



west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Monday, August 27, 2018
WELL WORK PERMIT
Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD

PARKERSBURG, WV 26101

Re: Permit approval for MND 20 BU
47-051-02012-00-00

This well work permit 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 any additional specific 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 of 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.

Per 35 CSR 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- 0450.

James A. Martin
Chief

Operator's Well Number: MND 20 BU
Farm Name: CONSOLIDATION COAL COM
U.S. WELL NUMBER: 47-051-02012-00-00
Horizontal 6A New Drill
Date Issued: 8/27/2018

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. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. 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.
10. 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.

PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-926-0499 Ext 1274

Barry K. Lay, Chairman
dep.wv.gov

August 20, 2018

Department of Environmental Protection
Office of Oil and Gas
Charleston, WV 25304

RE: Application for Deep Well Permit – API #47-051-02012

COMPANY: HG Energy II Appalachia, LLC

FARM: HG Energy II Appalachia, LLC MND 20 BU

COUNTY: Marshall DISTRICT: Franklin QUAD: Powhatan Point

The deep well review of the application for the above company is **Approved to drill to Point Pleasant for completion.**

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

1. Comments to Notice of Deviation filed? No
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: MND 6 HHS 47-051-01732 and MND 20 DU 47-051-02014
4. Provided a plat showing that the proposed location is a distance of 400+ feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

A handwritten signature in blue ink that reads "Susan Rose".

Susan Rose
Administrator

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

1) Well Operator: HG Energy II Appalachia, L 494519932 Marshall Franklin Powhatan Point
Operator ID County District Quadrangle

2) Operator's Well Number: MND20 BU Well Pad Name: MND20

3) Farm Name/Surface Owner: Murray Energy Corp Public Road Access: SLS 2/1

4) Elevation, current ground: 1079' Elevation, proposed post-construction: 1058'

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

6) Existing Pad: Yes or No No *JN 8/24/18*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant 10662' - 10782' / 120' Thick / 9668 psi

8) Proposed Total Vertical Depth: 10,700'

9) Formation at Total Vertical Depth: Point Pleasant

10) Proposed Total Measured Depth: 25,434'

11) Proposed Horizontal Leg Length: 13,900'

12) Approximate Fresh Water Strata Depths: 445, 708', 805'

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

14) Approximate Saltwater Depths: NA

15) Approximate Coal Seam Depths: 526' - 536'

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

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: 526' - 536'
Seam: Pittsburgh #8
Owner: Consol Mining Company, LLC

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	New	LS	157.5#	60'	60'	NA
Fresh Water	20"	New	J-55	94#	950'	950'	CTS
Coal	13 3/8"	New	J-55	54.5#	2300'	2300'	CTS
Intermediate	9 5/8"	New	P-110	47#	9303'	9303'	CTS
Production	5 1/2"	New	P-110	23#	25434'	25434'	20% excess, yield = 1.7669, CTS
Tubing							
Liners							

JN 8/24/18

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	30"	0.5"			Class A	CTS
Fresh Water	20"	26"	0.438"	2110 psi		Class A	40% Excess Yield = 1.1924, CTS
Coal	13 3/8"	17.5"	0.380"	2730 psi		Class A	30% Excess Yield = 1.18, CTS
Intermediate	9 5/8"	12.25"	0.472"	9440 psi		Stage 1, Class H, Stage	30% Excess Yield = 1.1744, CTS
Production	5 1/2"	8.5"	0.361"	14520 psi	11,500	Class H	20% Excess Yield = 1.7669, CTS
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill the vertical depth to the Point Pleasant at an estimated total vertical depth of approximately 10,700 feet. Drill horizontal leg - stimulate and produce the Point Pleasant Formation. Should we encounter formation issues, set the 20" into next competent formation but not deeper than elevation. Should we encounter an 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. Maximum pressure not to exceed 10,000 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 17.39

22) Area to be disturbed for well pad only, less access road (acres): 3.8

23) Describe centralizer placement for each casing string:

Conductor - No centralizers used. Fresh Water/Surface - Centralizers every 3 joints to surface. 1st Intermediate - Bow spring on first 2 joints then every third joint to 100' from surface. Intermediate - Bow spring on first 8 joints then every third joint to 100' from surface. Production - Run 1 spiral centralizer every 5 joints from the top of the curve to surface. Run 1 spiral centralizer every 3 joints from the 1st 5.5" long joint to the top of the curve. See Attached Schematic for more detail.

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

Conductor - N/A. Casing to be drilled in w/ Dual Rotary Rig
Surface/Fresh Water - 15.0 ppg PNE-1, Class A + 2.5% bwoc CaCl₂, 40% Excess Yield = 1.1924 / CTS
1st Intermediate - Lead: 15.0 ppg Class A, 2.5% bwoc CaCl₂/30% Excess, Yield=1.2893 Tail: 15.0 ppg / Class A / 2.5% bwoc CaCl₂/30% Excess, Yield=1.18 CTS
2nd Intermediate - Stage 1: 15.2 ppg PNE-1+2.5% bwoc CaCl₂, 35.0% Class H, 30% Excess, Yield=1.1313 / Stage 2: 14.5 ppg PNE-1+2.5% bwoc CaCl₂, 50.50 Class A, 30% Excess, Yield=1.1744 CTS
Production - Lead: 15.0 ppg, 35.0% Class H +0.75 gal/bk FP-13L +0.3%bwoc MPA-250 +0.35% bwoc R3, 20% Excess, Yield=1.1475 Tail: 5.0 ppg, Class H - Acid Soluble +0.75 gal/bk FP-13L +.05% bwoc MPA-250 + 0.2% bwoc R3 + 30% bwoc ASA301, 20% Excess / Yield=1.7809 CTS
See Attached Casing Schematic for more detail

25) Proposed borehole conditioning procedures:

Conductor - Ensure the hole is clean at TD. Surface/Fresh Water - Once casing is at setting depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement. 1st Intermediate - Once casing is at setting depth, circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement. 2nd Intermediate - Once casing is at setting depth, circulate and condition mud at TD. Circulate a minimum of one hole volume prior to pumping cement. Production - Once on bottom/TD with casing, circulate at max allowable pump rate for at least 2x bottoms up, or until returns and pump pressures indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping cement. See Attached Schematic for more detail.

*Note: Attach additional sheets as needed.

51-62012

**EXISTING WELLS LOCATED WITHIN THE AREA OF REVIEW FOR:
MND20 PAD AND PROPOSED WELLS AU, BU, CU, DU & EU**

RECEIVED
Office of Oil and Gas
FEB 16 2018
WV Department of
Environmental Protection

