



west virginia department of environmental protection

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

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

March 18, 2015

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-5101810, 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: MND 1 AHS
Farm Name: CNX GAS COMPANY, LLC ET AL
API Well Number: 47-5101810
Permit Type: Horizontal 6A Well
Date Issued: 03/18/2015

Promoting a healthy environment.

03/20/2015

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 fifty (50) 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.

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WW-6B
(9/13)

STATE OF WEST VIRGINIA WV Department of Environmental Protection
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

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

2) Operator's Well Number: MND 1 AHS 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: 1151.18'

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Marcellus at 6315'-6370' and 55' in thickness. Anticipated pressure at 4204 psi.

8) Proposed Total Vertical Depth: 6360'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 16,612'

11) Proposed Horizontal Leg Length: 9112'

12) Approximate Fresh Water Strata Depths: 521'

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

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-mine maps attached

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

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

18)

CASING AND TUBING PROGRAM

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	30"	New	LS	117#	40'	40'	fill/soil to surface
Fresh Water	20"	New	LS	94#	575'	575'	CTS
Coal	13 3/8"	New	J-55	54.5	1097'	1097'	CTS
Intermediate	9 5/8"	New	J-55	36#	2437'	2437'	CTS
Production	5 1/2"	New	P110	20#	16612'	16612'	TOC 200' above 9.625 casing shoe
Tubing							
Liners							

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	0.375		GTS	GTS
Fresh Water	20"	26"	0.438	2730	Type 1	1.18
Coal	13 3/8"	17 1/2"	0.380	2730	Type 1	1.18
Intermediate	9 5/8"	12 3/8"	0.352	3520	Class A	1.19
Production	5 1/2"	8 3/4" & 8 1/2"	0.361	12,640	Class A	1.27
Tubing						
Liners						

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PACKERS

Kind:				
Sizes:				
Depths Set:				

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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. If we should encounter an unanticipated void we will install casing at a minimum of 20' below the void but not more than 100' below the void, set a basket and grout to surface.

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

The stimulation will be multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals. See attached list. Maximum pressure not to exceed 10,000 lb.

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 every 3 joints to surface. First Intermediate casing will have bow spring centralizers on first 2 joints then every third joint to 100' from surface. Second Intermediate will have bow spring centralizers every three joints to 100' from surface. Production string will have a rigid bow spring every third joint to KOP to TOC. Rigid bow spring every joint to KOP.

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

Conductor- fill/soil *Surface and Coal (Intermediate)- 15.6 ppg Type 1+2% CaCl, 0.25# Lost Circ 30% Excess Yield =1.18. Intermediate 15.6 ppg Class A +0.4 % Ret, 0.15% Disp, 0.2% Antifoam and 0.125#/sk Loss Circ. 20% Excess Yield = 1.19 to surface. Production 14.8ppg Class A 25:75:0 System =2.6% Cement extender, 0.7% fluid Loss Additive, 0.45% high temp retarder, 0.2% friction reducer, 10 % excess yield=1.27 TOC>=200' above 9.625" shoe.

25) Proposed borehole conditioning procedures:

Conductor-The hole is drilled w/air and casing is run on air. Apart from insuring the hole is clean via air circulation at TD, there are no other conditioning procedures. Surface-The hole is drilled w/air and casing is run on air. Fill with KCl water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement Coal-The hole is drilled and cased w/air or on Freshwater based mud. Once casing is at setting depth, the hole is filled w/KCl water and a minimum of one hole volume is circulated prior to pumping cement. Intermediate-Once surface casing is set and cemented, intermediate hole is drilled either on air or SOBMs and filled with KCl water once drilled to TD. Production-The hole is drilled with SOBMs and once to TD, circulated at maximum allowable pump rate for at least 6x bottoms up. Once on bottom with casing, circulate a minimum of one hole volume prior to pumping cement.

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*Note: Attach additional sheets as needed.

