September 30, 2015

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-5101865, issued to NOBLE ENERGY, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: MND1 JHS
Farm Name: CONSOLIDATION COAL COMPA
API Well Number: 47-5101865
Permit Type: Horizontal 6A Well
Date Issued: 09/30/2015

Promoting a healthy environment.
PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.

2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled Water Well Regulations, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.

7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.

8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

10/02/2015
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

Operator ID County District Quadrangle

2) Operator’s Well Number: MND 1 JHS  Well Pad Name: MND 1

3) Farm Name/Surface Owner: Murray Energy Corporation (formerly Consol)  Public Road Access: County Highway 88/8

4) Elevation, current ground: 1152.08' Elevation, proposed post-construction: 1152.08'

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

6) Existing Pad: Yes or No  Yes - See attached as built

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s): Marcellus 6315 - 6370' / 55' Thick / 4204 psi

8) Proposed Total Vertical Depth: 6,360'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 15,150'

11) Proposed Horizontal Leg Length: 7,622'

12) Approximate Fresh Water Strata Depths: 521', 801', 898', 947'

13) Method to Determine Fresh Water Depths: Nearest offset well

14) Approximate Saltwater Depths: None

15) Approximate Coal Seam Depths: 687'-697'

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

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes X No

(a) If Yes, provide Mine Info: Name: wells are located in abandoned area of MC Elroy Mine
Depth: 692' to seam base
Seam: Pittsburgh #8
Owner: Consol Mining Company, LLC

Received
Office of Oil & Gas
AUG 03 2015
### CASING AND TUBING PROGRAM

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Size (in)</th>
<th>New or Used</th>
<th>Grade</th>
<th>Weight per ft (lb/ft)</th>
<th>FOOTAGE: For Drilling (ft)</th>
<th>INTERVALS: Left in Well (ft)</th>
<th>CEMENT: Fill-up (Cu. Ft.)/CTS</th>
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<td>20&quot;</td>
<td>New</td>
<td>LS</td>
<td>94</td>
<td>40'</td>
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<td>Surface to TD</td>
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<tr>
<td>Fresh Water</td>
<td>13 3/8&quot;</td>
<td>New</td>
<td>J-55</td>
<td>54.5</td>
<td>1097'</td>
<td>1097'</td>
<td>CTS</td>
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<tr>
<td>Coal</td>
<td>13 3/8&quot;</td>
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<td>Intermediate</td>
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<td>5 1/2&quot;</td>
<td>New</td>
<td>P-110</td>
<td>20.0</td>
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<td>15,150'</td>
<td>10% excess Yield = 1.32 TDC+200' above 9,625 shae</td>
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<th>Wellbore Diameter (in)</th>
<th>Wall Thickness (in)</th>
<th>Burst Pressure (psi)</th>
<th>Anticipated Max. Internal Pressure (psi)</th>
<th>Cement Type</th>
<th>Cement Yield (cu. ft/k)</th>
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<td>26&quot;</td>
<td>0.438</td>
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<td>Type III</td>
<td>Surface to TD</td>
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<td>Fresh Water</td>
<td>13 3/8&quot;</td>
<td>17.5&quot;</td>
<td>0.380</td>
<td>2730</td>
<td>Class A</td>
<td>Class A</td>
<td>30% excess Yield =1.18</td>
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<tr>
<td>Coal</td>
<td>13 3/8&quot;</td>
<td>17.5&quot;</td>
<td>0.380</td>
<td>2730</td>
<td>Class A</td>
<td>Class A</td>
<td>30% excess Yield =1.18</td>
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<tr>
<td>Intermediate</td>
<td>9 5/8&quot;</td>
<td>12.38&quot;</td>
<td>0.325</td>
<td>3520</td>
<td>Class A</td>
<td>Class A</td>
<td>20% excess Yield =1.18</td>
</tr>
<tr>
<td>Production</td>
<td>5 1/2&quot;</td>
<td>8.75&quot;-8.5&quot;</td>
<td>0.361</td>
<td>12,640</td>
<td>Class A/POZ</td>
<td>Class A/POZ</td>
<td>10% excess Yield = 1.32 TDC+200 above 9,625 shae</td>
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<tr>
<td>Tubing</td>
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### PACKERS

| Kind:            |          |            |            |
| Size:            |          |            |            |
| Depths Set:      |          |            |            |

Received by: Office of Oil & Gas

AUG 03 2015

10/02/2015
19) Describe proposed well work, including the drilling and plugging back of any pilot hole:
Drill the vertical depth to the Marcellus at an estimated total vertical depth of approximately 6360 feet. Drill Horizontal leg - stimulate and produce the Marcellus Formation. Should we encounter formation issues, set the 13 3/8 into next competent formation but not deeper than elevation. Should we encounter a unanticipated void we will install a minimum of 20' of casing 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. The maximum pressure is not to exceed 10,000 psi and the maximum rate will not exceed 90 bpm.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 9.0
22) Area to be disturbed for well pad only, less access road (acres): 7.6

23) Describe centralizer placement for each casing string:
No centralizers will be used with conductor casing. Surface casing will have bow spring centralizers on first two joints then every third joint to 100' from surface. Intermediate casing will have bow spring centralizers every third joint to 100' from surface. Production casing will have Rigid bow spring every third joint from KOP to TOC. Rigid bow spring every joint to KOP.

24) Describe all cement additives associated with each cement type:
Conductor- Type III *Surface and Coal- 15.6 ppg Class A +2% CaCl (CA-100), 0.25# Lost Circ (CLC-CPF)30% Excess Yield =1.18 To surface. Intermediate 15.6 ppg Class A +2% CaCl, 0.25# Lost Circ 30% excess yield =1.18 to surface. Production 14.5ppg 75/25 Class A/Poz +/-0.4 % fluid Loss additive, +/-0.4% retarder, +/-0.5% dispersant, +/-0.2% anti-foam, +/-2% extender, 10% excess Yield = 1.32 TOC>=200' above 9.625'' shoe.

25) Proposed borehole conditioning procedures:
Conductor - The hole is drilled w/ air and casing is run in air. Apart from insuring the hole is clean via air circulation at TD, there are no other conditioning procedures. Fresh Water/Surface -The hole is drilled w/air and casing is run in air. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement. Intermediate - Once surface casing is set and cemented Intermediate hole is drilled either on air or SOBM and filled w/ KCl water once filled w/KCl water once drilled to TD. The well is conditioned with KCl circulation prior to running casing. Once casing is at setting depth, the well is circulated a minimum of one hole volume prior to pumping cement. Production - The hole is drilled with synthetic oil base mud and once at TD the hole is circulated at maximum allowable drilling pump rate for at least 6X bottoms up. Once on bottom with casing, circulate a minimum of one hole volume prior to pumping cement.

*Note: Attach additional sheets as needed.
<table>
<thead>
<tr>
<th>Fresh Water Protection String: Cement Additives</th>
<th>Cement Additives</th>
<th>Cement Additives</th>
<th>Cement Additives</th>
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<tbody>
<tr>
<td>Allied Material Name</td>
<td>CAS #</td>
<td>Additive (Material) Type</td>
<td>Description</td>
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<tr>
<td>CCAC Class A Common</td>
<td>65997-15-1</td>
<td>Grey Powder</td>
<td>White, flake</td>
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<td>CA-100</td>
<td>10043-52-4</td>
<td>White and colored flake</td>
<td>Non-Hazardous</td>
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<td>7447-40-7</td>
<td>Lost Circulation Aid</td>
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<td>77732-18-5</td>
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<td>7647-14-5</td>
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### Drilling Well Plan

**MND-1J-HS** (Marcellus HZ)
Macellus Shale Horizontal
Marshall County, WV

<table>
<thead>
<tr>
<th>Ground Elevation</th>
<th>MND-1J SHL (Lat/Long)</th>
<th>MND-1J LP (Lat/Long)</th>
<th>MND-1J BHL (Lat/Long)</th>
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</thead>
<tbody>
<tr>
<td>1152'</td>
<td>(494181.79N, 1642190.92E) (NAD27)</td>
<td>(495445.17N, 1644246.13E) (NAD27)</td>
<td>(501689.26N, 1639873.98E) (NAD27)</td>
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<tr>
<th>WELLBORE DIAGRAM</th>
<th>HOLE</th>
<th>CASING</th>
<th>GEOLOGY</th>
<th>TOP</th>
<th>BOTTOM</th>
<th>MUD</th>
<th>CEMENT</th>
<th>CENTRALIZERS</th>
<th>CONDITIONING</th>
<th>COMMENTS</th>
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<tbody>
<tr>
<td>26</td>
<td>20° 9/4&quot;</td>
<td>Conductor</td>
<td>40</td>
<td>40</td>
<td>Air</td>
<td>Type III surface to TD</td>
<td>N/A</td>
<td>Ensure the hole is clean at TD.</td>
<td>Conducter casing = 0.438&quot; wall thickness</td>
<td></td>
</tr>
<tr>
<td>17 1/2</td>
<td>13-3/8&quot; 54.5&quot;</td>
<td>J-55 BTC</td>
<td>Pittsburgh Coal</td>
<td>687</td>
<td>697</td>
<td>Air or Fresh Water Based Mud</td>
<td>15.6 ppg Class A + 2% CaCl, 0.25# Lost Circ 30% Excess Yield = 1.18 To Surface</td>
<td>Bow Spring on first 2 joints then every third joint to 100' from surface</td>
<td>Fill with &lt;3% KCl water once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement.</td>
<td>Surface casing = 0.380&quot; wall thickness Burst=2730 psi</td>
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<tr>
<td>12 3/8</td>
<td>9.5/8&quot; 38&quot;</td>
<td>HCK-55 BTC</td>
<td>Int. Casing</td>
<td>1097</td>
<td>1097</td>
<td>Air or SOBM</td>
<td>15.6 ppg Class A + 2% CaCl, 0.25# Lost Circ 30% Excess Yield = 1.18 To Surface</td>
<td>Bow spring centralizes every third joint to 100' feet from surface.</td>
<td>Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement.</td>
<td>Intermediate casing = 0.352&quot; wall thickness Burst=3520 psi</td>
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<tr>
<td>8.75&quot; Vertical</td>
<td>5-1/2&quot; 20&quot;</td>
<td>HCP-110 TXP BTC</td>
<td>8.75° - 8.5° Curve</td>
<td>3439</td>
<td>3485</td>
<td>Air or SOBM</td>
<td>14.5ppg 75/25 Class A/Poz +0-4.0% fluid Loss additive, +0.4% retarder, +0.5% dispersant, +/-0.2% antifoam, +/-2% extender 10% Excess Yield =1.32 TOC =&gt; 200' above 9.625' shoe</td>
<td>Rigid Bow Spring every third joint from KOP to TOC</td>
<td>Once at TD, circulate at max 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.</td>
<td>Production casing = 0.361&quot; wall thickness Burst=12640 psi Note:Actual centralizer schedules may be changed due to hole conditions</td>
</tr>
</tbody>
</table>

LP @ 6360' TVD / 7528' MD
8.75 / 8.5 Hole - Cemented Long String
5-1/2" 20" HCP-110 TXP BTC
+/17622' ft Lateral

TD @ +/-6360 TVD
+/-15150' MD
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name: Noble Energy Inc.  
Operator's Well No. MND 1 JHS

Watershed (HUC 10) Short Creek - Ohio River (Huc 10) Quadrangle Powhatan Point

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☑ No ☐

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste:
Will a synthetic liner be used in the pit? Yes ☐ No ☑

If so, what ml.?__________________________

Proposed Disposal Method For Treated Pit Wastes:

☐ Land Application
☐ Underground Injection (UIC Permit Number See attached sheet)
☐ Reuse (at API Number TBD - Next anticipated well)
☐ Off Site Disposal (Supply form WW-9 for disposal location)
☐ Other (Explain)__________________________

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air thru coal string, then SOBM

-If oil based, what type? Synthetic, petroleum, etc. Synthetic

Additives to be used in drilling medium?