CT	API	COUNTY	FARM	OPERATOR NAME	FORMATION NAME	WELL TYPE	TVD	STATUS	LATITUDE	LONGITUDE
1	4705100086	MARSHALL	Mike & Ethel Meszner 1	Ruckman, J. C.	Conemaugh Group	Gas	471	ABANDONED	39.853035	-80.788942
2	4705100101	MARSHALL	E L Denny Hrs 1	Ruckman, J. C.	UNKNOWN	not available	-	NEVER DRILLED	39.85294	-80.787437
3	4705100150	MARSHALL	Guy McDowell 1	Dinsmoore, D. H.	Allegheny Fm	Dry w/ Gas Show	1517	PLUGGED	39.845205	-80.764859
4	4705100168	MARSHALL	D H & Genevieve Mason 2	Tedrow & Moore	Big Injun (Price&eq)	Dry	1947	ABANDONED	39.843465	-80.771254
5	4705100551	MARSHALL	Ralph Chaplin 1	Kentucky Central & Co.	Pittsburgh Coal	Coal Bed Methane	-	ABANDONED	39.844335	-80.76373
6	4705100868	MARSHALL	Consol Coal Co 1	CNX Gas Co. LLC (North)	Pittsburgh Coal	Coal Bed Methane	141	ABANDONED	39.856225	-80.790825
7	4705100869	MARSHALL	Consol Coal Co	CNX Gas Co. LLC (North)	Pittsburgh Coal	Coal Bed Methane	193	ABANDONED	39.851295	-80.787436
8	4705100870	MARSHALL	Consol Coal Co 1	CNX Gas Co. LLC (North)	Pittsburgh Coal	Coal Bed Methane	184	ABANDONED	39.850424	-80.808222
9	4705100871	MARSHALL	Ireland Gob Well No X-West	CNX Gas Co. LLC (North)	Pittsburgh Coal	Coal Bed Methane	525	ABANDONED	39.856225	-80.795429
10	4705100952	MARSHALL	Consol Coal Co	CNX Gas Co. LLC (North)	Pittsburgh Coal	Coal Bed Methane	-	ABANDONED	39.851295	-80.787436
11	4705101026	MARSHALL	Rae Mac Corp	CNX Gas Co. LLC (North)	Pittsburgh Coal	Coal Bed Methane	-	ABANDONED	39.845495	-80.756017
12	4705170215	MARSHALL	Eva Sims 1	ORPHAN PROJECT WELL	UNKNOWN	not available	-	UNKNOWN	39.85144	-80.788
13	4705170811	MARSHALL	Lemuel Yoho 1	Manufacturers Light & Heat Co.	UNKNOWN	not available	-	UNKNOWN	39.810623	-80.791363
14	4705170813	MARSHALL	T R Kelly 1	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.812219	-80.774254
15	4705170814	MARSHALL	Joseph Arnold	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.814252	-80.760715
16	4705170815	MARSHALL	John C Cain	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.818751	-80.772561
17	4705170816	MARSHALL	Andrew J Gatts	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.827894	-80.782714
18	4705170817	MARSHALL	Mary L Gatts	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.831087	-80.782338
19	4705170818	MARSHALL	T S Biersford 1	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.832248	-80.775569
20	4705170819	MARSHALL	Wesley Bonar	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.833856	-80.76222
21	4705170820	MARSHALL	John Gallaher	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.83763	-80.778954
22	4705170821	MARSHALL	S T Yoho	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.839226	-80.788542
23	4705170822	MARSHALL	T B McFarland	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.846483	-80.792983
24	4705170823	MARSHALL	R H McFarland	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.850112	-80.78779
25	4705170824	MARSHALL	E R Potts 1	ORPHAN PROJECT WELL	UNKNOWN	not available	-	UNKNOWN	39.857949	-80.792419
26	4705170825	MARSHALL	Adaline Hammond 2	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.860852	-80.79223
27	4705170826	MARSHALL	Adaline Hammond	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.862303	-80.790046
28	4705170827	MARSHALL	Adaline Hammond	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.862593	-80.79061
29	4705170828	MARSHALL	J Nightler Hrs	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.863029	-80.790046
30	4705170829	MARSHALL	J Nightler Hrs 2	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.86419	-80.789294
31	4705170830	MARSHALL	J Nightler Hrs 1	UNKNOWN	UNKNOWN	not available	-	UNKNOWN	39.865351	-80.788542