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Allied Material Name	Additive (Material) Type	Additive (Material) Description	CAS #
CCAC (Class A Common)	Base Cement	Grey powder	65997-15-1
CCHP (Class H Premium)	Base Cement	Grey powder	65997-15-1
			14808-60-7
			14464-46-1
			15468-32-3
CPOZ (Pozmix Flyash)	Base Cement	Grey powder	112926-00-8
			65997-15-1
			1317-65-3
			13397-24-5
			69012-64-2
			14808-60-7
			68475-76-3
			68131-74-8
			65996-69-2
CB-AFW (Allied Featherweight™ Blend)	Cement Blend	Grey powder	1332-58-7
			Non-Hazardous
			1317-65-3
CCARB	Acid Soluble Additive	White or Light Grey Powder	14808-60-7
			10043-52-4
			7447-40-7
			7732-18-5
CA-100	Accelerator	White, flake	7647-14-5
CA-200	Accelerator, clay control	White, granule	7647-14-5
			7447-40-7
CA-300 (CCC-100)	Accelerator, clay control	White, granule	7647-14-5
CGEL (Gel-Bentonite)	Light Weight Additive/Gel Spacer	Grey powder	14808-60-7
CLC-KOL (Kol-Seal)	Lost Circulation Aid	Black variable size	Non-Hazardous
CLC-CPF (Cellophane Flakes)	Lost Circulation Aid	White and colored flake	Non-Hazardous
CLC-SCK (SealCheck™)	Lost Circulation Aid	White Fibers, 1/4"	Non-Hazardous
			26499-65-0
			65997-15-1
CA-500	Compressive Strength Enhancer	White powder	14808-60-7

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CHW-BAR	Weighting Agent	Tan powder	7727-43-7
CSAPP	Mud Flush (Chemical Wash)	White Powder	7758-16-9
CR-1000	Retarder	White, granule	57-50-1
CFL-210	Fluid Loss Additive	Slightly brown powder	Non-Hazardous
CFL-270	Fluid Loss Additive	White powder	Non-Hazardous
CR-100	Retarder	Dark Brown powder	Non-Hazardous
CD-200	Cement Dispersant	Red powder	Non-Hazardous
CD-100	Friction Reducer	Light brown powder	Non-Hazardous
CDF-100P	Defoamer	White powder	14808-60-7 127-09-3 6834-92-0
CA-400 (CSA-100)	Suspending Aid	White, granule	7732-18-5
CGMS-100 (GasGuard™ 100)	Gas Migration Aid	Red-orange powder	Non-Hazardous
CSA-200	Suspending Aid	Slightly Yellow powder	Non-Hazardous
CS-ASII (Allied Spacer II)	Cement Spacer Mix	Light Tan powder	Non-Hazardous
CSS-17	Liquid Surfactant	Clear Liquid (Alcohol Suspended)	65-56-1 27176-87-0
CDF-100L	Liquid Defoamer	Clear Liquid (Alcohol Suspended)	65-56-1 126-73-8 71-36-3
CCC-200L	Liquid KCl Substitute	Clear Liquid (Alcohol Suspended)	61789-71-7 67-63-0



DRILLING WELL PLAN
MND-1A-HS (Marcellus HZ)
Marcellus Shale Horizontal
Marshall County, WV