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfills

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust)__________________________

-Landfill or offsite name/permit number? Please see attached

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature ____________________________

Company Official (Typed Name) Dee Swiger

Company Official Title Regulatory Analyst III

Received _________________________________

Office of Oil & Gas

Subscribed and sworn before me this 23rd day of July, 2015

Regina Logue _________________________________

Notary Public

My commission expires July 7, 2018
Form WW-9

Noble Energy Inc.

Proposed Revegetation Treatment: Acres Disturbed _9.0_ Prevegetation pH _6.0_

Lime _2 to 3_ Tons/acre or to correct to pH _6.0_

Fertilizer type _10-20-20_

Fertilizer amount _500_ lbs/acre

Mulch Hay or straw at _2_ Tons/acre

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<tr>
<th>Seed Mixtures</th>
<th>Temporary</th>
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<td>Seed Type</td>
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<td>Tall Fescue</td>
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<tr>
<td>Ladino Clover</td>
<td><em>5</em></td>
<td><em>5</em></td>
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</table>

**See site plans for full list**

Attach:
Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments:

Field Reviewed? ( ) Yes ( ) No
Cuttings Disposal/Site Water

Cuttings – Haul off Company:

Eap Industries, Inc. DOT # 0876278
1575 Smith Two State Rd. Atlasburg, PA 15004
1-888-294-5227

Waste Management
200 Rangos Lane
Washington, PA 15301
724-222-3272

Environmental Coordination Services & Recycling (ECS&R)
3237 US Highway 19
Cochranton, PA 16314
814-425-7773

Disposal Locations:

Apex Environnemental, LLC Permit # 06-08438
11 County Road 78
Amsterdam, OH 43903
740-543-4389

Westmoreland Waste, LLC Permit # 100277
111 Conner Lane
Belle Vernon, PA 15012
724-929-7694

Sycamore Landfill Inc. Permit # R30-079001 05-2010
4301 Sycamore Ridge Road
Hurricane, WV 25526
304-562-2611

Max Environnemental Technologies, Inc. Facility Permit # PAD004835146 / 301071
233 Max Lane
Yukon, PA 25968
724-722-3500

Max Environnemental Technologies, Inc. Facility Permit # PAD05087072 / 301359
200 Max Drive
Bulger, PA 15019
724-796-1571

Waste Management Kelly Run Permit # 100663
1901 Park Side Drive
Elizabeth, PA 15037
412-384-7569

Waste Management South Hills (Arnoni) Permit # 100592
3100 Hill Road
Library, PA 15129
724-348-7013
412-384-7569

Waste Management Arden Permit # 100172
200 Rangos Lane
Washington, PA 15301
724-222-3272

Waste Management Meadowfill Permit # 1032
1488 Dawson Drive
Bridgeport, WV 26330

Brooke County Landfill Permit # SWF-103-97 / WV 0109029
 Rd 2 Box 410
 Colliers, WV 26035
304-748-0014

Received
Office of Oil & Gas
AUG 03 2015

10/02/2015
Wetzel County Landfill Permit # SWF-1021-97 / WV 0109185
Rt 1 Box 156A
New Martinsville, WV 26035
304-455-3800

Energy Solutions, LLC Permit # UT 2300249
423 West 300 South
Suite 200
Salt Lake City, UT 84101

Energy Solutions Services, Inc. Permit # R-73006-L24
1560 Bear Creek Road
Oak Ridge, TN 37830

Northern A-1 Environnemental Services Permit ID MID020906814
3947 US 131 North, PO Box 1030
Kalkaska, MI 49646
231-258-9961

Water Haul off Companies:

Dynamic Structures, Clear Creek DOT # 720485
3790 State Route 7
New Waterford, OH 44445
330-892-0164

Nabors Completion & Production Services Co.
PO Box 975682
Dallas, TX 75397-5682

Select Energy Services, LLC
PO Box 203997
Dallas, TX 75320-3997

NuVerra Environmental Solutions
11942 Veterans Memorial Highway
Masontown, WV 26542

Mustang Oilfield Services LLC
PO Box 739
St. Clairsville, OH 43950

Wilson’s Outdoor Services, LLC
456 Cracraft Road
Washington, PA 15301

Disposal Locations:

Solidification
Waste Management, Arden Landfill Permit # 100172
200 Rangos Lane
Washington, PA 15301
724-225-1589

Solidification/Incineration
Soil Remediation, Inc. Permit # 02-20753
6065 Arrel-Smith Road
Lowelville, OH 44436
330-536-6825

Adams #1 (Buckeye Brine, LLC)
Permit # 34-031-2-7177
23986 Airport Road
Coshohcton, OH 43812
740-575-4484
512-478-6545

CMS of Delaware Inc. DBA CMS Oilfield Serv
301 Commerce Drive
Mooresville, NJ 08057

Force, Inc.
1380 Rte. 286 Hwy. E, Suite 303
Indiana, PA 15701

Solo Construction
P.O. Box 544
St. Mary’s, WV 26170

Equipment Transport
1 Tyler Court
Carlisle, PA 17015

Myers Well Service, Inc.
2001 Ballpark Court
Export, PA 15632

Burns Drilling & Excavating
618 Crabapple Road P.O. Box 41
Wind Ridge, PA 15380

Received
Office of Oil & Gas
Aug 12, 2015

Nichols 1-A (SWIW #34)
Permit # 3862
300 Cherrington Pkwy, Suite 200
Coraspolis, PA 15108
412-329-7275

Groselle (SWIW #34)
Permit # 4096
Rt. 88
Garrettsville, OH
713-275-4816

Kemble 1-D Well
Permit # 8780
7675 East Pike
Norwich, Oh 43767
614-648-8898
740-796-6495

10/02/2015
Adams #2 (Buckeye Brine, LLC)  
2205 Westover Road  
Austin Tx 78703  
Permit # 34-031-2-7178  
740-575-4484  
512-478-6545

Adams #3 (Buckeye Brine, LLC)  
Permit #34-031-2-7241-00-00  
2630 Exposition, Suite 117  
Austin, TX 78703  
512-478-6545

Mozena #1 Well (SWIW # 13)  
Permit # 34-157-2-5511-00-00  
5367 E. State Street  
Newcomerstown, OH 43832  
740-763-3966

Goff SWD #1 (SWIW # 27)  
Permit # 34-119-2-8776-000  
300 Cherrington Pkwy, Suite 200  
Coraopolis, PA 15108  
412-329-7275

SOS D#1 (SWIW #12)  
Permit # 34-059-2-4202-00-00  
Silcor Oilfield Services, Inc.  
2939 Hubbard Road  
Youngstown, OH 44505

Dudley #1 UIC (SWIW #1)  
Permit # 34-121-2-2459-00-00  
Select Energy Services, LLC  
7994 S. Pleasants Hwy  
St. Marys, WV 26170  
304-665-2652

OH UIC #1 Buckeye UIC Barnesville 1 & 2  
CNX Gas Company, LLC  
1000 Consol Energy Drive  
Permit # 34-013-2-0609-00-00  
Permit # 34-013-2-0614-00-00  
304-323-6568

US Steele 11385  
Permit # 47-001-10561  
200 Evergreen Drive  
Waynesburg, PA 15730  
304-323-6568

Chapin #7 UIC (SWIW #7)  
Permit # 34-083-2-4137-00-00  
Elkhead Gas & Oil Company  
12163 Marne Rd. NE  
Newark, OH 43055  
740-763-3966

10/02/2015
Site Safety Plan
Noble Energy, Inc.
MND 1 Well Pad
1100 Kansas Ridge Rd
Moundsville, WV
July 2015: Version 2

JHS
For Submission to
West Virginia Department of Environmental Protection,
Office of Oil and Gas

Noble Energy, Inc.
Appalachia Offices
1000 Noble Energy Drive
Canonsburg, PA 15317-9504

Received
Office of Oil & Gas
AUG 08 2015

10/02/2015
Well is located on topo map 9140 feet south of Latitude 39° 52' 30".

NOTE:
1. There are no waste wells or developed springs within 250' of proposed well.
2. There are no existing buildings within 650' of proposed well.
3. Proposed well is greater than 390' from personal stream, tributary, road, or rail.
4. There are no native prairie stream within 390' of proposed well.
5. Proposed well is greater than 390' from surface water or discharge to public water supply.
6. It is the purpose of operations of this plan to represent necessary portions of the venture or mineral parcels depicted herein. The location, boundaries, sizes, depths, and locations may be modified in accordance with state or federal law and index.

PVE Sheffer
Engineering Surveying Design
Waterfront Corporate Park III, Suite 101
2900 Glenn Highway
Portsmouth, PA 15692-5846
Ph: 724-444-1100

FILE #: MND 01 JHS
DRAWING #: MND 01 JHS
SCALE: 1"=200'
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT H 138. 638.58'

() DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 5TH STREET
CHARLESTON, WV 25304

Well Type: Oil Waste Disposal
Gas Liquid Injection
Storage Shallow

WATERSHED: SHORT CREEK OHIO RIVER
COUNTY/DISTRICT: MARSHALL/CLAY
SURFACE OWNER: MOUNTAIN ENERGY
OIL & GAS ROYALTY OWNER: CNX GAS COMPANY, LLC

MORRISON
CONSOLIDATION COAL COMPANY
ACREAGE: 128.99
ACREAGE: 128.99

DRILL: 1X CONVERT 1X DEEPER 1X DEGREED 1X FRACTURE OR STIMULATE 1X PLUG AND ABANDON 1X CLEANOUT & REPLY 1X OTHERWISE
TARGET FORMATION: MARCELLUS
WELL OPERATOR: NOBLE ENERGY, INC.
Address: 1000 NOBLE ENERGY DRIVE

CITY: CANONSBURG State: PA Zip Code: 15317

EM MORGANTOWN State: WV Zip Code: 26503

10/02/2015


SIGNED: 21462 STATE OF WEST VIRGINIA

DATE: JULY 29, 2015 - REV. JULY 30, 2015
OPERATOR'S WELL #: MND 01 JHS
API WELL #: STATE COUNTY PERMIT

IN 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.