SOURCE: WVGES DATASET (2017) and WVDEP WEBSITE

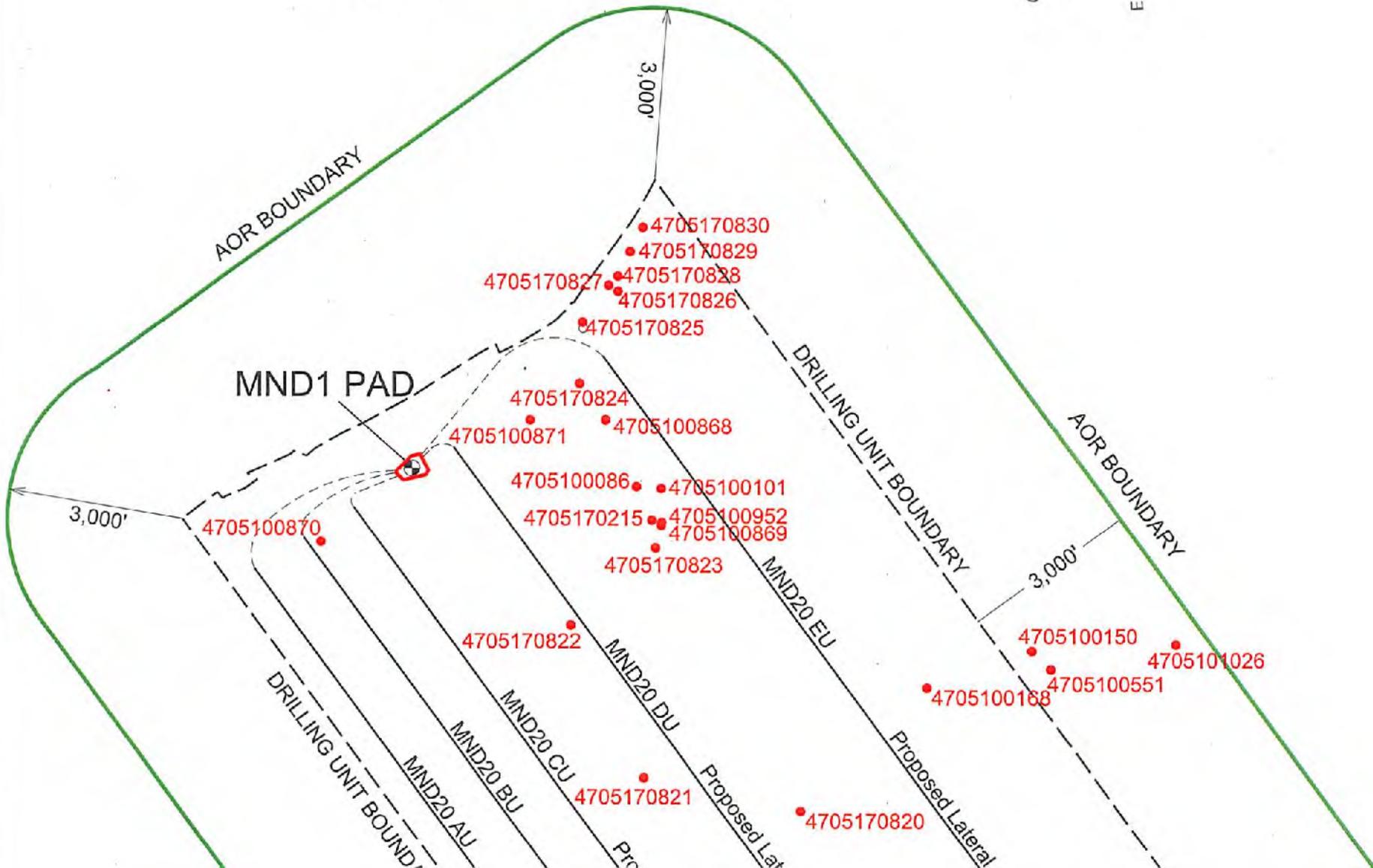
SI-02012

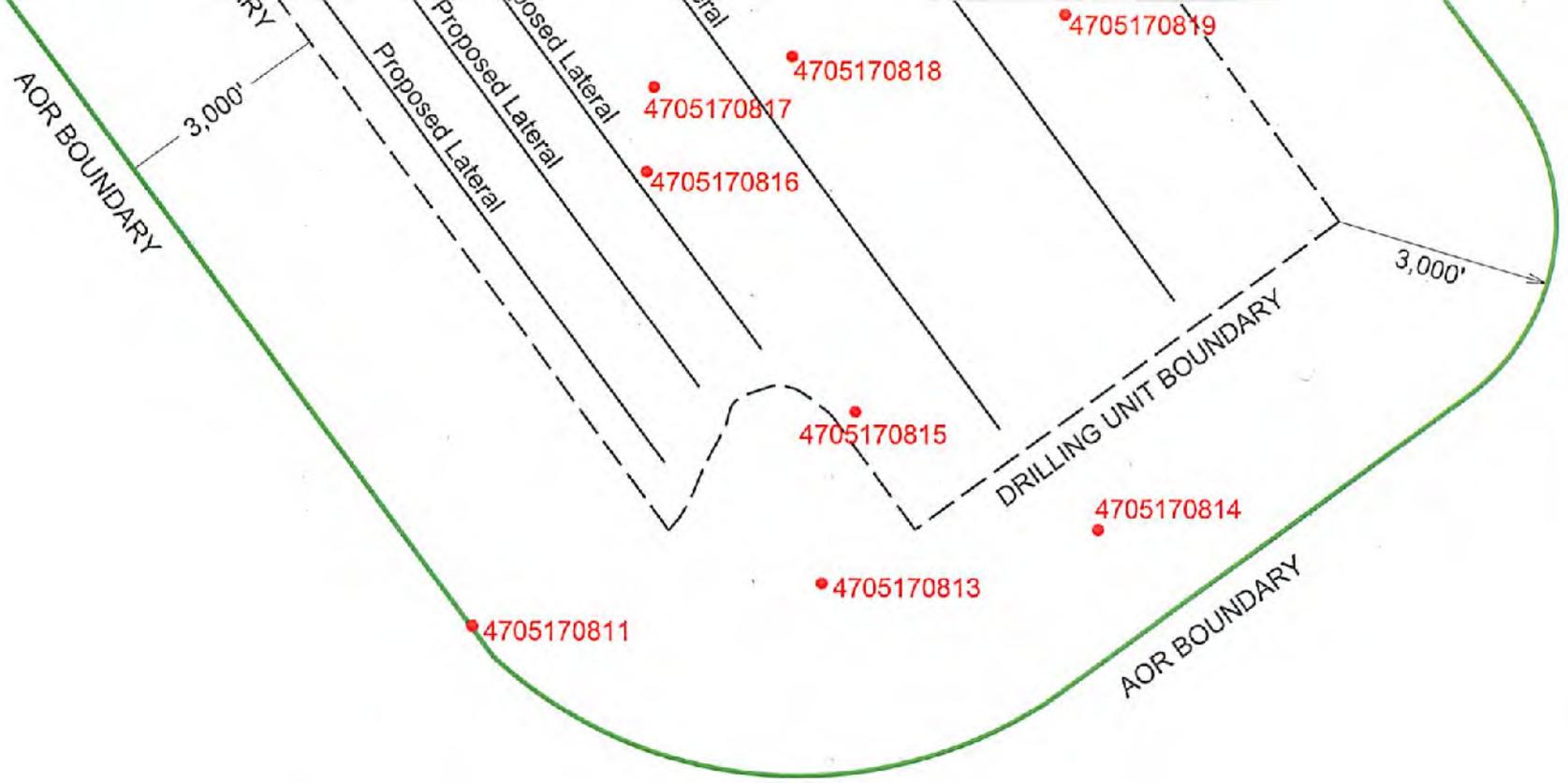


NOTE:
See Attached Spreadsheet for Well Data

DATA SOURCES:
WVGES Data Disk - 2017
WVDEP Web Site

RECEIVED
Office of Oil and Gas
FEB 16 2018
WV Department of
Environmental Protection





NOTE:
 NO KNOWN DEEP WELLS ARE LOCATED WITHIN 3,000'
 OF PROPOSED WELL BORES OR DRILLING UNIT.

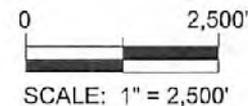


Area of Review for:

MND20 PAD

- MND20 AU Wellbore
- MND20 BU Wellbore
- MND20 CU Well bore
- MND20 DU Wellbore
- MND20 EU Wellbore

Franklin District, Marshall County, W.Va.



HG Energy II Appalachia, LLC
MND20 Well Pad (AU,BU,CU,DU,EU)
Cement Additives

Material Name	Material Type	Material Description	CAS #																		
Premium NE-1	Portland Cement	Premium NE-1 is a portland cement with early compressive strength properties.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Portland cement</td> <td>90 - 100</td> <td>65997-15-1</td> </tr> <tr> <td>Calcium oxide</td> <td>1 - 5</td> <td>1305-78-8</td> </tr> <tr> <td>Magnesium oxide</td> <td>1 - 5</td> <td>1309-48-4</td> </tr> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>0.1 - 1</td> <td>14808-60-7</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Portland cement	90 - 100	65997-15-1	Calcium oxide	1 - 5	1305-78-8	Magnesium oxide	1 - 5	1309-48-4	Crystalline silica: Quartz (SiO2)	0.1 - 1	14808-60-7			
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Magnesium oxide	1 - 5	1309-48-4																			
Crystalline silica: Quartz (SiO2)	0.1 - 1	14808-60-7																			
Bentonite	Extender	Commonly called gel, it is a clay material used as a cement extender and to control excessive free water.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Bentonite</td> <td>90 - 100</td> <td>1302-78-9</td> </tr> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>5 - 10</td> <td>14808-60-7</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Bentonite	90 - 100	1302-78-9	Crystalline silica: Quartz (SiO2)	5 - 10	14808-60-7									
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Calcium Chloride	Accelerator	A powdered, flaked or pelletized material used to decrease thickening time and increase the rate of strength development	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Calcium chloride</td> <td>90 - 100</td> <td>10043-52-4</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Calcium chloride	90 - 100	10043-52-4												
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Cello Flake	Lost Circulation	Graded (3/8 to 3/4 inch) cellophane flakes used as a lost circulation material.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>No hazardous ingredient</td> <td></td> <td></td> </tr> </tbody> </table>	Ingredient name	%	CAS number	No hazardous ingredient														
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FP-13L	Foam Preventer	FP-13L is a clear liquid organic phosphate antifoaming agent used in cementing operations. It is very effective minimizing air entrapment and preventing foaming tendencies of latex systems.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Tributyl phosphate</td> <td>90 - 100</td> <td>126-73-8</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Tributyl phosphate	90 - 100	126-73-8												
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Tributyl phosphate	90 - 100	126-73-8																			
Granulated Sugar	Retarder	Used to retard cement returns at surface. A proprietary product that provides expansive properties and improves bonding at low to moderate temperatures.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Sucrose</td> <td>90 - 100</td> <td>57-50-1</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Sucrose	90 - 100	57-50-1												
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Sucrose	90 - 100	57-50-1																			
EC-1	Gas Migration	Multi-purpose polymer additive used to control free fluid, fluid loss, rheology, and gas migration.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>No hazardous ingredient</td> <td></td> <td></td> </tr> </tbody> </table>	Ingredient name	%	CAS number	No hazardous ingredient														
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Poz (Fly Ash)	Base	A synthetic pozzolan, (primarily Silicon Dioxide). When blended with cement, Pozzolan can be used to create lightweight cement slurries used as either a filler slurry or a sulfate resistant completion cement.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>5 - 10</td> <td>14808-60-7</td> </tr> <tr> <td>Calcium oxide</td> <td>1 - 5</td> <td>1305-78-8</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Crystalline silica: Quartz (SiO2)	5 - 10	14808-60-7	Calcium oxide	1 - 5	1305-78-8									
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R-3	Retarder	A low temperature retarder used in a wide range of slurry formulations to extend the slurry thickening time.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Organic acid salt</td> <td>40 - 50</td> <td>Trade secret.</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Organic acid salt	40 - 50	Trade secret.												
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Organic acid salt	40 - 50	Trade secret.																			
S-5	Surfactant	Used to water wet casing and formation to facilitate cement bonding.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>2-Butoxyethanol</td> <td>20 - 30</td> <td>111-76-2</td> </tr> <tr> <td>Proprietary surfactant</td> <td>10 - 20</td> <td>Trade secret.</td> </tr> <tr> <td>D-Glucopyranose, oligomeric, C10-16 alkyl glycosides</td> <td>5 - 10</td> <td>110615-47-9</td> </tr> <tr> <td>Alkylarylsulfonate amine salt</td> <td>1 - 5</td> <td>Trade secret.</td> </tr> <tr> <td>Polyoxyalkylenes</td> <td>0.1 - 1</td> <td>Trade secret.</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	2-Butoxyethanol	20 - 30	111-76-2	Proprietary surfactant	10 - 20	Trade secret.	D-Glucopyranose, oligomeric, C10-16 alkyl glycosides	5 - 10	110615-47-9	Alkylarylsulfonate amine salt	1 - 5	Trade secret.	Polyoxyalkylenes	0.1 - 1	Trade secret.
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MND20BU
Macellus Shale Horizontal
Marshall County, WV