03/20/2015

Ground Elevation	1152'	MND-1A SHL (Lat/Long)	(494217.97N, 1642179.94E) (NAD27)							
Azim	325°	MND-1A LP (Lat/Long)	(495758.77N, 1643315.09E) (NAD27)							
WELLBORE DIAGRAM	HOLE	CASING	GEOLOGY	TOP	BOTTOM	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS
	36	30" 117#	Conductor	40	40	AIR	To Surface	N/A	Ensure the hole is clean at TD.	Stabilize surface fill soil. Conductor casing = 0.375" wall thickness
	26	20" 94#	Surface Casing	575	575	AIR	15.6 ppg Type 1 + 2% CaCl ₂ 0.25# Lost Circ 30% Excess Yield = 1.18	Centralized every 3 joints to surface	Fill with KCl water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement.	Surface casing = 0.438" wall thickness Burst=2730 psi
	17 1/2	13-3/8" 54.5# J-55 BTC	Pittsburgh Coal	687	697	AIR	15.6 ppg Class A +0.4% Ret, 0.15% Disp, 0.2% Antifoam, 0.125#/sk Lost Circ 20% Excess Yield=1.19 To Surface	Bow Spring on first 2 joints then every third joint to 100' form surface	Fill with KCl water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.380" wall thickness Burst=2730 psi
	12 3/8	9-5/8" 36# J-55 LTC	Price Formation	2137	2652	AIR	14.8ppg Class A 25.75:0 System +2.6% Cement extender, 0.7% Fluid Loss additive, 0.45% high temp retarder, 0.2% friction reducer	Bow Spring centralizers every third joint to 100' feet from surface.	Fill with KCl water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement.	Casing to be ran 250' below the 5th Sand. Intermediate casing = 0.352" wall thickness Burst=3520 psi
	8.75" Vertical	5-1/2" 20# HCP-110 TXP BTC	Rheinstreet	5754	6075	8.0ppg - 9.0ppg SOBM	10% Excess Yield=1.27 TOC >= 200' above 9.625" shoe	Rigid Bow Spring every third joint from KOP to TOC		Production casing = 0.361" wall thickness Burst=12640 psi Note Actual centralizer schedules may be changed due to hole conditions
			Cashaqua	6075	6147					
			Middlesex	6147	6170					
			West River	6170	6231					
			Burkett	6231	6256					
			Tully Limestone	6256	6280					
			Hamilton	6280	6315					
			Marcellus	6315	6370					
			TD	16612	6360					
			Onondaga	6370						

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LP @ 6360' TVD / 7500' MD
 8.75 / 8.5 Hole - Cemented Long String
 5-1/2" 20# HCP-110 TXP BTC
 +/9'112" ft Lateral
 TD @ +/-6360' TVD
 +/-16612' MD

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Noble Energy, Inc. OP Code 494501907

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

Elevation 1152.08' Post Construction County Marshall District Clay

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: Closed Loop-No pit will be utilized

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 SOB M

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

Additives to be used in drilling medium? Please see attached

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

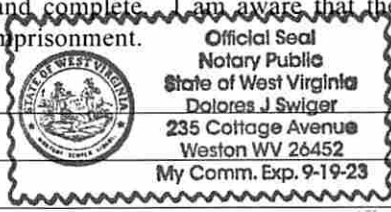
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations 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 [Signature]

Company Official (Typed Name) Kim Ward / Dee Swiger

Company Official Title Regulatory Analyst III



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Subscribed and sworn before me this 8 day of December, 20 14

[Signature] Notary Public

My commission expires 09/19/2023

03/20/2015

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Form WW-9

Operator's Well No. MND 1 AHS

Noble Energy, Inc.

Proposed Revegetation Treatment: Acres Disturbed 9.0 Prevegetation pH _____

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

Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5

**See site plans for full list

**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: Pre Seed and mulch all cut area, maintain all E & S during operation.

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Title: Oil & Gas Inspector Date: 12/10/14

Field Reviewed? Yes No

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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
Cochranon, 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

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

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

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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

Water Haul off Companies:

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

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
Permit # 34-031-2-7177
23986 Airport Road
Coshocton, OH 43812
740-575-4484

Adams #2
Permit # 34-031-2-7178
740-575-4484

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Site Safety Plan

Noble Energy, Inc.

MND 1 Well Pad

1100 Kansas Ridge Rd

Moundsville, WV

December 2014: Version 1

AHS

For Submission to

**West Virginia Department of Environmental Protection,
Office of Oil and Gas**

Handwritten signature and date: 12/10/14

Noble Energy, Inc.