10/02/2015

01845

EM MORGANTOWN State: WV Zip Code: 26503
INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

<table>
<thead>
<tr>
<th>Lease Name or Number</th>
<th>Grantor, Lessor, etc.</th>
<th>Grantee, Lessee, etc.</th>
<th>Royalty</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) 623173</td>
<td>Consolidation Coal Company, et al</td>
<td>CNX Gas Company, LLC</td>
<td>50% Fee Mineral</td>
<td>646/493</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Noble Energy Inc.</td>
<td>50% Fee Mineral</td>
<td>752/066</td>
</tr>
<tr>
<td>2) 623173</td>
<td>Consolidation Coal Company, et al</td>
<td>CNX Gas Company, LLC</td>
<td>50% Fee Mineral</td>
<td>646/493</td>
</tr>
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<td></td>
<td>Noble Energy Inc.</td>
<td>50% Fee Mineral</td>
<td>752/066</td>
</tr>
</tbody>
</table>

Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Noble Energy, Inc.
By: [Signature]
Iss: [Signature]

Received
Office of Oil & Gas
AUG 03 2015

Page 1 of 2

10/02/2015
<table>
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<tr>
<th>Lease Name or Number</th>
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<td>3. 623173</td>
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<td></td>
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<td>Noble Energy, Inc.</td>
<td>50% Fee Mineral</td>
<td>752/066</td>
</tr>
<tr>
<td>4.) No number assigned yet</td>
<td>Eugene Estep</td>
<td>Chevron U.S.A. Inc.</td>
<td>Not less than 1/8</td>
<td>861/513</td>
</tr>
<tr>
<td></td>
<td>Chevron U.S.A. Inc.</td>
<td>Noble Energy, Inc.</td>
<td>N/A</td>
<td>34/502</td>
</tr>
<tr>
<td>5.) Q090620000-000</td>
<td>Wendell B. Rine and Carolyn S. Rine</td>
<td>Noble Energy, Inc.</td>
<td>Not less than 1/8</td>
<td>859/489</td>
</tr>
<tr>
<td>6.) Q084767000-000</td>
<td>Mountaineer Natural Gas Company</td>
<td>Noble Energy, Inc.</td>
<td>Not less than 1/8</td>
<td>833/35</td>
</tr>
<tr>
<td>7.) Q082524000-000</td>
<td>Paul J. Maidens and Julie D. Maidens</td>
<td>Noble Energy, Inc.</td>
<td>Not less than 1/8</td>
<td>826/90</td>
</tr>
<tr>
<td>8.) Q082524000-000</td>
<td>Paul J. Maidens and Julie D. Maidens</td>
<td>Noble Energy, Inc.</td>
<td>Not less than 1/8</td>
<td>826/90</td>
</tr>
<tr>
<td>9.) Q082524000-000</td>
<td>Paul J. Maidens and Julie D. Maidens</td>
<td>Noble Energy, Inc.</td>
<td>Not less than 1/8</td>
<td>826/90</td>
</tr>
<tr>
<td>10.) Q080080000-000</td>
<td>Nyla J. Bell</td>
<td>Noble Energy, Inc.</td>
<td>Not less than 1/8</td>
<td>813/251</td>
</tr>
</tbody>
</table>

Received
Office of Oil & Gas
AUG 9 3 2015

10/02/2015
MINERAL INTEREST DEED

This MINERAL INTEREST DEED (this "Deed") is from CNX GAS COMPANY LLC, a Virginia limited liability company ("Grantor"), whose address is 1000 CONSOL Energy Drive, Canonsburg, PA 15317, to NOBLE ENERGY, INC., a Delaware corporation ("Grantee"), whose address is 100 Glenborough Drive, Suite 100, Houston, Texas 77067, and is effective as of 7:00 a.m. (Central Time) on July 1, 2011 (the "Effective Time").

RECITALS

WHEREAS, Grantor desires to grant and convey to Grantee, and Grantee desires to receive from Grantor, an undivided 50% of Grantor’s right, title and interest in the assets and properties described below in accordance with this Deed and the Acquisition Agreement (defined below).

NOW, THEREFORE, for and in consideration of the mutual promises contained herein and in the Acquisition Agreement, the benefits to be derived by each party hereunder and under the Acquisition Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor and Grantee agree as follows:

ARTICLE I
DEFINED TERMS

1.1 Definitions. Capitalized terms used herein and not otherwise defined in Section 34 or throughout the Deed shall have the meanings given such terms in the Asset Acquisition Agreement, dated as of August 17, 2011, as amended, by and between Grantor and Grantee (the "Acquisition Agreement").

ARTICLE II
GRANT OF CONVEYED INTERESTS

2.1 Deed. Subject to the terms and conditions of this Deed, Grantor does hereby GRANT, CONVEY and TRANSFER to Grantee, and Grantee agrees to acquire, the following interests and properties (less and except for the Excluded Assets, such interests and properties described in subsections (a) and (b) of this Section 2.1, collectively, the "Conveyed Interests"): [Continues...]}
(a) an undivided 50% of all of Grantor’s right, title and interest in and to the following assets and properties:

(i) the oil and gas and mineral fee interests more particularly described in Exhibit A, insofar and only insofar as such oil and gas and mineral fee interests cover depths within the Marcellus Formation (such 50% of Grantor’s interest in such oil and gas and mineral fee interests as so limited, collectively, the “Mineral Interests”);

(ii) all oil and gas wells drilled on the Mineral Interests or the Units insofar and only insofar as such wells are producing from, or have been drilled to produce from, those depths within the Marcellus Formation, including the oil and gas wells listed on Exhibit B (to the extent drilled on the Mineral Interests or Units and producing from or drilled to produce from such formation) (such 50% of Grantor’s interest in such wells as so limited, the “Marcellus Wells”), and all fresh water wells, injection wells, salt water disposal wells and other wells of every nature and kind located on the Mineral Interests or the Units, in each case, to the extent that they are primarily used in connection with the Marcellus Wells, the Mineral Interests or the Units (such 50% of Grantor’s interest in such wells as so limited, collectively with the Marcellus Wells, the “Wells”);

(iii) all interests in pools or units which include all or a part of any Mineral Interests insofar and only insofar as such pools or units cover depths within the Marcellus Formation and pertain to the Mineral Interests (such 50% of Grantor’s interest in such pools and units as so limited, the “Units”);

(iv) to the extent they may be assigned (after exercising commercially reasonable efforts to obtain any and all relevant consents), all permits, licenses, servitudes, easements, rights-of-way, surface use agreements, water access and water use agreements and other similar surface use or water rights, in each case, to the extent primarily used in connection with the ownership or operation of the Mineral Interests, Units and Wells, including those set forth in Exhibit C (such 30% of Grantor’s interest in the foregoing, collectively, the “Rights-Of-Way” and the Mineral Interests, Units, Wells and Rights-Of-Way being collectively referred to hereinafter as the “Properties”);

(v) all equipment, machinery, fixtures and other personal property, operational or nonoperational in each case, to the extent primarily used in connection with the Properties or the other Conveyed Interests, including well equipment, casing, tubing, pumps, motors, machinery, platforms, rods, tanks, boilers, fixtures, manifolds, structures, materials and other items primarily used or held for use in the operation of the Properties (such 50% of Grantor’s interest in such properties, the “Personal Property”); and

(vi) all Hydrocarbons produced from or allocated to the Mineral Interests, Marcellus Wells or Units on and after the Effective Time; and
(b) all of Grantor's right, title and interest in and to the following assets and properties to the extent, and only to the extent, that such assets and properties relate to the interests described in Section 2.1(a):

(i) to the extent assignable, all Applicable Contracts and all rights thereunder;

(ii) all Well Imbalances relating to the Conveyed Interests;

(iii) copies (in digital form, if available) of the following, to the extent (A) in Grantor's or its Affiliates' possession or (B) to which Grantor has the right but are in the possession of a Third Party: (1) land and title records (including abstracts of title, title opinions (including title opinions that cover both the Marcellus Formation and other formations) and title curative documents), (2) contract files, (3) correspondence, (4) maps, operations, environmental, production and accounting records, (5) facility and engineering/well files, (6) division order files (including division and interest statements), (7) engineering and/or production files, (8) environmental files, (9) permitting files and (10) geological data, but excluding any of the foregoing items that are primarily used in connection with the ownership or operation of the Excluded Assets, and

(iv) to the extent assignable without payment of fees or other penalties, unless Grantor agrees to and does pay such fees and penalties, the geophysical data and other seismic and related technical data and information listed on Schedule 2.1 to the Acquisition Agreement.

2.2 Easement. Subject to the terms and conditions of this Deed, Grantor does hereby assign, transfer and convey to Grantee a non-exclusive subsurface well bore easement through Grantor's Shallow Depths for the purposes of accessing, exploring, developing and producing Hydrocarbons from the Marcellus Formation to the extent relating to the Conveyed Interests provided that such easement shall not permit the production of Hydrocarbons from the Shallow Depths or perforations, open hole completions, fracture operations or other stimulation operations in the Shallow Depths (the "Subsurface Access Easement").

TO HAVE AND TO HOLD the Conveyed Interests and the Subsurface Access Easement unto Grantee, its successors and assigns, forever, subject, however, to all the terms and conditions of this Deed, including, without limitation, Article III.

2.3 Excluded Assets and Reservation. The Conveyed Interests and the Subsurface Access Easement shall not include, and Grantor hereby reserves and retains, the Excluded Assets. Additionally, the Conveyed Interests covered by this Deed shall not include any of the Leases any of the assets covered by the Assignment, to the extent said Leases and assets are assigned to Grantee by the Assignment. Grantor and Grantee acknowledge and agree that the
Assignment and this Deed (including all recorded counterparts thereof) are intended to COLLECTIVELY convey to Grantee the "Conveyed Interests" as described in the Acquisition Agreement. Grantor and Grantee acknowledge and agree that the Assignment and this Deed are not intended to effect multiple conveyances of the same properties or interests in such properties.

ARTICLE III
SPECIAL WARRANTY; DISCLAIMERS; CERTAIN DEFINITIONS

3.1  **Special Warranty.**  Grantor hereby binds itself, its successors and assigns subject, however, to the Permitted Encumbrances, to warrant and forever defend all and singular title to the Marcellus Wells and Mineral Interests and the Subsurface Access Easement from and after April 30, 2010 to the date hereof for claims arising by, through or under Grantor, but not otherwise.

3.2  **Subrogation.**  Grantor hereby assigns to Grantee all rights, claims and causes of action under title warranties given or made by Grantor’s predecessors in interest (other than any Affiliates of Grantor) with respect to the Conveyed Interests, and Grantee is specifically subrogated to all rights which Grantor may have against such predecessors in interest with respect to the Conveyed Interests, to the extent Grantor may legally transfer such rights and grant such subrogation.

3.3  **Disclaimers and Subrogation of Warranties and Representations.**

- **(a)** EXCEPT AS AND TO THE LIMITED EXTENT EXPRESSLY SET FORTH IN SECTION 3.1 OF THIS DEED AND IN ARTICLE VII OF THE ACQUISITION AGREEMENT, (I) GRANTOR MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, AND (II) GRANTOR EXPRESSLY DISCLAIMS ALL LIABILITY AND RESPONSIBILITY FOR ANY REPRESENTATION, WARRANTY, STATEMENT OR INFORMATION MADE OR COMMUNICATED (ORALLY OR IN WRITING) TO GRANTEE OR ANY OF ITS AFFILIATES, EMPLOYEES, AGENTS, CONSULTANTS OR REPRESENTATIVES (INCLUDING ANY OPINION, INFORMATION, PROJECTION OR ADVICE THAT MAY HAVE BEEN PROVIDED TO GRANTEE BY A MEMBER OF THE GRANTOR INDEMNIFIED PARTIES).