Ground Elevation		1058'		MND20BU SHL				494948.47N 1634085.19E															
Azm		144.906°		MND20BU LP				493830.2N 1632306.59E															
WELLBORE DIAGRAM		HOLE		CASING		GEOLOGY		TOP		BASE		MUD		CEMENT		CENTRALIZERS		CONDITIONING		COMMENTS			
30"	30" 157.5# LS	Conductor		0	60							AIR		N/A, Casing to be drilled in w/ Dual Rotary Rig		N/A		Ensure the hole is clean at TD.		Conductor casing = 0.5" wall thickness			
		Fresh Water			445, 708, 805							AIR		15.6 ppg PNE-1, Class A + 2.5% bwoc CaCl / 40% Excess Yield = 1.1924 / CTS		Centralized every 3 joints to surface		Once casing is at setting depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.		Surface casing = 0.438" wall thickness Burst=2110 psi			
26"	20" 94# J-55	Pinsburgh Coal		526	536							AIR		Lead: 15.0 ppg / Class A / 2.5% bwoc CaCl / 30% Excess / Yield=1.2853 Tail: 15.6 ppg / Class A / 2.5% bwoc CaCl / 30% Excess / Yield=1.18 CTS		Bow Spring on first 2 joints then every third joint to 100' form surface		Once casing is at setting depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.		Intermediate casing = 0.380" wall thickness Burst=2730 psi			
		Surface Casing		0	550							AIR											
		Big Lime		1625	1741									AIR									
17.5"	13-3/8" 54.5# J-85 BTC	Big injun		1741	1854							AIR											
		1st Intermediate Casing		0	2300									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		5th Sand		2599	3156									AIR / KCL Salt Polymer / 9.0ppg SOBM									
12.25"	9-5/8" 47# P-110 BTC	Speechley		3156	3770							AIR / KCL Salt Polymer / 9.0ppg SOBM											
		Warren		3770	4707									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Java		4707	4802									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Pipe Creek		4802	4889									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Angola		4889	5471									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Rhinestreet		5471	5792									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Cashaqua		5792	5954									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Middlesex		5854	5887									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		West River		5887	5948									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Burkett		5948	5973									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Tully LS		5973	5997									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Hamilton		5997	6032									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Marcellus		6032	6087									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Onondaga		6087	6095									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Huntersville		6095	6309									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Oriskany		6309	6421									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Holderburg		6421	6681									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Bass Island		6681	6750									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Salina G		6750	6950									AIR / KCL Salt Polymer / 9.0ppg SOBM									
		Salina F		6950	7759									AIR / KCL Salt Polymer / 9.0ppg SOBM									
Lockport		7759	8081									AIR / KCL Salt Polymer / 9.0ppg SOBM											
Rochester		8081	8385									AIR / KCL Salt Polymer / 9.0ppg SOBM											
Packer Shell		8385	8492									AIR / KCL Salt Polymer / 9.0ppg SOBM											
Clinton		8492	8575									AIR / KCL Salt Polymer / 9.0ppg SOBM											
Medina		8575	8874									AIR / KCL Salt Polymer / 9.0ppg SOBM											
Queenston		8874	9431									AIR / KCL Salt Polymer / 9.0ppg SOBM											
2nd Intermediate		0	9000 TVD 9303 MD									AIR / KCL Salt Polymer / 9.0ppg SOBM											
8.5" Curve and 8.5" Lateral	5-1/2" 23# P-110 HC CDC HTQ	Reedsville		9431	10049							10.5ppg-14.5ppg SOBM											
		Utica		10049	10652									10.5ppg-14.5ppg SOBM									
		Point Pleasant		10652	10752									10.5ppg-14.5ppg SOBM									
		Target		10700	10700									10.5ppg-14.5ppg SOBM									
Lead: 15.0 ppg / 35.65 Class H+0.75 gal/sk FP-13L+0.3%bwoc MPA-250+0.35% bwoc R3 / 20% Excess / Yield=1.1475 Tail: 15.6 ppg / Class H Acid Soluble=0.75 gal/sk FP-13L+0.5% bwoc MPA-250+0.2% bwoc R3+30% bwoc ASA301 / 20% Excess / Yield=1.7659 CTS		Run 1 spiral centralizer every 5 joints from the top of the curve to surface. Run 1 spiral centralizer every 3 joints from the 1st 8.5" long joint to the top of the curve.		Once on bottom/TD with casing, circulate at max allowable pump rate for at least 2x bottoms up, or until returns and pump pressures indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping cement.		Production casing = 0.381" wall thickness Burst=12640 psi Note: Actual centralizer schedules may be changed due to hole conditions																	

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JW/12/2018

LP @ 10700' TVD / 11533' MD 8.5" Hole - Cemented Long String 5-1/2" 23# P-110 HC CDC HTQ +-13900' ft Lateral TD @ +-10700' TVD +-25433' MD

HG Energy II Appalachia, LLC
List of Frac Additives by Chemical Name and CAS #
MND20 Well Pad (AU,BU,CU,DU,EU)

Chemical Name	CAS #	Multiple CAS #'s
Pro Shale Slik 405	Mixture	68551-12-2
		7647-14-5
		12125-02-9
		64742-47-8
Pro Hib II	Mixture	68412-54-4
		68607-28-3
		107-21-1
		111-76-2
		67-56-1
		107-19-7
Silica Sand and Ground Sand	Mixture	14808-60-7
		1344-28-1
		1309-37-1
		13463-67-7
Hydrochloric Acid 22 DEG BE	7647-01-0	
PROGEL - 4.5	64742-96-7	
BIO CLEAR 2000	Mixture	25322-68-3
		10222-01-2
SCALE CLEAR SI 112	107-21-1	
PROBREAK 4	Mixture	57-50-1
		107-21-1
Sulfamic Acid	5329-14-6	
PRO - Flow - 102-N	Mixture	67-63-0
		68439-45-2
		2687-96-9
PROGEL - 4	9000-30-0	

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WW-9
(4/16)

API Number 47 - _____ - _____
Operator's Well No. MND20 BU

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name HG Energy II Appalachia, LLC OP Code 494519932

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: NA

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 _____)
- Reuse (at API Number TBD - At 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 and freshwater

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

Additives to be used in drilling medium? Water, soap, KCl, barite

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

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

-Landfill or offsite name/permit number? See Attached List

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 Diane White

Company Official (Typed Name) Diane White

Company Official Title Accountant

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Environmental Protection

Subscribed and sworn before me this 26th day of January, 2018

Cassidy A. Boardman

Notary Public

My commission expires 7/31/2022



51-02012

Form WW-9

Operator's Well No. MND20 BU

HG Energy II Appalachia, LLC

Proposed Revegetation Treatment: Acres Disturbed 17.39 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch Hay 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5

**** Pre-seed and mulch all cut area, maintain E&S standards during entire operation.**

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Jim ...*

Comments: _____

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Title: Oil & Gas ...

Date: 2/5/18

WV Department of
Environmental Protection

Field Reviewed? Yes No

08/31/2018

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
Cochran, PA 16314
814-425-7773

Disposal Locations:

Apex Environmental, 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 #R90-079001 05-2010
4301 Sycamore Ridge Road
Hurricane, WV 25526
304-562-2611

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

Max Environmental 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-103-87 / WV 0109029
Rd 2 Box 410
Colliers, WV 26035
304-748-0014

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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 # 34-121-2-2458-00-00
 Select Energy Services, LLC
 7994 S. Pleasants Hwy
 St. Marys, WV 26170
 304-665-2652

OH UIC #1 Bu keye 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 # 47-001-00561
 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

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HG Energy II Appalachia, LLC