Appalachia Offices

333 Technology Drive, Suite 116

Canonsburg, PA 15317-9504

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Office of Oil & Gas

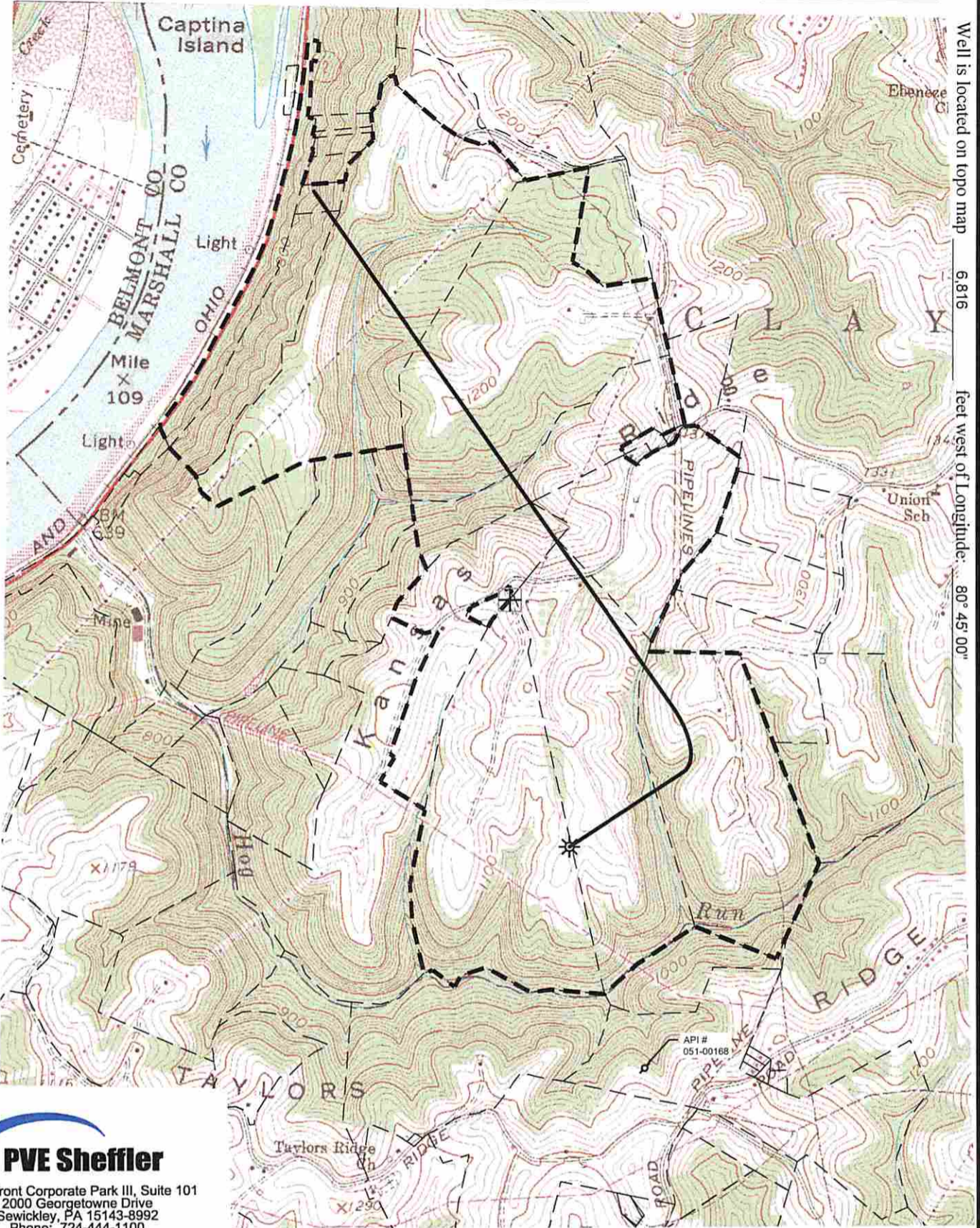
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Well is located on topo map 9,108 feet south of Latitude: 39° 52' 30"

Well is located on topo map 6,816 feet west of Longitude: 80° 45' 00"



Waterfront Corporate Park III, Suite 101
2000 Georgetown Drive
Sewickley, PA 15143-8992
Phone: 724-444-1100