- **(b)** EXCEPT AS AND TO THE LIMITED EXTENT EXPRESSLY SET FORTH IN SECTION 3.1 OF THIS DEED AND ARTICLE VII OF THE ACQUISITION AGREEMENT, AND WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, GRANTOR EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY, EXPRESS, STATUTORY OR IMPLIED, BY ANY MEMBER OF THE GRANTOR INDEMNIFIED PARTIES, AS TO (I) TITLE TO ANY OF THE CONVEYED INTERESTS AND THE SUBSURFACE ACCESS EASEMENT, (II) THE CONTENTS, CHARACTER OR NATURE OF ANY REPORT OF ANY PETROLEUM ENGINEERING CONSULTANT, OR
ANY ENGINEERING, GEOLOGICAL OR SEISMIC DATA OR INTERPRETATION RELATING TO THE CONVEYED INTERESTS. (III) THE QUANTITY, QUALITY OR RECOVERABILITY OF HYDROCARBONS IN OR FROM THE CONVEYED INTERESTS, (IV) ANY ESTIMATES OF THE VALUE OF THE CONVEYED INTERESTS OR FUTURE REVENUES GENERATED BY THE CONVEYED INTERESTS, (V) THE PRODUCTION OF HYDROCARBONS FROM THE CONVEYED INTERESTS, (VI) THE MAINTENANCE, REPAIR, CONDITION, QUALITY, SUITABILITY, DESIGN OR MARKETABILITY OF THE CONVEYED INTERESTS, (VII) THE CONTENT, CHARACTER OR NATURE OF ANY INFORMATION MEMORANDUM, REPORTS, BROCHURES, CHARTS OR STATEMENTS PREPARED BY GRANTOR OR THIRD PARTIES WITH RESPECT TO THE CONVEYED INTERESTS, (VIII) ANY OTHER MATERIALS OR INFORMATION THAT MAY HAVE BEEN MADE AVAILABLE TO GRANTEE OR ITS AFFILIATES, OR ITS OR THEIR EMPLOYEES, AGENTS, CONSULTANTS, REPRESENTATIVES OR ADVISORS IN CONNECTION WITH THE TRANSACTIONS CONTEMPLATED BY THIS DEED OR ANY DISCUSSION OR PRESENTATION RELATING THERETO, AND (IX) ANY IMPLIED OR EXPRESS WARRANTY OF FREEDOM FROM PATENT OR TRADEMARK INFRINGEMENT. EXCEPT AS AND TO THE LIMITED EXTENT EXPRESSLY REPRESENTED OTHERWISE IN SECTION 3.1 OF THIS DEED OR ARTICLE VII OF THE ACQUISITION AGREEMENT, GRANTOR FURTHER DISCLAIMS ANY REPRESENTATION OR WARRANTY, EXPRESS, STATUTORY OR IMPLIED, OF MERCHANTABILITY, FREEDOM FROM LATENT VICES OR DEFECTS, FITNESS FOR A PARTICULAR PURPOSE OR CONFORMITY TO MODELS OR SAMPLES OF MATERIALS OF ANY CONVEYED INTERESTS AND THE SUBSURFACE ACCESS EASEMENT, IT BEING EXPRESSLY UNDERSTOOD AND AGREED BY GRANTOR AND GRANTEE THAT GRANTEE SHALL BE DEEMED TO BE OBTAINING THE CONVEYED INTERESTS AND THE SUBSURFACE ACCESS EASEMENT IN THEIR PRESENT STATUS, CONDITION AND STATE OF REPAIR, "AS IS" AND "WHERE IS" WITH ALL FAULTS OR DEFECTS (KNOWN OR UNKNOWN, LATENT, DISCOVERABLE OR UNDISCOVERABLE), AND THAT GRANTEE, SUBJECT TO ITS RIGHTS UNDER ARTICLE V OF THE ACQUISITION AGREEMENT, HAS MADE OR CAUSED TO BE MADE SUCH INSPECTIONS AS GRANTEE DEEMS APPROPRIATE.

(c) EXCEPT AS AND TO THE LIMITED EXTENT EXPRESSLY SET FORTH IN SECTION 7.19 OF THE ACQUISITION AGREEMENT AND WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, GRANTOR MAKES NO REPRESENTATION OR WARRANTY REGARDING ANY MATTER OR CIRCUMSTANCE RELATING TO ENVIRONMENTAL LAWS, THE RELEASE OF MATERIALS INTO THE ENVIRONMENT OR THE PROTECTION OF HUMAN HEALTH, SAFETY, NATURAL RESOURCES OR THE ENVIRONMENT, OR ANY OTHER ENVIRONMENTAL CONDITION OF THE CONVEYED INTERESTS, AND NOTHING IN THIS DEED OR OTHERWISE SHALL BE CONSTRUED AS SUCH A REPRESENTATION.
OR WARRANTY, AND SUBJECT TO GRANTEE’S RIGHTS UNDER SECTIONS 6.1 AND 7.19 OF THE ACQUISITION AGREEMENT, GRANTEE SHALL BE DEEMED TO BE TAKING THE CONVEYED INTERESTS AND THE SUBSURFACE ACCESS EASEMENT “AS IS” AND “WHERE IS” WITH ALL FAULTS FOR PURPOSES OF THEIR ENVIRONMENTAL CONDITION AND THAT GRANTEE, SUBJECT TO ITS RIGHTS UNDER ARTICLE VI OF THE ACQUISITION AGREEMENT, HAS MADE OR CAUSED TO BE MADE SUCH ENVIRONMENTAL INSPECTIONS AS GRANTEE DEEMS APPROPRIATE.

(d) GRANTOR AND GRANTEE AGREE THAT, TO THE EXTENT REQUIRED BY APPLICABLE LAW TO BE EFFECTIVE, THE DISCLAIMERS OF CERTAIN REPRESENTATIONS AND WARRANTIES CONTAINED IN THIS SECTION 3.3 ARE “CONSCIOUS” DISCLAIMERS FOR THE PURPOSE OF ANY APPLICABLE LAW.

3.4 Certain Definitions. The following terms, as used herein, have the meanings set forth below:

“Additional Interests” means those additional oil and gas leases and oil and gas and mineral fee interests acquired by Grantor and/or its Affiliates in the Development Area from and after April 29, 2011, other than those Mineral Interests or Leases (or interests therein) acquired by Grantor from its Affiliates.

“Affiliate” means, with respect to any Person, any other Person that directly, or indirectly through one or more intermediaries, Controls or is Controlled by, or is under common Control with, such Person.

“Antero OVERR” means those certain royalty and overriding royalty payments due from Antero Resources Appalachian Corporation to CNX Gas Company LLC, under those certain Partial Assignment of Oil and Gas Leases dated September 29, 2008, effective September 30, 2008 and other instruments delivered pursuant to that Amended and Restated Farmout Acquisition Agreement dated September 23, 2008 by and among Dominion Exploration & Production, Inc., Dominion Appalachian Development LLC and Dominion Transmission Inc., predecessors to CNX Gas Company LLC, collectively as farmor, and Antero Resources Appalachian Corporation, as farmee.

“Applicable Contracts” means all Contracts to which Grantor is a party by which any Conveyed Interest is bound and that will be binding on Grantee after the Closing, including farmor and farmout agreements; bottomhole agreements; crude oil, condensate and natural gas purchase and sale, gathering, transportation and marketing agreements; hydrocarbon storage agreements; acreage contribution agreements; operating agreements; balancing agreements; pooling declarations or agreements; unitization agreements; processing agreements; crossing
agreements; saltwater disposal agreements; facilities or equipment leases; letters of objection; production handling agreements and other similar contracts and agreements, held by Grantor and relating to the Conveyed Interests.

"Assignment" means that certain Assignment and Bill of Sale between Grantor and Grantee dated effective as of the Effective Time, including all recorded counterparts thereof.

"Closing" means the closing of the transfer by Grantor of the Conveyed Interests to Grantee pursuant to the Acquisition Agreement.

"Contract" means any written or oral contract, agreement, lease, mortgage, franchise, license agreement, purchase order, binding bid, commitment or any Applicable Contract that is an indenture, mortgage, loan, credit or sale-leaseback, guaranty of any obligation, bonds, letters of credit or similar financial contract or any other legally binding arrangement, including farmin and farmout agreements, participation, exploration and joint development agreements, crude oil, condensate and natural gas purchase and sale, gathering, transportation and marketing agreements, acreage contribution agreements, operating agreements, balancing agreements, unitization agreements, processing agreements, hydrocarbon balancing agreements, hydrocarbon storage agreements, facilities or equipment leases, platform use and platform sharing agreements, production handling agreements and other similar Contracts, but excluding, however, any Lease, deed, easement, right-of-way, permit or other instrument (other than acquisition or similar sales or purchase agreements) creating or evidencing an interest in the Conveyed Interests or any real or immovable property related to or used in connection with the operations of any Conveyed Interests.

"Control" (including the terms "Controlling," "Controlled by" and "under common Control with") means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting shares, by contract or otherwise.

"Development Agreement" means that certain Joint Development Agreement by and between Grantor and Grantee dated as of even date herewith, as provided for in the Acquisition Agreement.

"Development Area" has the meaning set forth in the Development Agreement.

"Encumbrance" means any lien, mortgage, security interest, defect, irregularity, pledge, charge or encumbrance.

"Environmental Laws" means all applicable federal, state and local Laws in effect as of the date of this Deed, including common law, relating to the protection of the public health, welfare and the environment, including those Laws relating to the storage, handling and use of
chemicals and other Hazardous Substances and those relating to the generation, processing, treatment, storage, transportation, disposal or other management thereof. The term "Environmental Laws" does not include good or desirable operating practices or standards that may be employed or adopted by other oil and gas well operators or recommended by a Governmental Authority.

"Excluded Assets" has the meaning set forth on Exhibit D.

"Governmental Authority" means any federal, state, local, municipal, tribal or other government; any governmental, regulatory or administrative agency, commission, body or other authority exercising or entitled to exercise any administrative, executive, judicial, legislative, belief, regulatory or taxing authority or power; and any court or governmental tribunal, including any tribal authority having or asserting jurisdiction.

"Hazardous Substances" means any pollutants, contaminants, toxic or hazardous or extremely hazardous substances, materials, wastes, constituents, compounds or chemicals that are regulated by, or may form the basis of liability under, any Environmental Laws, including naturally occurring radioactive materials and other substances referenced in Section 6.2 of the Acquisition Agreement.

"Hedge Contract" means any Contract to which Grantor or any of its Affiliates is a party with respect to any swap, forward, future or derivative transaction or option or similar agreement, whether exchange traded, "over-the-counter" or otherwise, involving, or settled by reference to, one or more rates, currencies, commodities, equity or debt instruments or securities, or economic, financial or pricing indices or measures of economic, financial or pricing risk or value or any similar transaction or any combination of these transactions.

"Hydrocarbons" means oil and gas and other hydrocarbons (including condensate) produced or processed in association therewith (whether or not such item is in liquid or gaseous form), or any combination thereof, and any minerals produced in association therewith.

"Imbalances" means all Well Imbalances and Pipeline Imbalances.

"Interim Period" means that period of time commencing with the Effective Time and ending immediately prior to Closing.

"Law" means any applicable statute, law, rule, regulation, ordinance, order, code, ruling, writ, injunction, decree or other official act of or by any Governmental Authority.

"Lease" means those certain oil, gas and/or mineral leases assigned by Grantor to Grantee pursuant to the Assignment.
"Marcellus Formation" means, (a) in central Pennsylvania, specifically from the stratigraphic equivalent of the top of the Burkett in the DeArmitt #1 (API 37-129-27246) and 7600'MD through to the stratigraphic equivalent of the top of the Onondaga at 7530'MD; (b) in southwest Pennsylvania, specifically from the stratigraphic equivalent of the top of the Burkett in the GH-1OC-CV (API 37-059-22397) at 7600'MD through to the stratigraphic equivalent of the top of the Onondaga at 7900'MD; and (c) in West Virginia, specifically from the stratigraphic equivalent of the top of the Burkett in the DEPI #14815 (API 47-001-02850) at 7350'MD through to the stratigraphic equivalent of the top of the Onondaga at 7710'MD, each of which is also shown in the logs attached to the Acquisition Agreement as Exhibit A-1.

"Oil and Gas Assets" mean the Conveyed Interests and, to the extent pertaining to the Marcellus Formation and operations relating thereto, the interests which are retained by Grantor in the properties and assets underlying the Conveyed Interests.

"Overhead Costs" means, with respect to those Conveyed Interests that are operated by Grantor and are burdened by an existing joint operating agreement covering such Conveyed Interests, the amount representing the overhead or general and administrative fee that is charged to other working interest owners with interests in the related Conveyed Interests as set forth in the lease operating expenses statement, which amount is attributable to the Conveyed Interests during the Interim Period.