Site Safety Plan

MND 20 Well Pad
2795 Taylors Ridge Rd
Moundsville, Marshall County, WV

[Handwritten signature]
2/5/18

January 2018: Version 1

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

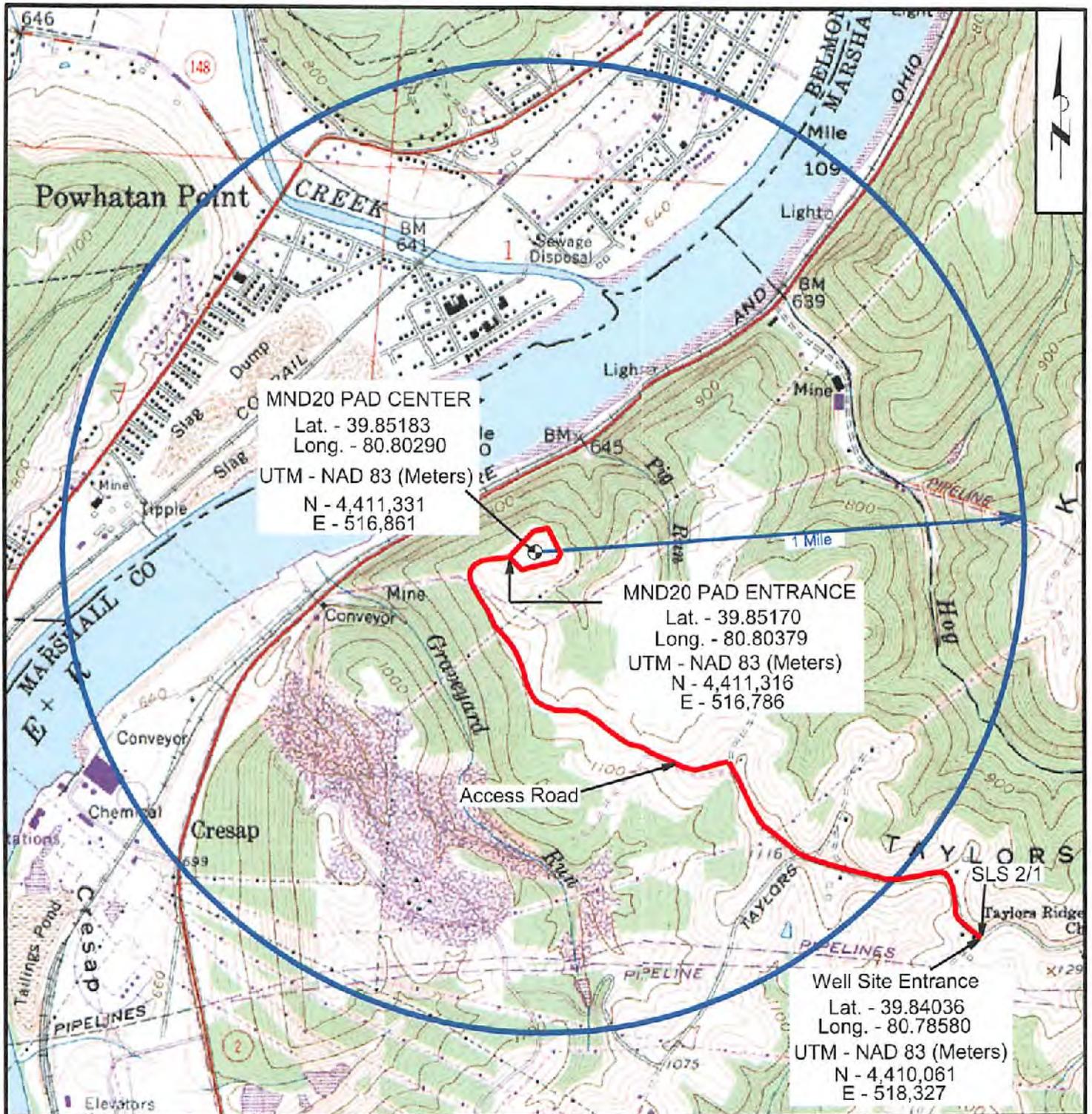
HG Energy II Appalachia, LLC.

5260 Dupont Road

Parkersburg, WV 26101

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WV Department of
Environmental Protection

08/31/2018



WELL SITE SAFETY PLAN FOR:

MND20 PAD

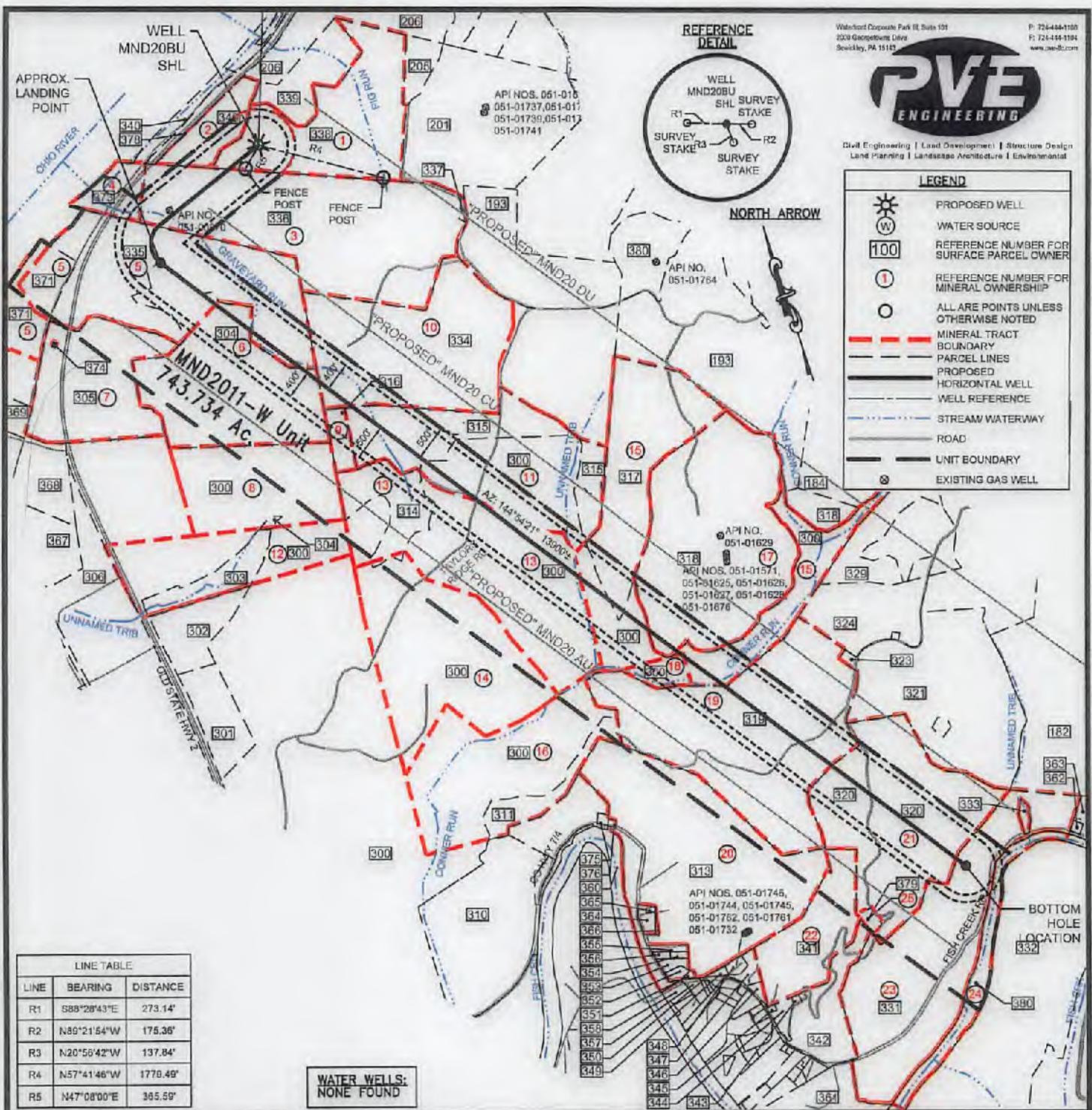
Franklin District, Marshall County, W.Va.

TOPOGRAPHIC MAP
 Powhatan Point 7.5' Quadrangle



SCALE: 1" = 1,500'





Waterford Deposits Park II, Suite 101
 2024 Georgetown Drive
 Sewickley, PA 15143
PVE
ENGINEERING
 Civil Engineering | Land Development | Structure Design
 Land Planning | Landscape Architecture | Environmental

FILE #: MND 20 BU
 DRAWING #: MND 20 BU
 SCALE: 1"=2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT H 136: 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: [Signature]
 R.P.E.: 21452 L.L.S.: P.S. NO. _____



(+) 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: SHORT CREEK-OHIO RIVER
 COUNTY/DISTRICT: MARSHALL / FRANKLIN
 SURFACE OWNER: CONSOLIDATION COAL COMPANY/ MURRAY ENERGY
 OIL & GAS ROYALTY OWNER: CNX GAS COMPANY

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: POINT PLEASANT
 WELL OPERATOR: HG ENERGY II APPALACHIA, LLC
 Address: 5280 DUPONT ROAD
 City PARKERSBURG State WV Zip Code 26101

DATE: AUGUST 19, 2015 - REV: MAY 4, 2018
 OPERATOR'S WELL #: MND 20 BU
 API WELL # 47 051 02012
 STATE COUNTY PERMIT
 H6A

ELEVATION: 1,058'
 QUADRANGLE: POWHATAN POINT, W. VA./OHIO
 ACREAGE: 70.55
 ACREAGE: 70.55

ESTIMATED DEPTH: TVD: 10,700' ± TMD: 25,434 ±
 DESIGNATED AGENT: DIANE C. WHITE
 Address: 5280 DUPONT ROAD
 City PARKERSBURG State WV Zip Code 26101

08/31/2018

Bottom Hole is located on topo map 5,741 feet south of Latitude: 39° 50' 00"

Well is located on topo map 8,517 feet south of Latitude: 39° 52' 30"

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 herein. 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.