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



DATE: NOVEMBER 17, 2014 - REV: NOVEMBER 21, 2014

OPERATOR'S WELL #: MND 1 AHS

API WELL # 47 051
STATE COUNTY PERMIT

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

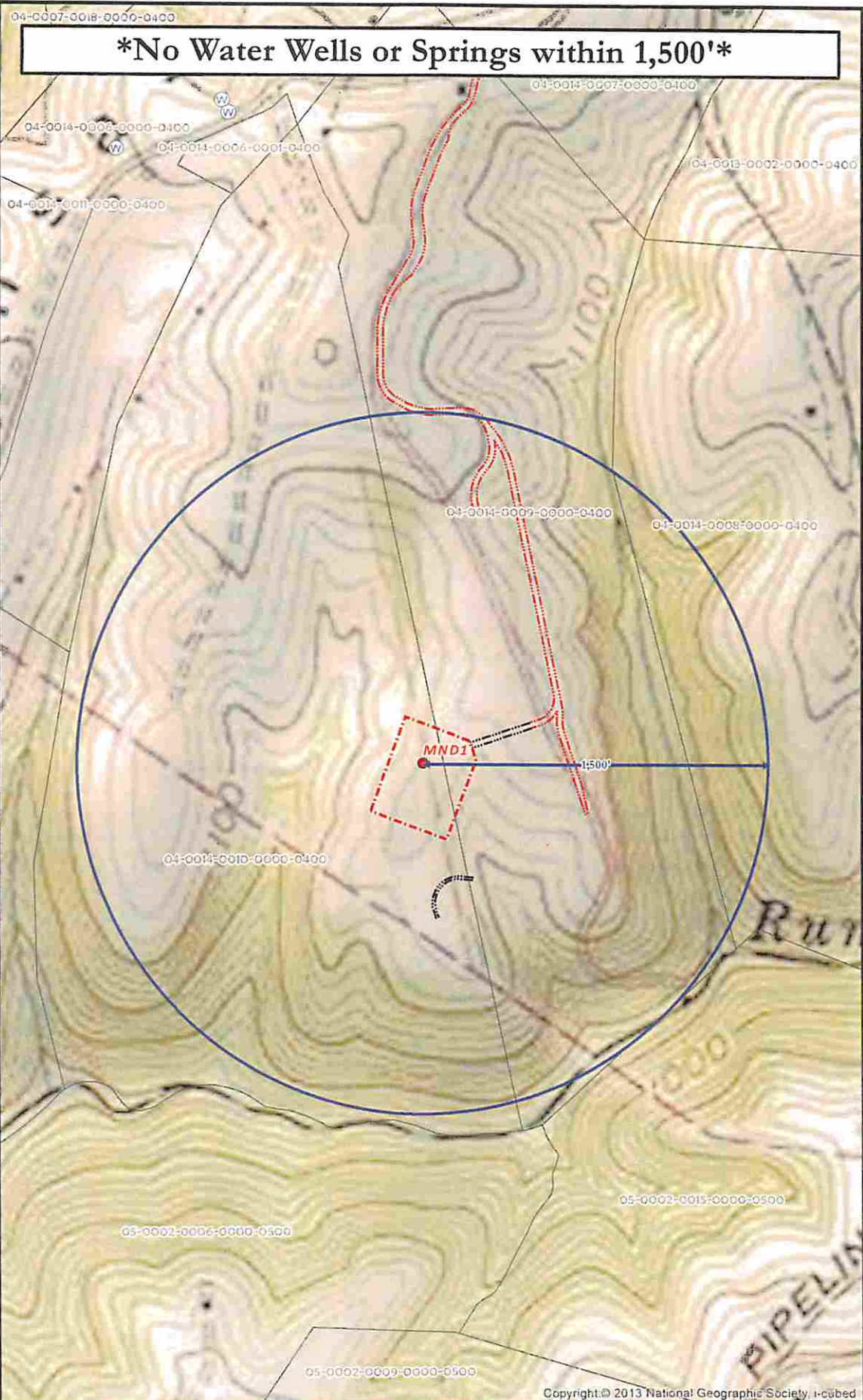
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WATERSHED: OHIO RIVER ELEVATION: 1152.08'
COUNTY/DISTRICT: MARSHALL / CLAY QUADRANGLE: POWHATAN POINT, W. VA./OHIO
SURFACE OWNER: MURRAY ENERGY CORPORATION ACREAGE: 126.99
OIL & GAS ROYALTY OWNER: CNX GAS COMPANY, LLC, ET AL. ACREAGE: 126.99