"Person" means any individual, corporation, company, partnership, limited partnership, limited liability company, trust, estate, Governmental Authority or any other entity.

"Pipeline Imbalance" means any marketing imbalance between the quantity of Hydrocarbons attributable to the Oil and Gas Assets required to be delivered by Grantor under any Contract relating to the purchase and sale, gathering, transportation, storage, processing (including any production handling and processing at a separation facility) or marketing of Hydrocarbons and the quantity of Hydrocarbons attributable to the Oil and Gas Assets actually delivered by Grantor pursuant to the relevant Contract, together with any appurtenant rights and obligations concerning production balancing at the delivery point into the relevant sale, gathering, transportation, storage or processing facility.

"Retained Interest" means all of Grantor's rights in and to the oil and gas and mineral fee interests described in Exhibit A, insofar as such oil and gas and mineral fee interests cover depths and formations outside of the Marcellus Formation, including the non-exclusive right to use the surface and install pipelines and gathering systems in connection with the ownership or operation of such interests with respect to such depths and formations, and all wells to the extent associated therewith.

"SCADA Equipment" means all SCADA and similar control equipment and network communication towers.
"Shallow Depths" means all of Grantor's rights in and to oil and gas and mineral fee interests described in Exhibit A, insofar as and only insofar as such oil and gas and mineral fee interests cover depths and formations above the top of the Marcellus Formation.

"Third Party" means any Person other than Grantor and Grantee or an Affiliate of Grantor or Grantee.

"Well Imbalance" means any imbalance at the wellhead between the amount of Hydrocarbons produced from a Marcellus Well and allocable to the interests of Grantor therein and the shares of production from the relevant Marcellus Well to which Grantor is entitled, together with any appurtenant rights and obligations concerning future in kind and/or cash balancing at the wellhead.

ARTICLE IV
ASSUMED OBLIGATIONS

Without limiting Grantee's rights to indemnity under Article XIII of the Acquisition Agreement, any Title Indemnity Agreement, any Environmental Indemnity Agreement or under the special warranty of title in Section 3.1, and subject to the other limitations set forth in the Acquisition Agreement, effective as of the date of this Deed, Grantee hereby assumes and agrees to fulfill, perform, pay and discharge (or cause to be fulfilled, performed, paid or discharged) all of the Assumed Obligations.

ARTICLE V
MISCELLANEOUS

5.1 Separate Deeds. Where separate deeds and assignments of the Conveyed Interests and the Subsurface Access Easement have been or will be executed for filing in other recording jurisdictions or counties for filing with, and approval by, applicable Governmental Authorities, any such separate deeds and assignments (a) shall evidence this Deed and the grant of the applicable Conveyed Interests and the Subsurface Access Easement herein made and shall not constitute any additional grant of any of the Conveyed Interests, the Subsurface Access Easement or interests in the properties covered hereby or thereby; (b) are not intended to modify, and shall not modify, any of the terms, covenants and conditions or limitations on warranties set forth in this Deed or the Acquisition Agreement and are not intended to create, and shall not create, any representations, warranties or additional covenants of or by Grantor to Grantee; and (c) shall be deemed to contain all of the terms and provisions of this Deed, as fully and to all intents and purposes as though the same were set forth at length in such separate deeds.

5.2 Deed Subject to Acquisition Agreement. This Deed is expressly subject to the terms and conditions of the Acquisition Agreement, including with respect to the interests conveyed hereby. If there is a conflict between the terms of this Deed and the Acquisition
Agreement, the terms of the Acquisition Agreement shall control. This Deed is not intended by
Grantor or Grantee to be a quitclaim.

5.3 Governing Law; Jurisdiction; Venue; Jury Waiver. EXCEPT TO THE
EXTENT THE LAWS OF ANOTHER JURISDICTION WILL, UNDER CONFLICT OF
LAWS PRINCIPLES, GOVERN TRANSFERS OF THE CONVEYED INTERESTS OR THE
SUBSURFACE ACCESS EASEMENT LOCATED IN SUCH OTHER JURISDICTION, THIS
DEED AND THE LEGAL RELATIONS AMONG GRantor AND Grantee SHALL BE
GOVERNED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE
OF TEXAS. EACH OF GRantor AND Grantee CONSENT TO THE EXERCISE OF
JURISDICTION IN PERSONAM BY THE UNITED STATES FEDERAL DISTRICT
COURTS LOCATED IN THE STATE OF PENNSYLVANIA FOR ANY ACTION ARISING
OUT OF THIS DEED OR ANY TRANSACTION CONTEMPLATED HEREBY. ALL
ACTIONS OR PROCEEDINGS WITH RESPECT TO, ARISING DIRECTLY OR
INDIRECTLY IN CONNECTION WITH, OUT OF, RELATED TO, OR FROM THIS DEED
OR ANY TRANSACTION CONTEMPLATED HEREBY SHALL BE EXCLUSIVELY
LITIGATED IN THE UNITED STATES FEDERAL DISTRICT COURTS HAVING SITES IN
PITTSBURGH, PENNSYLVANIA (AND ALL APPELLATE COURTS HAVING
JURISDICTION THEREOVER). EACH OF GRantor AND Grantee WAIVES, TO THE
FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE
TO A TRIAL BY JURY IN RESPECT OF ANY ACTION, SUIT OR PROCEEDING ARISING
OUT OF OR RELATING TO THIS DEED OR ANY TRANSACTION CONTEMPLATED
HEREBY.

5.4 Successors and Assigns. This Deed shall bind and inure to the benefit of the
parties hereto and their respective successors and assigns.

5.5 Counterparts. This Deed may be executed in any number of counterparts, and
each such counterpart hereof shall be deemed to be an original instrument, but all of such
counterparts shall constitute for all purposes one agreement. To facilitate recordation, there are
omitted from the Exhibits to this Deed in certain counterparts descriptions of the Conveyed
Interests and/or the Subsurface Access Easement located in recording jurisdictions other than the
jurisdiction in which the counterpart is to be filed or recorded.

5.6 DECLARATION OF CONSIDERATION OR VALUE. Grantor hereby declares
that the total consideration paid for that portion of the Mineral Interests hereby conveyed that is
(a) real property and (b) subject to the West Virginia excise tax on the privilege of transferring
real property is $32,746,391.01.

5.7 CERTIFICATION OF EXEMPTION FROM WITHHOLDING. The
undersigned Grantor hereby certifies, under penalty of perjury, that it is a Virginia limited
liability company authorized to do business in the State of West Virginia, and is therefore
exempt from state income tax withholding requirements imposed by West Virginia Code Chapter 11, Article 21, Section 71b.
IN WITNESS WHEREOF, this Deed has been executed by the parties hereto as of September 28, 2011, but is effective for all purposes as of the Effective Time.

GRANTOR:

CNX GAS COMPANY LLC

By: [Signature]

Stephen W. Johnson
Vice President and Secretary

GRANTEE:

NOBLE ENERGY, INC.

By: [Signature]

Shawn E. Conner
Vice President
ACKNOWLEDGMENTS

STATE OF TEXAS,
COUNTY OF HARRIS, TO-WIT:

I, the undersigned, a notary public of the said county, do hereby certify that on this 28 day of September 2011, before me personally appeared Stephen W. Johnson, Vice President and Secretary, who acknowledged himself to be the officer of CNX GAS COMPANY LLC, and that he as such officer, being so authorized to do so, executed the foregoing instrument for the purposes therein contained, by signing the name of the company by himself as said officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My commission expires: 4-12-2012
(Notarial Seal)

STATE OF TEXAS,
COUNTY OF HARRIS, TO-WIT:

I, the undersigned, a notary public of the said county, do hereby certify that on this 29 day of September 2011, before me personally appeared Shawn E. Conner, Vice President, who acknowledged himself to be the officer of NOBLE ENERGY, INC., and that he as such officer, being so authorized to do so, executed the foregoing instrument for the purposes therein contained, by signing the name of the company by himself as said officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My commission expires: 5-1-13
(Notarial Seal)

This document was prepared by:
C. Randall King, Esq., Porter & Hedges LLP, 1000 Main Street, 36th Floor, Houston, Texas 77002

ACKNOWLEDGMENTS

RECEIVED
Office of Oil and Gas

SEP 21 2015
WV Department of
Environmental Protection

10/02/2015
## EXHIBIT A
**MINERAL INTERESTS**
Marshall County, WV

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Office of Oil and Gas  
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WV Department of Environmental Protection
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EXHIBIT B
MARCELLUS WELLS

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EXHIBIT B-1

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SEP 21 2015

WV Department of Environmental Protection
10/02/2015
EXHIBIT C
RIGHTS OF WAY

None
EXHIBIT D

EXCLUDED ASSETS

For purposes of this Deed, "Excluded Assets" means:

(a) all of Grantor's corporate minute books and corporate financial records that relate to Grantor's business generally (including the ownership and operation of the Conveyed Interests);

(b) all trade credits, all accounts, receivables and all other proceeds, income or revenues attributable to the Conveyed Interests with respect to any period of time prior to the Effective Time;

(c) all claims and causes of action of Grantor arising under or with respect to any Contracts that are attributable to periods of time prior to the Effective Time (including claims for adjustments or refunds);

(d) subject to Section 5.4 of the Acquisition Agreement, all rights and interests of Grantor (i) under any policy or agreement of insurance or indemnity, (ii) under any bond or (iii) to any insurance or condemnation proceeds or awards arising, in each case, from acts, omissions or events, or damage to or destruction of property;

(e) all Hydrocarbons produced and sold from the Properties with respect to all periods prior to the Effective Time, other than those Hydrocarbons attributable to the Conveyed Interests and in storage or existing in stock tanks, pipelines or plants (including inventory) as of the Effective Time;

(f) all claims of Grantor for refunds of or loss carry forwards with respect to (i) Asset Taxes attributable to any period, or portion thereof, prior to the Effective Time, (ii) income or franchise Taxes or (iii) any Taxes attributable to the Excluded Assets;

(g) all offices (including any owned or leased real or immovable property relating thereto) and personal computers and associated peripherals and all radio and telephone equipment and licenses relating thereto;

(h) all of Grantor's proprietary computer software, patents, trade secrets, copyrights, names, trademarks, logos and other intellectual property;

(i) all servitudes, easements, rights-of-way, surface fee interests, surface leases and other surface use agreements not primarily used or held for use in connection with the ownership or operation of the Properties or the Personal Property.
(j) all documents and instruments of Grantor that may be protected by an attorney-client privilege;

(k) all data and Contracts that cannot be disclosed to Grantee as a result of confidentiality arrangements with Third Parties;

(l) all audit rights arising under any of the Applicable Contracts or otherwise with respect to any period prior to the Effective Time or to any of the Excluded Assets, except for any imbalances assumed by Grantee;

(m) all geophysical and other seismic and related technical data and information relating to the Properties or other Conveyed Interests to the extent that such geophysical and other seismic and related technical data and information is not transferable without payment of a fee or other penalty (unless Grantee agrees to, and does, pay such fees and penalties) or not otherwise set forth in Schedule 2.1 to the Acquisition Agreement;

(n) documents prepared or received by Grantor or its Affiliates with respect to (i) lists of prospective purchasers for such transactions compiled by Grantor or its Affiliates, (ii) bids submitted by other prospective purchasers of the Conveyed Interests or any other interest in the Properties, (iii) analyses by Grantor or its Affiliates of any bids submitted by any prospective purchaser, (iv) correspondence between or among Grantor or its Affiliates or their respective representatives and any prospective purchaser other than Grantee and (v) correspondence between Grantor or its Affiliates or any of their respective representatives with respect to any of the bids, the prospective purchasers, or the transactions contemplated in this Agreement;