Bottom Hole is located on topo map 8,590 feet west of Longitude: 80° 45' 00"
 Well is located on topo map 3,278 feet west of Longitude: 80° 47' 30"

SURFACE HOLE LOCATION (SHL)

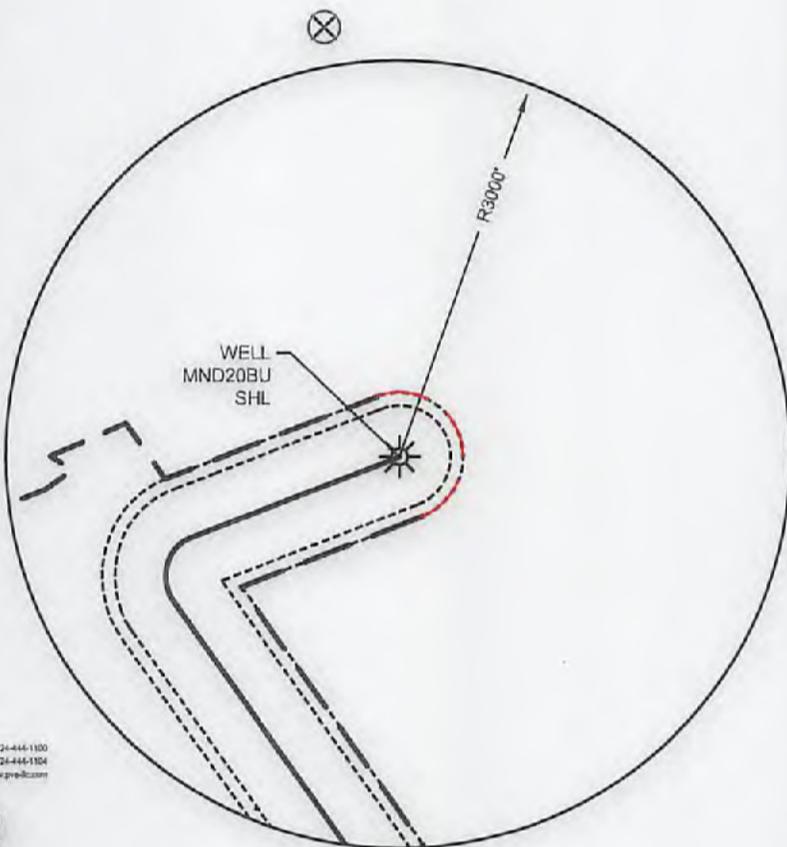
UTM 17 - NAD83
 N: 4411315.562
 E: 516839.101
 NAD27, WV NORTH
 N: 494948.390
 E: 1634085.046
 LAT/LON DATUM-NAD83
 LAT: 39.851695
 LON: -80.803153

APPROX. LANDING POINT

UTM 17 - NAD83
 N: 4410965.787
 E: 516302.969
 NAD27, WV NORTH
 N: 493830.034
 E: 1632306.603
 LAT/LON DATUM-NAD83
 LAT: 39.848554
 LON: -80.809429

BOTTOM HOLE LOCATION

UTM 17 - NAD83
 N: 4407541.537
 E: 518795.535
 NAD27, WV NORTH
 N: 482456.541
 E: 1640298.201
 LAT/LON DATUM-NAD83
 LAT: 39.817650
 LON: -80.780391



DETAIL:
 SCALE: 1"=1,500'

LEGEND

□ TOPO MAP POINT

⊗ TOPO MAP BOTTOM HOLE

Waterford Corporate Park II, Suite 101
 2000 Georgetown Drive
 Galloway, PA 15113

PVE ENGINEERING

Civil Engineering | Land Development | Structure Design
 Land Planning | Landscape Architecture | Environmental

FILE #: MND 20 BU

DRAWING #: MND 20 BU

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MINIMUM DEGREE OF ACCURACY: 1/2500

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SIGNED: [Signature]

R.P.E.: 21452 L.L.S.: P.S. NO. _____

JAMES MICHAEL VENTURE
 REGISTERED
 18788
 STATE OF WEST VIRGINIA
 PROFESSIONAL ENGINEER
 PLACE SEAL HERE

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



DATE: AUGUST 19, 2015 - REV: MAY 4, 2018

OPERATOR'S WELL #: MND 20 BU

API WELL # 47 051 02012 H6A

STATE COUNTY PERMIT

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

WATERSHED: SHORT CREEK-OHIO RIVER ELEVATION: 1,058'

COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA./OHIO

SURFACE OWNER: CONSOLIDATION COAL COMPANY/ MURRAY ENERGY ACREAGE: 70.55

OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 70.55

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

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WELL OPERATOR: HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT: DIANE C. WHITE

Address: 5260 DUPONT ROAD Address: 5260 DUPONT ROAD

City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

08/31/2018

182	AEP GENERATION RESOURCES, INC.	TAX MAP NO. 05-0005-0012-0000-0000	345	JOGNSON NORMAN G. ET. UX. - LIFE	TAX MAP NO. 05-008A-0034-0000-0000
184	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0012-0000-0000	346	BOARD OF EDUCATION	TAX MAP NO. 05-0008-0035-0000-0000
193	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0012-0000-0000	347	RUCKMAN LETHA I	TAX MAP NO. 05-008A-0013-0000-0000
201	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0005-0000-0000	348	RUCKMAN MARY D.	TAX MAP NO. 05-008A-0012-0000-0000
205	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0004-0000-0000	349	WHITE GLORIA JEAN	TAX MAP NO. 05-008A-0011-0000-0000
205	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0001-0000-0000	350	NOBEL ENERGY INC.	TAX MAP NO. 05-008A-0055-0000-0000
300	OHIO POWER CO.	TAX MAP NO. 05-0006-0003-0000-0000	351	WALLACE KEVIN W.	TAX MAP NO. 05-0008-0045-0000-0000
301	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0006-0005-0000-0000	352	GOLDY JOGN JOSEPH	TAX MAP NO. 05-0008-0048-0000-0000
302	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0006-0006-0000-0000	353	KLEM ANNE C.	TAX MAP NO. 05-0008-0047-0000-0000
303	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0016-0000-0000	354	PERSINGER CLAYTON LEE ET. UX.	TAX MAP NO. 05-0008-0049-0000-0000
304	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0013-0000-0000	355	PERSINGER CLAYTON LEE ET. UX.	TAX MAP NO. 05-0008-0050-0000-0000
305	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0010-0000-0000	356	SCOTT RAYMOND A. JR. & LARRIETTE	TAX MAP NO. 05-008A-0048-0000-0000
306	OHIO POWER CO.	TAX MAP NO. 05-0007-0005-0000-0000	357	VANSCYDD ISAAC LUKE	TAX MAP NO. 05-008A-0017-0000-0000
307	CNX GAS COMPANY LLC.	TAX MAP NO. 05-0007-0004-0000-0000	358	MORRIS JUNE	TAX MAP NO. 05-0008-0044-0000-0000
310	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0006-0004-0000-0000	359	UNITED STATES OF AMERICA NAVIGABLE WATERWAYS	
311	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0008-0002-0000-0000	360	NIEMAN FRANCES E.	TAX MAP NO. 05-0008-0004-0001-0000
313	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0006-0002-0000-0000	361	CLARK BEVERLY E.	TAX MAP NO. 05-0009-0001-0001-0000
314	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0006-0002-0000-0000	362	RUCKMAN SHELDON R. ET. AL.	TAX MAP NO. 05-0009-0001-0004-0000
315	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0002-0000-0000	363	CALVARY M. E. CHURCH & CEMETERY	TAX MAP NO. 05-0008-0052-0000-0000
316	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0001-0000-0000	364	CALVARY M. E. CHURCH & CEMETERY	TAX MAP NO. 05-0008-0053-0000-0000
317	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0001-0000-0000	365	CALVARY M. E. CHURCH & CEMETERY	TAX MAP NO. 05-0001-0015-0001-0000
318	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0002-0000-0000	366	OHIO POWER COMPANY	TAX MAP NO. 05-0001-0022-0000-0000
319	OHIO POWER CO.	TAX MAP NO. 05-0005-0003-0000-0000	367	OHIO POWER COMPANY	TAX MAP NO. 05-0001-0020-0000-0000
320	SANCHEZ GENEVA BASSETT	TAX MAP NO. 05-0005-0004-0000-0000	368	OHIO POWER COMPANY	TAX MAP NO. 05-0001-0021-0000-0000
321	OHIO POWER CO.	TAX MAP NO. 05-0005-0005-0000-0000	369	OHIO POWER COMPANY	TAX MAP NO. 05-0001-0014-0000-0000
322	AEP GENERATION RESOURCES INC.	TAX MAP NO. 05-0003-0003-0001-0000	370	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0011-0000-0000
323	AEP GENERATION RESOURCES INC.	TAX MAP NO. 05-0005-0006-0001-0000	371	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0024-0000-0000
324	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0008-0000-0000	372	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0007-0007-0000-0000
325	AEP GENERATION RESOURCES INC.	TAX MAP NO. 05-0005-0009-0000-0000	373	JACKSON NORMAN THOMAS ET. AL.	TAX MAP NO. 05-0007-0009-0000-0000
327	AEP GENERATION RESOURCES INC.	TAX MAP NO. 05-0005-0009-0002-0000	374	UNKNOWN	
328	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0009-0001-0000	375	ARRUDA JOHN F. ET. UX.	TAX MAP NO. 05-0005-0004-0001-0000
329	CONSOL. MINING COMPANY LLC.	TAX MAP NO. 05-0008-0005-0000-0000	376	WV DIVISION OF NATURAL RESOURCES	REFERENCE NO. Q-091980000
331	GATTS RICHARD L. - LIFE	TAX MAP NO. 05-0008-0007-0000-0000			
332	MILLER EDWIN C.	TAX MAP NO. 05-0005-0008-0000-0000			
333	GATTS RICHARD L. - LIFE	TAX MAP NO. 05-0002-0003-0000-0000			
334	MURRAY ENERGY CO LAND DEPT.	TAX MAP NO. 05-0001-0012-0000-0000			
335	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0010-0000-0000			
336	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0009-0000-0000			
337	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0003-0000-0000			
338	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0002-0000-0000			
339	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0002-0001-0000			
340	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0008-0003-0000-0000			
341	MITCHELL TAMMY L.	TAX MAP NO. 05-0008-0004-0000-0000			
342	BERKEFORD C. WAYNE	TAX MAP NO. 05-0008-0023-0000-0000			
343	SHIELDS ROBERT L. & DONALD				
344	SELLS JARED C.				

Waterford Corporate Park II, Suite 101
2025 Douglasville Blvd.
Savannah, GA 31413

P: 724-444-1120
F: 724-444-1124
www.pve-llc.com



Civil Engineering | Land Development | Structure Design
Land Planning | Landscape Architecture | Environmental

LEGEND	
100	REFERENCE NUMBER FOR SURFACE PARCEL OWNERS
1	REFERENCE NUMBER FOR MINERAL OWNERSHIP

FILE #: MND 20 BU
DRAWING #: MND 20 BU
SCALE: 1"=2000'
MINIMUM DEGREE OF ACCURACY: 1/2500
PROVEN SOURCE U.S.G.S. MONUMENT
OF ELEVATION: 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:
R.P.E.: 21452 L.L.S.: P.S. NO. _____



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



DATE: AUGUST 19, 2015 - REV: MAY 4, 2018
OPERATOR'S WELL #: MND 20 BU
API WELL # 47 051 02012 H6A
STATE COUNTY PERMIT

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

PAGE: 3 OF 4

WATERSHED: SHORT CREEK-OHIO RIVER ELEVATION: 1,058'
COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA./OHIO
SURFACE OWNER: CONSOLIDATION COAL COMPANY/ MURRAY ENERGY ACREAGE: 70.55
OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 70.55

08/31/2018

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: POINT PLEASANT ESTIMATED DEPTH: TVD: 10,700' ± TMD: 25,434±
WELL OPERATOR: HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT: DIANE C. WHITE
Address: 5260 DUPONT ROAD Address: 5260 DUPONT ROAD
City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

HG Plat Number	MPO	Royalty Owner	Surface Plat Number
①	05-0001-0003-0000-0000	Belinda Eddy, fka Belinda Page Hoover, a married woman dealing in her sole and separate property	338
		Dara Marner and Douglas D. Marner, both individually and as wife and husband	
		Jessica McNabb fka Jessica Faye Hoover, a married woman dealing in her sole and separate property	
		Cheryl Sullivan, a single woman	
		George H. Wells and Nancy Eklund Wells, both individually and as husband and wife	
		William C.M. Wilson and Hiram C. Wilson, as Trustees of The Nancy L. Wilson Revocable Trust	
		Wayland W. Bowser, a married man dealing in his sole and separate property	
		Barbara G. Mathews, by Gay L. Mathews, Her Attorney in Fact	
		HG Energy, LLC	
②	05-0001-0002-0001-0000	HG Energy, LLC	340
③	05-0001-0010-0000-0000	Ruth Ann Ferris	336
		Larry F. Jefferson	
		Noble Marcellus, LP	
		Anacapa Holdings, LLC	
		HG Energy, LLC	
④	05-0001-0011-0000-0000	HG Energy, LLC	373
⑤	05-0001-0012-0000-0000	Susan Witten Neal Meyers AKA Susan Neal Hefed Meyeres, individually, and as Susan N. Meyers, Trustee of the Susan N. Meyers Revocable Trust	335
	05-0001-0015-0000-0000	Mary Witten Neal Wiseman FKA Mary Witten Neal	
		Mary Witten Hart Ehlers	
		Margery J. Witten	
		Joseph Moore Neal	
		Jane Witten Voth	
		Frances Gale Neal	
		Dorothy Ann Neal by her POA Jerry L. Berthold	
		Donald R. Hart Jr.	
		Cathy Hart Price	
		Ann Alexander	
		Jene R. Peterselm AKA Jane Peterselm	
		HG Energy, LLC	
⑥	05-0001-0013-0000-0000	HG Energy, LLC	305
⑦	05-0001-0016-0000-0000	HG Energy, LLC	304
⑧	05-0006-0003-0000-0000	HG Energy, LLC	300
⑨	05-0002-0001-0000-0000	HG Energy, LLC	316
⑩	05-0002-0003-0000-0000	HG Energy, LLC	334
⑪	05-0002-0002-0000-0000	HG Energy, LLC	315
⑫	05-0006-0003-0000-0000	HG Energy, LLC	300
⑬	05-0006-0003-0000-0000	HG Energy, LLC	300
	05-0006-0002-0000-0000		
⑭	05-0006-0003-0000-0000	HG Energy, LLC	300
	05-0006-0002-0000-0000		
⑮	05-0006-0003-0000-0000	HG Energy, LLC	300
	05-0005-0003-0000-0000		317
⑯	05-0006-0003-0000-0000	HG Energy, LLC	300
	05-0006-0004-0000-0000		311
⑰	05-0005-0002-0000-0000	Margaret Games	318
		Elizabeth Patterson	
		Charles J. Wiesner	
		John Wiesner	
		Kenneth Schmitt	
		Mary Ellen Sedon	
		Alfred Kaczorowski, Jr., & Sharon M. Kaczorowski, his wife	
⑱	05-0005-0003-0000-0000	HG Energy, LLC	300
⑲	05-0005-0003-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	319

⑳	05-0008-0002-0000-0000	HG Energy, LLC	313
㉑	05-0005-0004-0000-0000	Barbara Kay Ewing and Wilber E. Ewing	320
		Charles Howard Bassett Jr. and Ruby D. Bassett	
		Cynthia P. Hopkins, as Trustee of the Cynthia P. Hopkins Revocable Trust	
		Elizabeth A. Strausbaugh and James R. Strausbaugh	
		Janet and John Blankenship	
		Jean C. Thomas	
		Mary E. Bassett	
		Robert B. and Violet Thomas	
		Roger B. and Inken P. Rose	
		Ruth Ann and Furman F. Wallace	
		Ruth E. Bassett Meadows and D.W. Meadows Jr	
		Geneva Bassett Sanchez	
㉒	05-0008-0003-0000-0000	Tammy L. Mitchell et vir	341
㉓	05-0008-0005-0000-0000	Richard J. Gatts	331
㉔	No Tract ID #	WV Division of Natural Resources	380
㉕	05-0005-0004-0001-0000	WV Division of Natural Resources	379

LEGEND	
100	REFERENCE NUMBER FOR SURFACE PARCEL OWNERS
①	REFERENCE NUMBER FOR MINERAL OWNERSHIP

FILE #: MND 20 BU
DRAWING #: MND 20 BU
SCALE: 1"=2000'
MINIMUM DEGREE OF ACCURACY: 1/2500
PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT H 138: 636.56'

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

SIGNED: [Signature]
R.P.E.: 21452 L.L.S.: P.S. NO. _____



(+) 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: SHORT CREEK-OHIO RIVER ELEVATION: 1,058'
COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA./OHIO
SURFACE OWNER: MURRAY ENERGY ACREAGE: 70.55
OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 70.55

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: POINT PLEASANT ESTIMATED DEPTH: TVD: 10,700' ± TMD: 25,434±
WELL OPERATOR: HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT: DIANE C. WHITE
Address: 5260 DUPONT ROAD Address: 5260 DUPONT ROAD
City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

DATE: AUGUST 19, 2015 - REV: MAY 4, 2018
OPERATOR'S WELL #: MND 20 BU
API WELL # 47 051 02012
STATE COUNTY PERMIT H6A

PAGE: 4 OF 4

08/31/2018

WW-6A1
(5/13)

Operator's Well No. MND20 BU

**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:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
-------------------------	-----------------------	-----------------------	---------	-----------

** See Attached **

**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

RECEIVED
Office of Oil and Gas

FEB 16 2018

WV Department of
Environmental Protection

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: HG Energy II Appalachia, LLC
 By: Diane White *Diane White*
 Its: Agent

HG Plat Number	MPID	Original Lessor	Original Lessee	Royalty	Book	Page
1)	05-0001-0003-0000-0000	Belinda Eddy fka Belinda Page Hoover, a married woman dealing in her sole and separate property	CNX Gas Company, LLC	Not less than 1/8	794	55
		Dara Marner and Douglas D. Marner, both individually and as wife and husband	CNX Gas Company, LLC	Not less than 1/8	794	43
		Jessica McNabb fka Jesica Faye Hoover, a married woman dealing in her sole and separate property	CNX Gas Company, LLC	Not less than 1/8	794	49
		Cheryl Sullivan, a single woman	CNX Gas Company, LLC	Not less than 1/8	794	46
		George H. Wells and Nancy Eklund Wells, both individually and as husband and wife	CNX Gas Company, LLC	Not less than 1/8	794	58
		William C.M. Wilson and Hiram C. Wilson, as Trustees of The Nancy L. Wilson Revocable Trust	CNX Gas Company, LLC	Not less than 1/8	800	626
		Wayland W. Bowser, a married man dealing in his sole and separate property	CNX Gas Company, LLC	Not less than 1/8	794	52
		Barbara G. Mathews, by Gay L. Mathews, Her Attorney in Fact CNX Gas Company, LLC	CNX Gas Company, LLC	Not less than 1/8	831	148
2)	05-0001-0002-0001-0000	Noble Energy, Inc.	HG ENERGY II	Fee	39	1
			APPALACHIA, LLC	Fee	39	1
3)	05-0001-0010-0000-0000	Ruth Ann Ferris	CNX Gas Company, LLC	Not less than 1/8	776	535
		Larry F. Jefferson	CNX Gas Company, LLC	Not less than 1/8	776	539
		Noble Marcellus, LP	Anacapa Holdings, LLC	Not less than 1/8	781	267
		Anacapa Holdings, LLC	Noble Energy, Inc.	Not less than 1/8	28	275

21020-15

		Consolidation Coal Company	CNX Gas Company, LLC	Fee	646	493
		CNX Gas Company, LLC	Noble Energy, Inc.	Fee	752	66
			HG ENERGY II			
		Noble Energy, Inc.	APPALACHIA, LLC	Fee	39	1
4)	05-0001-0011-0000-0000	Consolidation Coal Company	CNX Gas Company, LLC	Fee	646	493
		CNX Gas Company, LLC	Noble Energy, Inc.	Fee	752	66
			HG ENERGY II			
		Noble Energy, Inc.	APPALACHIA, LLC	Fee	39	1
5)	05-0001-0012-0000-0000	Susan Witten Neal Meyers AKA Susan Neal Ilfeld Meyeres, individually, and as Susan N. Meyers, Trustee of the Susan N. Meyers Revocable Trust	Noble Energy, Inc.	Not less than 1/8	789	538
	05-0001-0014-0000-0000	Mary Witten Neal Wiseman FKA Mary Witten Neal	Noble Energy, Inc.	Not less than 1/8	789	564
		Mary Witten Hart Ehlers	Noble Energy, Inc.	Not less than 1/8	789	552
		Margery J. Witten	Noble Energy, Inc.	Not less than 1/8	789	543
		Joseph Moore Neal	Noble Energy, Inc.	Not less than 1/8	789	545
		Jane Witten Voth	Noble Energy, Inc.	Not less than 1/8	789	559
		Frances Gale Neal	Noble Energy, Inc.	Not less than 1/8	789	536
		Dorothy Ann Neal by her POA Jerry L. Berthold	Noble Energy, Inc.	Not less than 1/8	789	547
		Donald R. Hart Jr.	Noble Energy, Inc.	Not less than 1/8	789	554
		Cathy Hart Price	Noble Energy, Inc.	Not less than 1/8	789	534
		Ann Alexander	Noble Energy, Inc.	Not less than 1/8	789	541
		Jane R. Peterseim AKA Jane Peterseim	CNX Gas Company, LLC	Not less than 1/8	781	37
		Consolidation Coal Company	CNX Gas Company, LLC	Fee	646	493
		CNX Gas Company, LLC	Noble Energy, Inc.	Fee	752	66

e10e0-15

		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	Fee	39	1
6)	05-0001-0013-0000-0000	Consolidation Coal Company CNX Gas Company, LLC	CNX Gas Company, LLC Noble Energy, Inc. HG ENERGY II	Fee Fee	646 752	493 66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
7)	05-0001-0016-0000-0000	Consolidation Coal Company CNX Gas Company, LLC	CNX Gas Company, LLC Noble Energy, Inc. HG ENERGY II	Fee Fee	646 752	493 66
		NOBLE ENERGY INC	APPALACHIA, LLC		39	1
8)	05-0006-0003-0000-0000	Consolidation Coal Company CNX Gas Company, LLC	CNX Gas Company, LLC Noble Energy, Inc. HG ENERGY II	Fee Fee	646 752	493 66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
9)	05-0002-0001-0000-0000	Consolidation Coal Company CNX Gas Company, LLC	CNX Gas Company, LLC Noble Energy, Inc. HG ENERGY II	Fee Fee	646 752	493 66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
10)	05-0002-0003-0000-0000	Consolidation Coal Company CNX Gas Company, LLC	CNX Gas Company, LLC Noble Energy, Inc. HG ENERGY II	Fee Fee	646 752	493 66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
11)	05-0002-0002-0000-0000 05-0006-0003-0000-0000	Consolidation Coal Company CNX Gas Company, LLC	CNX Gas Company, LLC Noble Energy, Inc. HG ENERGY II	Fee Fee	646 752	493 66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
12)	05-0006-0003-0000-0000	Consolidation Coal Company CNX Gas Company, LLC	CNX Gas Company, LLC Noble Energy, Inc. HG ENERGY II	Fee Fee	646 752	493 66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
13)	05-0006-0003-0000-0000 05-0006-0002-0000-0000	Consolidation Coal Company CNX Gas Company, LLC	CNX Gas Company, LLC Noble Energy, Inc. HG ENERGY II	Fee Fee	646 752	493 66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
14)	05-0006-0003-0000-0000	Consolidation Coal Company	CNX Gas Company, LLC	Fee	646	493

	05-0006-0002-0000-0000	CNX Gas Company, LLC	Noble Energy, Inc. HG ENERGY II	Fee	752	66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
15)	05-0006-0003-0000-0000	Consolidation Coal Company	CNX Gas Company, LLC	Fee	646	493
	05-0005-0001-0000-0000	CNX Gas Company, LLC	Noble Energy, Inc. HG ENERGY II	Fee	752	66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
16)	05-0006-0003-0000-0000	Consolidation Coal Company	CNX Gas Company, LLC	Fee	646	493
	05-0006-0004-0000-0000	CNX Gas Company, LLC	Noble Energy, Inc. HG ENERGY II	Fee	752	66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
17)	05-0005-0002-0000-0000	Margaret Games	CNX Gas Company, LLC	Not less than 1/8	763	441
		Elizabeth Patterson	CNX Gas Company, LLC	Not less than 1/8	763	437
		Charles J. Wiesner	CNX Gas Company, LLC	Not less than 1/8	763	429
		John Wiesner	CNX Gas Company, LLC	Not less than 1/8	763	433
		Kenneth Schmitt	CNX Gas Company, LLC	Not less than 1/8	763	421
		Mary Ellen Sedon	CNX Gas Company, LLC	Not less than 1/8	763	417
		Alfred Kaczorowski, Jr., & Sharon M. Kaczorowski, his wife	CNX Gas Company, LLC	Not less than 1/8	763	425
		CNX Gas Company, LLC	Noble Energy, Inc. HG ENERGY II		752	66
		NOBLE ENERGY INC	APPALACHIA, LLC		39	1
18)	05-0006-0003-0000-0000	Consolidation Coal Company	CNX Gas Company, LLC	Fee	646	493
		CNX Gas Company, LLC	Noble Energy, