
<tr>
<td>TVD</td>
<td>272</td>
<td>1498</td>
<td>Circ. 30% Excess</td>
<td></td>
</tr>
<tr>
<td>MUD</td>
<td>N/A</td>
<td>694</td>
<td>Yield = 1.18</td>
<td></td>
</tr>
<tr>
<td>CEMENT</td>
<td>Centralized every 3</td>
<td>15.6 ppg Type 1</td>
<td>Fill with KCl water</td>
<td></td>
</tr>
<tr>
<td>CENTRALIZERS</td>
<td>joints to surface</td>
<td>+ 2% CaCl, 0.25%Lost</td>
<td>once drilled to TD.</td>
<td></td>
</tr>
<tr>
<td>CONDITIONING</td>
<td></td>
<td>30% Excess</td>
<td>Once casing is</td>
<td></td>
</tr>
<tr>
<td>COMMENTS</td>
<td></td>
<td>Yield = 1.18</td>
<td>at setting depth,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>circulate a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>minimum of one hole</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>volume prior to</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>pumping cement.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Water protection &amp;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>coil isolation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>string, casing set</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>400 ft below PI top.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Surface casing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>= 0.438&quot; wall</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>thickness Burst=2700</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>psi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Office of Oil and Gas**

**Enforcement**

**SEP 11 2014**

**11/21/2014**
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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SIGNATURE: [Signature]

DATE: NOVEMBER 06, 2014

OPERATORS WELL #: 051-17015
APR WELLS #: 47 051 01732
STATE: WV
COUNTY: PERMIT

WELL TYPE: OIL
WATER TYPE: FISH CREEK
WATERSHED: MARSHALL
COUNTRY/DISTRICT: F. FRANKLIN
SURFACE OWNER: CONSOLIDATION COAL COMPANY
OIL & GAS ROYALTY OWNER: CNX GAS COMPANY LLC and NOBLE ENERGY, INC.

DISPOSAL: LIQUID INJECTION
PRODUCTION: DEEP
STORAGE: DEEP
SUBSURFACE: DEEP

ELEVATION: 110.0' (DESIGN NAVD 88)
QUADRANGULAR: POCOMHTA POINT, ORIO-TH
ACREAGE: 136.5874
ACREAGE: 136.5874

CONVERT: PERFORATE NEW FORMATION
DEEP: PLUG & ABANDON
DEEP: PLUG & REFORM DRILL
DEEP: CLEAN OUT & REPLUG
DEEP: OTHER CHANGE (SPECIFY):

TARGET FORMATION: OTIGA AND POINT PLEASANT
WELL OPERATOR: NOBLE ENERGY, INC.
DESIGNATED AGENT: STEVE M. GREEN
ADDRESS: 333 TECHNOLOGY DRIVE, SUITE 116
CITY: CANONSBURG
STATE: PA
ZIP CODE: 15317

ADDRESS: 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 500
CITY: CHARLESTON
STATE: WV
ZIP CODE: 25301

FILE #: 093942010
DRAWING #: 093942010-SV-Plot
SCALE: PLAT & TCH: 1" = 2,000'
MINIMUM DEGREE OF ACCURACY: 1/2,600

PROVINCE SOURCE: NGS (CORS)

DATE OF SURVEY: NOVEMBER 05, 2014

SIGNATURE: [Signature]

STATE OF WEST VIRGINIA
NO. 2241
COUNTY OF MARSHALL

PLAT SEAL HERE