(o) all trucks, cars and drilling/workover rigs utilized by Grantor or its Affiliates in connection with the ownership or operation of the Conveyed Interests;

(p) all Hedge Contracts;

(q) all proceeds and amounts held in suspense as of Closing that are attributable to the Hydrocarbons produced from the Properties;

(r) Overhead Costs payable to Grantor or any Affiliate of Grantor as an Operator of the Conveyed Interests attributable to the period between the Effective Time and the Closing Date;

(s) files and records attributable to the Conveyed Interests that are maintained by Grantor that are not primarily used or held for use in connection with the operatorship or ownership of the Conveyed Interests;

(t) any Conveyed Interests described in Section 2.1(b) that are not assignable;

(u) any Retained Interest.
(v) all Existing Gathering Assets;
(w) the Antero ORRI;
(x) all rights to coal and substances mined in connection therewith;
(y) any Additional interests acquired by Grantor during the Interim Period in the Development Area with respect to which Grantee elects not to acquire its participating share pursuant to the terms of the Development Agreement;
(z) all water rights;
(aa) the Downstream Contracts, the NJR Contracts and the Peoples Contract;
(bb) all Contracts which are held or to be held by Grantor in its capacity as operator of the Development Area set forth on Exhibit A-2 to the Development Agreement, including drilling Contracts and services Contracts;
(cc) all Pipeline Imbalances; and
(dd) all SCADA Equipment and Federal Communication Commission licenses.
DEED

Marshall County, West Virginia

THIS DEED is made and entered into as of the 12th day of July, 2005, by and between CNX LAND RESOURCES INC, a Delaware corporation, CONSOLIDATION COAL COMPANY, a Delaware corporation, CONSOL PENNSYLVANIA COAL COMPANY, a Delaware corporation, CONRHEIN COAL COMPANY, a Pennsylvania partnership, McELROY COAL COMPANY, a Delaware corporation, and RESERVE COAL PROPERTIES COMPANY, a Delaware corporation, all of whom are herein referred to collectively as "Grantees," and CNX GAS COMPANY LLC, a Virginia limited liability company, herein referred to as "Grantor." 

WITNESSETH: That, for good and valuable consideration, and for the purpose of vesting in one entity (i) title to all of the reserves of, (ii) ownership of all of the mineral rights in and to, and (iii) control of all of the operating assets and contractual rights related to, Coalbed Methane and Oil and Natural Gas (as such terms are herein defined) vested in or controlled by any of the Grantors in Marshall County, West Virginia, Grantors hereby grant, convey, assign and transfer to Grantee, with covenants of special warranty, subject to the terms and provisions of that certain Master Cooperation and Safety Agreement dated the 1st day of August, 2005 (herein, the "Master Agreement"), all of their respective rights, titles, interests, claims and estates in and to the following assets (herein, the "Transferred Assets").

(A) Coalbed Methane. All of Grantors' right, title, interest, estate and claim in and to Coalbed Methane recoverable from any tract of land, coal seam or vein of coal or other real estate owned or leased by any of the Grantors situate in whole or in part in Marshall County, West Virginia;

(B) Oil and Natural Gas. All of the Oil and Natural Gas owned or leased by any of the Grantors within and underlying any tract or parcel of land situate in whole or in part in the Marshall County, West Virginia.

JW PETTIT
MARSHALL COUNTY (11:4119-41)
INSTRUMENT NO 111214
RECEIVED DATE 7/15/2005
DEPOSIT FEE $25
RECEIVED FEE 7/15/2005
RECEIVED FEE 7/15/2005
TRANSFERRER'S FEE $8.00
TRANSFERRER'S FEE $8.00
TRANSFERRER'S FEE $8.00

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SEP 21 2015

WV Department of Environmental Protection

10/02/2015
(C) Leases & Operating Agreements. All of Grantors' right, title, interest and estate in and under any and all leases, licenses, operating agreements and other contracts and agreements whereby the right or privilege of exploring and drilling for, operating, producing, marketing and/or selling the Coalbed Methane and the Oil and Natural Gas hereby conveyed and assigned to Grantee has been leased, granted, licensed or assigned to one or more third parties;

(D) Wells & Equipment. Any and all wells, well equipment, machinery, compressors, pipelines, processing stations and other equipment, machinery or facilities owned or leased by any of the Grantors which are used or useful in connection with the drilling, production, transportation, compression, processing and/or marketing the Coalbed Methane and the Oil and Natural Gas hereby conveyed to Grantee;

(E) Easements. Any and all drilling, operating, producing, gathering, transporting, and other appurtenant surface and/or subsurface easements, rights and privileges vested in any of the Grantors with respect to the Coalbed Methane and the Oil and Natural Gas hereby conveyed to Grantee;

(F) Contracts. Any and all rights of any of the Grantors existing under any contracts, agreements or other undertakings for the processing, transporting, marketing and sale of the Coalbed Methane and the Oil and Natural Gas hereby conveyed to Grantee.

The Transferor Assets are more particularly identified and described on Exhibit A attached hereto; provided, however, it is the intent of the Grantors to transfer and convey to Grantee all assets located in Marshall County, West Virginia which are described in the granting clauses above, whether or not such assets are listed on Exhibit A; and, provided, further, that, to the extent that any power lines, water lines, communication facilities, other facilities, contract rights or appurtenances hereinabove described relate to shared facilities between coal operations and gas operations, this Deed shall operate to assign only such rights as are related solely to gas operations and activities; and, provided, further, that, notwithstanding anything herein to the contrary, this Deed shall not operate to divest any of the Grantors of, or to confer on Grantee, any coal mining rights or privileges or any subsistence rights with respect to any real estate embraced within or described by the granting clauses of this Deed.

2
Covenant of Further Assurances

Grantees covenant with Grantee that the Grantors, and each of them, will provide such further assurances and execute such additional instruments as may be necessary or reasonably appropriate to evidence Grantor’s title to the Transferred Assets.

Definitions

As used in this Deed, the term “Coalbed Methane” means any gas, hydrocarbon, or gaseous substance which can be produced from a coal seam, the rock or other strata in communication with a coal seam, a mined-out area or a gob well, but including within such term only such constituent minerals, gases and chemicals which are commonly recognized as of the date of this Deed as being marketable as “coalbed methane.”

As used in this Deed, the term “Oil” means any and all natural crude oil or petroleum and other hydrocarbons, regardless of gravity, which are produced in liquid form by ordinary production methods, and the term “Natural Gas” means any and all gas, other fluid hydrocarbons which are not Oil and other gaseous substances, other than Coalbed Methane, recoverable or producible from any subterranean formation, but including within such terms only such constituent minerals, fluid or gaseous hydrocarbons and chemicals which are commonly recognized as of the date of this Deed as being marketable as “oil” or as “natural gas.”

Redemption

Grantees hereby except from this conveyance, and reserve unto themselves, their successors and assigns, all tracts or parcels of land, surface tracts, coal tracts, mineral tracts and other real estate, or interests in real estate, now or heretofore owned, leased or otherwise claimed by any of them in Marshall County West Virginia, except for the Coalbed Methane, the Oil and Natural Gas and the other Transferred Assets hereby conveyed, transferred and assigned to Grantee. Notwithstanding the conveyance and transfer by this Deed of the Grantors’ rights, titles, interests and claims in and to Coalbed Methane, and without limiting the rights and obligations set forth in the Master Agreement (which rights and obligations are incorporated herein in their entirety), Grantors expressly reserve to themselves, their successors and assigns, any and all coal mining rights and privileges and any and all subsidence rights vested in them, expressly or by implication, with respect to any real estate embraced within or described by the
granting clauses of this Deed, including, without limitation, the right and privilege to ventilate their mines and coal seams by discharging therefrom any coalbed gas, methane or other gaseous substances which may be found therein or which may migrate thereto without liability or obligation to account to Grantee, except as may be provided to the contrary in the Master Agreement.

Incorporation of Master Agreement Provisions

Grantors and Grantee hereby incorporate by reference all of the terms and provisions of the Master Agreement which relate to the exercise of the rights hereby reserved by Grantors and the exercise of the rights hereby granted to Grantee, including, without limitation, the provision that Grantors’ coal operations shall at all times prevail over Grantee’s Coalbed Methane or Oil and Natural Gas operations. The terms and provisions of the Master Agreement shall be deemed to be covenants which run with the land, which shall survive the termination of the Master Agreement.

Third Party Consents

Notwithstanding anything to the contrary provided in this Deed, to the extent that the conveyance, assignment or transfer of any portion of the Transferred Assets is prohibited by the terms of a deed, deed of trust, lease, contract, agreement or other instrument, or would result in a breach or default by Grantors under any such instrument, or the termination of Grantors’ rights in or title to any portion of the Transferred Assets due to the conveyance, assignment or transfer of such Transferred Asset(s) without the consent of a former grantor, deed of trust beneficiary, lessee or other third party, then, in such event, the Transferred Assets shall not include, and shall exclude, such portion of the Transferred Assets as may be affected by such prohibition or requirement for third party consent unless and until such prohibition has been waived or all requisite third party consents have been obtained.

Grantee’s Covenants

The Grantee hereby accepts the conveyance, assignment and transfer of the Transferred Assets upon the terms and conditions herein provided, including, without limitation, the terms and conditions of the Master Agreement which are incorporated herein by reference. The Grantee covenants with the Grantors, their successors and assigns, that, in the exercise of
the rights acquired by Grantee under this Deed, the Grantee, and its successors and assigns, will
be bound by all of the foregoing terms and conditions.

Declaration of Consideration or Value

The undersigned Grantors hereby declare that the true and actual value of the
Coalbed Methane and the Oil and Natural Gas transferred by this Deed is estimated to be
$ 568,711.00

WITNESS the following execution:

ATTEST:

By:  
Name: Paige M. Greene
Its: Assistant Secretary

ATTEST:

By:  
Name: William D. Stahagen
Its: President

ATTEST:

By:  
Name: Paige M. Greene
Its: Assistant Secretary

ATTEST:

By:  
Name: William D. Stahagen
Its: Vice President

ATTEST:

By:  
Name: Paige M. Greene
Its: Assistant Secretary

ATTEST:

By:  
Name: William D. Stahagen
Its: Manager
ATTEST:
By: [Signature]
Name: Paige M. Greene
Title: Assistant Secretary

McELROY COAL COMPANY,
a Delaware corporation
By: [Signature]
Name: William D. Stanhagen
Title: Vice President

RESERVE COAL PROPERTIES COMPANY, a Delaware corporation
By: [Signature]
Name: William D. Stanhagen
Title: President

CNX GAS COMPANY LLC,
a Virginia limited liability company
By: [Signature]
Name: William D. Stanhagen
Title: Vice President

COMMONWEALTH OF PENNSYLVANIA,
COUNTY OF ALLEGHENY, TO-WIT:

1, the undersigned money public, do certify that WILLIAM B. STANHAGEN,
the President of CNX Land Resources Inc., who signed the within instrument, bearing date
of the 21st day of July, 2005, has this day in my said county, before me,
acknowledged the same to be the act and deed of said corporation.

Given under my hand this 21st day of July, 2005.
My commission expires:

(NOTARIAL SEAL)

COMMONWEALTH OF PENNSYLVANIA
Notary Seal
[Notary's Seal]
[Notary's Signature]
[Notary's Name]
[Notary's Title]
[Notary's Date]

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Office of Oil and Gas
SEP 21 2015
WV Department of Environmental Protection
10/02/2015
COMMONWEALTH OF PENNSYLVANIA,
COUNTY OF ALLEGHENY, TO-WIT:

I, the undersigned notary public, do certify that WILLIAM D. STANHAGEN,
the Vice President of Consolidation Coal Company, who signed the writing hereto annexed,
bearing date of the 31st day of JULY, 2005, has this day in my said county, before me,
acknowledged the same to be the act and deed of said corporation.