03/20/2015

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,360' ± TMD: 15,332' ±
WELL OPERATOR: NOBLE ENERGY, INC. DESIGNATED AGENT: STEVEN M. GREEN
Address: 333 TECHNOLOGY DRIVE, SUITE 116 Address: 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
City CANNONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301



No Water Wells or Springs within 1,500'

MND 1 SITE SAFETY PLAN
- WATER WELL PURVEYORS -

- Well Pad
- Noble Access Road
- Fence
- Well Pad Boundary
- 1,500' Buffer
- Contour
- Stream
- Pipeline
- Parcel

0 250 500 1,000 Feet
1 Inch = 500 Feet

Projection: NAD 1927 StatePlane West Virginia North FIPS 4701
Units: Foot US

****Disclaimer: All data is licensed for use by Noble Energy Inc. use only.****

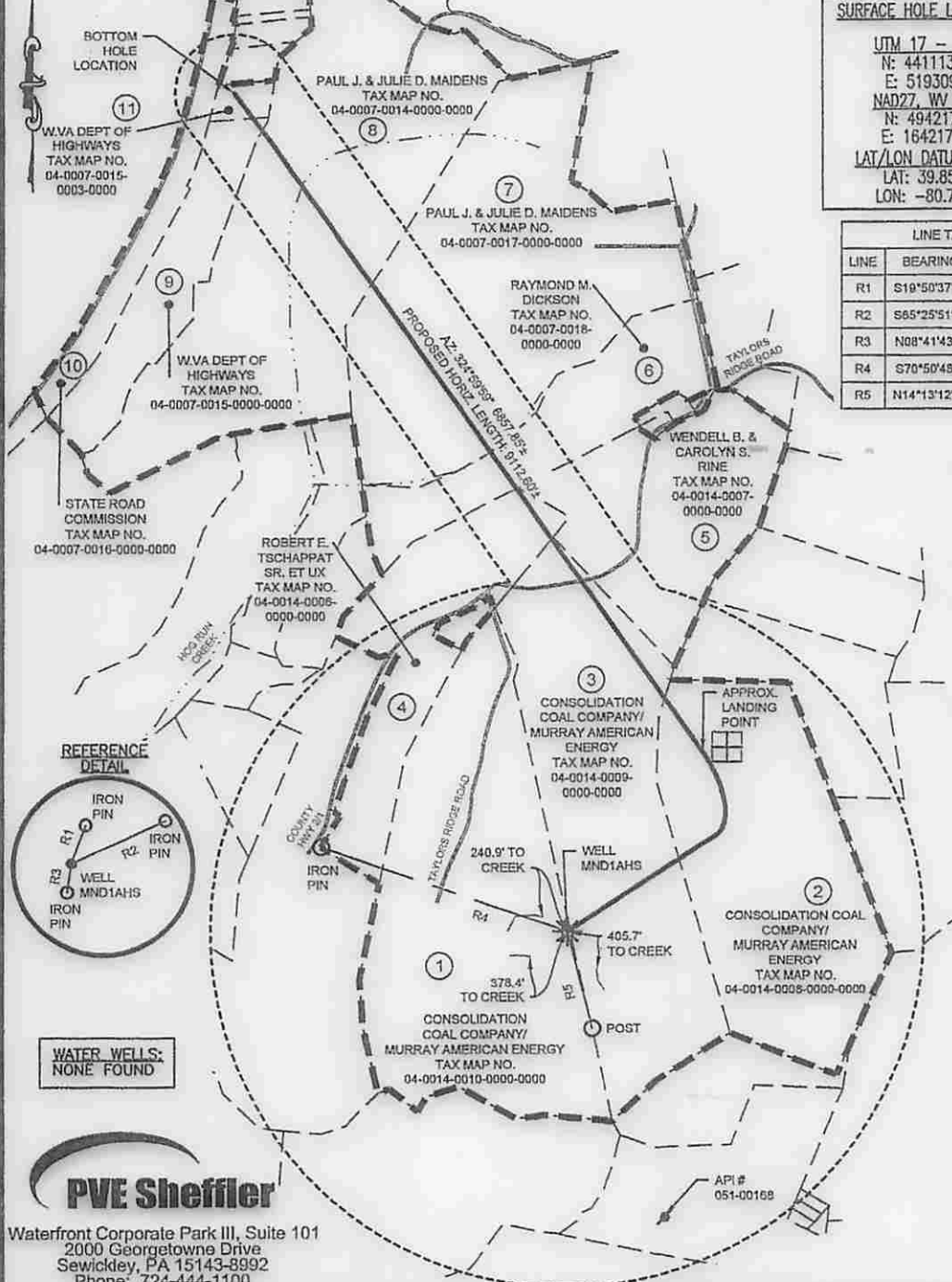
Date: 8/5/2014
Author: Christopher Claver

6/6

03/20/2015

Well is located on topo map 9,108 feet south of Latitude: 39° 52' 30"

Well is located on topo map 6,816 feet west of Longitude: 80° 45' 00"



SURFACE HOLE LOCATION (SHL)

UTM 17 - NAD83
 N: 4411134.291
 E: 519309.007
 NAD27, WV NORTH
 N: 494217.970
 E: 1642179.940
 LAT/LON DATUM-NAD83
 LAT: 39.850009
 LON: -80.774286

APPROX. LANDING POINT

UTM 17 - NAD83
 N: 4411600.347
 E: 519647.157
 NAD27, WV NORTH
 N: 495728.770
 E: 1643315.090
 LAT/LON DATUM-NAD83
 LAT: 39.854201
 LON: -80.770319

LINE TABLE

LINE	BEARING	DISTANCE
R1	S19°50'37"W	229.95
R2	S65°25'51"W	576.62
R3	N08°41'43"E	185.31
R4	S70°50'48"E	2193.45
R5	N14°13'12"W	851.61

BOTTOM HOLE LOCATION

UTM 17 - NAD83
 N: 4413291.740
 E: 518420.193
 NAD27, WV NORTH
 N: 501346.440
 E: 1639381.560
 LAT/LON DATUM-NAD83
 LAT: 39.869467
 LON: -80.784615

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

LEGEND

- TOPO MAP POINT
- WELL
- WATER SOURCE
- LEASED NUMBER BASED ON ATTACHED WMSA1
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM/WATERWAY
- ROAD

WELLS WITHIN 3000'

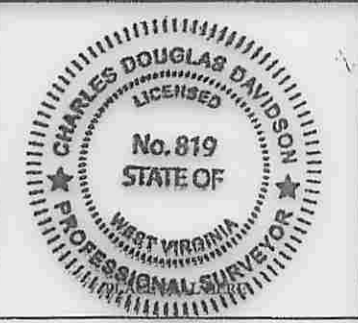
- PLUGGED WELL

PVE Sheffler
 Waterfront Corporate Park III, Suite 101
 2000 Georgetowne Drive
 Sewickley, PA 15143-8992
 Phone: 724-444-1100

FILE #: MND 1 AHS
 DRAWING #: MND 1 AHS
 SCALE: 1"=1500'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT H 138: 638.58'

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

SIGNED *Charles Douglas Davidson*
 R.P.E.: L.L.S.: P.S. NO. 819



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

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

WATERSHED: OHIO RIVER
 COUNTY/DISTRICT: MARSHALL / CLAY
 SURFACE OWNER: CONSOLIDATION COAL COMPANY/ MURRAY ENERGY
 OIL & GAS ROYALTY OWNER: CNX GAS COMPANY, LLC, ET AL.

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: MARCELLUS
 WELL OPERATOR: NOBLE ENERGY, INC.
 Address: 333 TECHNOLOGY DRIVE, SUITE 116
 City CANNONBURG State PA Zip Code 15317

DATE: NOVEMBER 17, 2014 - REV: DECEMBER 15, 2014

OPERATOR'S WELL #: MND 1 AHS
 API WELL # 47 051 01810
 STATE COUNTY PERMIT

ELEVATION: 1152.08'
 QUADRANGLE: POWHATAN POINT, W. VA./OHIO
 ACREAGE: 126.99
 ACREAGE: 126.99

ESTIMATED DEPTH: TVD: 6,360' ± TMD: 16,612' ±
 DESIGNATED AGENT: STEVEN M. GREEN
 Address: 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
 City CHARLESTON State WV Zip Code 25301

03/20/2015