Given under my hand this 31st day of JULY, 2005.
My commission expires: ____________

(Notarial Seal)

COMMONWEALTH OF PENNSYLVANIA,
COUNTY OF ALLEGHENY, TO-WIT:

I, the undersigned notary public, do certify that WILLIAM D. STANHAGEN,
the Vice President of Consol Pennsylvania Coal Company, who signed the writing hereto
 annexed, bearing date of the 31st day of JULY, 2005, has this day in my said county,
before me, acknowledged the same to be the act and deed of said corporation.

Given under my hand this 31st day of JULY, 2005.
My commission expires: ____________

(Notarial Seal)
COMMONWEALTH OF PENNSYLVANIA.

COUNTY OF ALLEGHENY, TO-WIT:

I, the undersigned notary public, do certify that WILLIAM D. STANHAGEN, the Manager of Corrinhein Coal Company, who signed the writing hereof annexed, bearing date of the 1st day of JULY, 2005, has this day in my said county, before me, acknowledged the same to be the act and deed of said partnership.

Given under my hand this 21st day of JULY, 2005.

My commission expires:

(Notarial Seal)

COMMUNEALITY OF PENNSYLVANIA,

COUNTY OF ALLEGHENY, TO-WIT:

I, the undersigned notary public, do certify that WILLIAM D. STANHAGEN, the Vice President of McClain Coal Company, who signed the writing hereof annexed, bearing date of the 1st day of JULY, 2005, has this day in my said county, before me, acknowledged the same to be the act and deed of said corporation.

Given under my hand this 21st day of JULY, 2005.

My commission expires:

(Notarial Seal)
COMMONWEALTH OF PENNSYLVANIA,
COUNTY OF ALLEGHENY, TO-WIT:

1. The undersigned notary public, do certify that WILLIAM D. STANHAGEN, the President of Reserve Coal Properties Company, who signed the writing hereinafter, bearing date of the 11 day of JULY, 2005, has this day in my said county, before me, acknowledged the same to be the act and deed of said corporation.

Given under my hand this 11 day of JULY, 2005.
My commission expires: __________

COMMONWEALTH OF PENNSYLVANIA,
COUNTY OF ALLEGHENY, TO-WIT:

1. The undersigned notary public, do certify that WILLIAM D. STANHAGEN, the Vice President CNX Gas Company LLC, who signed the writing hereinafter, bearing date of the 11 day of JULY, 2005, has this day in my said county, before me, acknowledged the same to be the act and deed of said limited liability company.

Given under my hand this 11 day of JULY, 2005.
My commission expires: __________

James A. Russell, Esquire
Steptoe & Johnson PLLC
United Center, Suite 400
1085 Van Voorhis Road
Morgantown, WV 26507-1616
STATE OF WEST VIRGINIA
COUNTY OF MARSHALL

ASSIGNMENT OF OIL AND GAS LEASES

THIS ASSIGNMENT OF OIL AND GAS LEASES (the “Assignment”) is made and entered into this 2nd day of July, 2015 (the “Effective Date”), among Chevron U.S.A. Inc., a Pennsylvania corporation (hereinafter “Assignor”) and Noble Energy, Inc., a Delaware corporation, and CNX Gas Company, LLC a Virginia limited liability company (collectively hereinafter “Assignees”).

WITNESSETH:

WHEREAS, Assignor is the owner of all of the right, title, and interest in and to those certain Oil and Gas Leases situated in Marshall County, West Virginia, which are described in Exhibits “A” and “A-1”, attached hereto and made a part hereof (hereinafter the “Leases”); and

WHEREAS, Assignor desires to assign, set over, and transfer to Assignees all of Assignor’s right, title, and interest in and to the Leases as described below.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and subject to the limited warranties, restrictions and conditions hereinafter mentioned, the parties hereto, intending to be legally bound, do covenant and agree as follows:

1. Assignment. Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over and transfer, as of the Effective Date, to Assignees, their respective successors and assigns, forever, all of Assignor’s right, title and interest in and to the Leases, and the lands covered thereby, together with all rights incident thereto and appurtenances thereof.

TO HAVE AND TO HOLD such right, title and interest in and to the Leases unto Assignees or their designees, and their respective successors and assigns, forever, in accordance with the provisions of this Assignment.

2. Representations and Warranties. Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered its interest in the Leases since the time that Assignor obtained its interests in the Leases. Assignor does covenant, promise and agree, to and with the Assignees, their respective successors and assigns, to forever specially warrant and defend the title to the Leases, or portions thereof included under this Assignment, unto the Assignees and their respective successors and assigns, against the lawful claims of Assignor, and all persons claiming, or to claim, by through or under Assignor.

Assignor represents and warrants that Assignor has paid any and all bonuses, rentals, royalties, overriding royalties, and other payments required by the Leases which were due for the period in which Assignor held its interests in the Leases, and that Assignor has fully performed all conditions necessary to maintain the Leases in full force and effect during such period.

3. Successors and Assigns. The terms of this Assignment shall be binding upon and inure to the benefit of the parties hereto and each of their respective successors and assigns, and such terms shall be covenants running with the land, and with each subsequent transfer or assignment thereof.

4. Further Assignees. Assignor and Assignees hereby agree to take all actions and execute, acknowledge, and deliver all such instruments as are necessary or advisable to effectuate the purposes of this Assignment.

5. Counterparts; Recordation. This Assignment may be executed in any number of counterparts, each of which will be deemed an original instrument, but all of which shall collectively constitute one and the same instrument; provided that none of the parties will be bound to this Assignment unless and until all parties have executed a counterpart. For recording purposes, the signature and/or acknowledgment pages from multiple counterparts may be combined with one or more other counterparts without affecting the effect or validity of this Assignment. Assignor shall be responsible for recording this Assignment in the appropriate public record, and will bear any costs associated with such recording.

6. Delivery. Preparation of this Assignment has been a joint effort of the parties and the resulting Assignment must not be construed more severely against any of the parties than against any other.

7. Incorporation. This Assignment is subject to and expressly incorporates the terms of that certain Exchange Agreement dated July 2, 2015 ("Exchange Agreement") executed by and
between Assignor and Assignees. The Exchange Agreement will govern to the extent of any conflict between the terms of this Assignment and the Exchange Agreement.

IN WITNESS WHEREOF, and intending to be legally bound hereby, Assignor and Assignees have caused this Assignment to be duly executed the day and year first above written.

ASSIGNEES:
CNX GAS COMPANY LLC

By: [Signature]
Name: Richard K. Evans
Title: Vice President

NOBLE ENERGY, INC.

By: [Signature]
Name: Casey M. Kimble
Title: Attorney-in-Fact

ASSIGNORS:
CHEVRON U.S.A. INC.

By: [Signature]
Name: Merc Tate
Title: Attorney-in-Fact

Received
Office of Oil & Gas
AUG 03 2015

10/02/2015
CORPORATE ACKNOWLEDGEMENT

STATE/COMMONWEALTH OF Pennsylvania

COUNTY OF Allegheny

On this the 2nd day of July, 2015, before me, Lucia Romanello, the undersigned authority, personally appeared Mark Tates, who acknowledged himself to be the Attorney-In-Fact of CHEVRON U.S.A. INC., a Pennsylvania corporation, and that he as such Attorney-In-Fact being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by himself as Attorney-In-Fact.

IN WITNESS WHEREOF, I hereto set my hand and official seal.

My Commission Expires: 10/02/2015

Notary Public

CORPORATE ACKNOWLEDGEMENT

STATE/COMMONWEALTH OF Pennsylvania

COUNTY OF Washington

On this the 24th day of July, 2015, before me, Jill A. Morris, the undersigned authority, personally appeared Chris K. Almstedt, who acknowledged himself to be the Attorney-In-Fact of NOBLE ENERGY, INC., a Delaware corporation, and that he as such Attorney-In-Fact being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by himself as Attorney-In-Fact.

IN WITNESS WHEREOF, I hereto set my hand and official seal.

My Commission Expires: 10/02/2015

Notary Public

LIMITED LIABILITY COMPANY ACKNOWLEDGEMENT

STATE/COMMONWEALTH OF West Virginia

COUNTY OF Allegany

On this the 10th day of July, 2015, before me, John L. Hardin, the undersigned authority, personally appeared Richard K. Egelwich, who acknowledged himself to be a Vice President of CNOX Gas Company LLC, a Virginia limited liability company, and that he as such Vice President, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the limited liability company by himself as Vice President.

IN WITNESS WHEREOF, I hereto set my hand and official seal.

My Commission Expires: 10/02/2015

Notary Public

Prepared by: NOBLE ENERGY, INC. 1000 Noble Energy Drive Canonsburg, PA 15317

Received Office of Oil & Gas

AUG 03 2015

10/02/2015
EXHIBIT "A" TO THAT CERTAIN EXCHANGE AGREEMENT BY AND AMONG
CHEVRON U.S.A. INC., NOBLE ENERGY, INC. AND CNX GAS COMPANY LLC, with
an Effective Date of June 27, 2015

LEASE SCHEDULE

All of Chevron's right, title, and interest in and to the following Leases, to the extent covering the land described therein:

   Lessee: Chevron, U.S.A., Inc.
   Effective Date: March 27, 2015
   Recording Data: Book 861, Page 613

2. *Lessor: James R. Chaplin
   Lessee: NPAR LLC
   Effective Date: August 27, 2010
   Recording Data: Book 718, Page 322

3. *Lessor: Lloyd Rutan and Lisa J. Gibson
   Lessee: Chevron U.S.A., Inc.
   Effective Date: March 9, 2013
   Recording Data: Book 793, Page 298

4. *Lessor: Brenda Safford
   Lessee: Chevron U.S.A., Inc.
   Effective Date: March 9, 2013
   Recording Data: Book 793, Page 303

5. *Lessor: Jim Arritt, Jr.
   Lessee: Chesapeake Appalachia, LLC
   Effective Date: July 27, 2010
   Recording Data: Book 717, Page 229

6. *Lessor: Jim Arritt and Donna Jean Arritt
   Lessee: Chesapeake Appalachia, LLC
   Effective Date: July 27, 2010
   Recording Data: Book 717, Page 231

*Insofar and only Insofar as pertaining to the portion of the lease lying southwest of a line which intersects the following points using NAD 1927 State Plane West Virginia North:

1. Latitude 39.859141, Longitude -80.769083,
2. Latitude 39.856756, Longitude -80.766845,
3. Latitude 39.853466, Longitude -80.765762
4. Latitude 39.854599, Longitude -80.765489
5. Latitude 39.85385, Longitude -80.765552
6. Latitude 39.85355, Longitude -80.76619

and stipulated to contain 25.04 (Twenty-Five and 4/100) acres, more or less and depicted on
Exhibit A-1 (attached hereto and made a part hereof).

Received
Office of Oil & Gas
AUG 03 2015
EXHIBIT "A-1"

EXHIBIT "A-1" TO THAT CERTAIN ASSIGNMENT OF OIL AND GAS LEASES BETWEEN CHEVRON U.S.A. INC., AS ASSIGNOR, AND NOBLE ENERGY, INC. AND CNX GAS COMPANY LLC, AS ASSIGNEES with an Effective Date of July 2, 2015.

Estep Lease Split
Cay District, Marshall Co. Wv

Received
Office of Oil & Gas
AUG 03 2015
Office of Oil & Gas
601 57th street, SE
Charleston, WV 25304-2345

Re: Drilling Under Roads

To Whom It May Concern:

Noble Energy, Inc. has the right to drill, stimulate and produce wells that are drilled under the County and State Roads as designated on the plats.

Should you have any questions or desire additional information, please do not hesitate to contact me at dee.swiger@nbenergy.com or 724-820-3061.

Sincerely,

Dee Swiger
Regulatory Analyst III

DS/

Enclosures:
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE CERTIFICATION

Date of Notice Certification: 7/30/15

API No. 47-051 -
Operator's Well No. MND 1 JHS
Well Pad Name: MND 1

Notice has been given:
Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: West Virginia
County: Marshall
District: Clay
Quadrangle: Powhatan Point
Watershed: Short Creek - Ohio River (Huc 10)

UTM NAD 83
Easting: 519312.534
Northing: 4411123.327
Public Road Access: County Highway 88/8

Generally used farm name: Consol (Now owned by Murray American Energy DBA Consolidation Coal)

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:

*PLEASE CHECK ALL THAT APPLY

☐ 1. NOTICE OF SEISMIC ACTIVITY or ☐ NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED

☐ 2. NOTICE OF ENTRY FOR PLAT SURVEY or ☐ NO PLAT SURVEY WAS CONDUCTED

☐ 3. NOTICE OF INTENT TO DRILL or ☐ NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or ☐ WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)

☐ 4. NOTICE OF PLANNED OPERATION

☐ 5. PUBLIC NOTICE

☐ 6. NOTICE OF APPLICATION

Required Attachments:
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been notified as required under West Virginia Code § 22-6A-7(b).

Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of service, and service of the return receipt card or other postal receipt for certified mailing.
Certification of Notice is hereby given:

THEREFORE, I, Dee Swiger, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: Noble Energy Inc.  
By: Dee Swiger  
Its: Regulatory Analyst III  
Telephone: 724-820-3061

Address: 1000 Noble Energy Drive  
Canonsburg, PA 15317
Facsimile: 724-416-5248  
Email: dee.swiger@nobleenergy.com

Subscribed and sworn before me this 23rd day of July 2015.

Regina Logue  
Notary Public
My Commission Expires July 7, 2018

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.
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 10/02/15  Date Permit Application Filed: 10/02/15

Notice of:

☒ PERMIT FOR ANY WELL WORK  ☐ CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

☐ PERSONAL SERVICE  ☐ REGISTERED MAIL  ☐ METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

☒ Application Notice  ☒ WSSP Notice  ☐ E&S Plan Notice  ☒ Well Plat Notice

☒ SURFACE OWNER(s)
Name: Murray Energy Corporation / Jason Witt
Address: 46226 National Road
Saint Clairsville, OH 43950

☒ SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Wendell B. & Carolyn S. Rine
Address: 918 Kansas Ridge Lane
Moundsville, WV 26041

☒ SURFACE OWNER(s) (Impoundments or Pits)
Name: 
Address:

☐ COAL OWNER OR LESSEE
Name: Consol Mining Company / Ryan Arp
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

☐ COAL OPERATOR
Name: Consolidation Coal Company (Alex O'Neill)
Address: 46226 National Road
Saint Clairsville, OH 43950

☐ SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: No water purveyors with in 1500'
Address:

☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: 
Address:

*Please attach additional forms if necessary

Received
Office of Oil & Gas
AUG 03 2015

10/02/2015
Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:
Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner’s and water purveyor’s right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions
Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items
examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:
Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:
Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived by writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (j) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:
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. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.
**Time Limits and Methods for Filing Comments.**
The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief’s office by the time stated above. You may call the Chief’s office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a “voluntary statement of no objection” to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

**Comment Requirements**
Your comments must be in writing and include your name, address and telephone number, the well operator’s name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site [http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx) and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

**Permit Denial or Condition**
The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

1. The proposed well work will constitute a hazard to the safety of persons;
2. The plan for soil erosion and sediment control is not adequate or effective;
3. Damage would occur to publicly owned lands or resources; or
4. The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.
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 depprivacyoffice@wv.gov.

Subscribed and sworn before me this 23rd day of July, 2015.

Regina Loque
Notary Public

*No Water Wells or Springs within 1,500'*
STATE OF WEST VIRGINA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least SEVEN (7) days but no more than FORTY-FIVE (45) days prior to entry.

Date of Notice: 9/22/2014  Date of Planned Entry: 10/20/2014

Delivery method pursuant to West Virginia Code § 22-6A-10a
☐ PERSONAL    ☐ REGISTERED    ☐ METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to West Virginia Code § 22-6A-10a, Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary’s web site, to enable the owner to obtain copies from the Secretary.

Notice is hereby provided to:

☐ SURFACE OWNER(s)
Name: Murray Energy Corporation / Jason W. Miller
Address: 6226 National Road
Saint Clairsville, OH 43950

☐ COAL OWNER OR LESSEE
Name: Canonsburg Company / Ryan Apk
Address: 1000 Canons Energy Drive
Canonsburg, PA 15317

☐ MINERAL OWNER(s)
Name: CNX Gas Company, LLC
Address: 1000 Canons Energy Drive
Canonsburg, PA 15317

*please attach additional forms if necessary

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:
State: West Virginia
County: Marshall
District: Clay
Quadrangle: Pohatcong Point

Approx. Latitude & Longitude: N 39° 42' 27" W 80° 7' 42"
Co. Hwy 888
Public Road Access: Short Creek - Ohio River (N-10)
Water: Generally used for name:

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 5th Street, SE, Charleston, WV 25304 (304-926-0150). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/tal-awilng/permit/default.aspx.

Notice is hereby given by:
Well Operator: Noble Energy, Inc.
Address: 333 Technology Drive Suite 116
Canonsburg, PA 15317
Telephone: 724-743-0000
Fax: 724-743-0059
Email: dewig@nobleenergyinc.com

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: privacyoffice@dep.wv.gov.
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.
Date of Notice: 7-30-15 Date Permit Application Filed: 7-30-15

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

☐ CERTIFIED MAIL ☐ HAND
RETURN RECEIPT REQUESTED DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Murray Energy Corporation / Consolidation Coal Company
Address: 46226 National Road
Saint Clairsville, OH 43950

Name: Wendell B. & Carolyn S. Rine
Address: 918 Kansas Ridge Lane
Moundsville, WV 26041

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner’s land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia
County: Marshall
District: Clay
Quadrangle: Powhatan Point
Watershed: Short Creek - Ohio River (Huc 10)

UTM NAD 83 Easting: 519312.534
Northing: 4411123.327
Public Road Access: County Highway 88/8
Generally used farm name: Cave Run (now owned by Murray American Energy DBA Consolidation Coal)

This Notice Shall Include:
Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by W. Va. Code § 22-6A-10(b) to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: Noble Energy Inc.
Address: 1000 Noble Energy Drive
Carrizo Sun, PA 15317
Telephone: 724-820-3051
Fax: 724-416-5248
Email: dee.swiger@nbenergy.com

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.

Received
Office of Oil & Gas
AUG 03 2015
10/02/2015
Revised September 16, 2015

James A. Martin, Chief  
Office of Oil and Gas  
Department of Environmental Protection  
601 57th Street, SE  
Charleston, WV 25304

Subject: DOH Permit for the MND-1 Well Pad, Marshall County

Dear Mr. Martin,

The West Virginia Division of Highways has issued Permit #06-2014-0611 for the subject site to Noble Energy, Inc. for access to the State Road for the well site located off of Marshall County Route 88/8 SLS.

The operator has signed an OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton P.E.  
Regional Maintenance Engineer  
Central Office Oil & Gas Coordinator

Cc: James L. McCune  
Noble Energy, Inc.  
CH, OM, D-6  
File

RECEIVED  
Office of Oil and Gas  
SEP 21 2015  
WV Department of Environmental Protection  
10/02/2015
# Hydraulic Fracturing Fluid Product Component Information Disclosure

**Hydraulic Fracturing Fluid Composition:**

<table>
<thead>
<tr>
<th>Trade Name</th>
<th>Supplier</th>
<th>Purpose</th>
<th>Ingredients</th>
<th>Chemical Abstract Service Number (CAS #)</th>
<th>Maximum Ingredient Concentration in Additive (% by mass)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh Water</td>
<td>Operator</td>
<td></td>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>100.0%</td>
</tr>
<tr>
<td>HYDROCHLORIC ACID 5-10%</td>
<td>Halliburton</td>
<td></td>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>100.0%</td>
</tr>
<tr>
<td>SAND - COMMON WHITE</td>
<td>Halliburton</td>
<td>Proppant</td>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>100.0%</td>
</tr>
<tr>
<td>SAND - PREMIUM WHITE</td>
<td>Halliburton</td>
<td>Proppant</td>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>100.0%</td>
</tr>
<tr>
<td>FR-66</td>
<td>Halliburton</td>
<td>Friction Reducer</td>
<td>Hydrotreated light petroleum distillate</td>
<td>64742-47-6</td>
<td>30.0%</td>
</tr>
<tr>
<td>BE-9</td>
<td>Halliburton</td>
<td>Biocide</td>
<td>Tributyl tetradecyl phosphonium chloride</td>
<td>81741-28-8</td>
<td>10.0%</td>
</tr>
<tr>
<td>Scalecheck® LP-65</td>
<td>Halliburton</td>
<td>Scale Inhibitor</td>
<td>Ammonium chloride</td>
<td>12125-02-9</td>
<td>10.0%</td>
</tr>
<tr>
<td>Scale Inhibitor</td>
<td>Halliburton</td>
<td></td>
<td>Ammonium chloride</td>
<td>12125-02-9</td>
<td>10.0%</td>
</tr>
<tr>
<td>LGC-36 UC</td>
<td>Halliburton</td>
<td>Liquid Gel Concentrate</td>
<td>Guar gum</td>
<td>9000-30-0</td>
<td>60.0%</td>
</tr>
<tr>
<td>LGC-36 LC</td>
<td>Halliburton</td>
<td>Liquid Gel Concentrate</td>
<td>Guar gum</td>
<td>9000-30-0</td>
<td>60.0%</td>
</tr>
<tr>
<td>LCA-1</td>
<td>Halliburton</td>
<td>Solvent</td>
<td>Paraffinic solvent</td>
<td>Confidential Business Information</td>
<td>100.0%</td>
</tr>
<tr>
<td>HAI-OFS ACID INHIBITOR</td>
<td>Halliburton</td>
<td>Corrosion Inhibitor</td>
<td>Methanol</td>
<td>67-56-1</td>
<td>60.0%</td>
</tr>
<tr>
<td>FE-1A ACIDIZING COMPOSITION</td>
<td>Halliburton</td>
<td>Additive</td>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>60.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acetic anhydride</td>
<td>108-24-7</td>
<td>100.0%</td>
</tr>
<tr>
<td>LoSurf-300D</td>
<td>Halliburton</td>
<td>Non-ionic Surfactant</td>
<td>1,2,4 Trimethylbenzene</td>
<td>95-63-6</td>
<td>1.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ethanol</td>
<td>66-17-5</td>
<td>1.0%</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Heavy aromatic petroleum naphtha</td>
<td>67-47-2</td>
<td>60.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>5.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched</td>
<td>127087-87-0</td>
<td>5.0%</td>
</tr>
<tr>
<td>SP BREAKER</td>
<td>Halliburton</td>
<td>Breaker</td>
<td>Sodium persulfate</td>
<td>7775-27-1</td>
<td>100.0%</td>
</tr>
<tr>
<td>WG-36 GELLING AGENT</td>
<td>Halliburton</td>
<td>Gelling Agent</td>
<td>Guar gum</td>
<td>9000-30-0</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Note:** For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

All component information listed was obtained from the supplier’s Material Safety Data Sheets (MSDS).

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
* **Information is based on the maximum potential for concentration and thus the total may be over 100%

Received
Office of Oil & Gas
AUG 08 2015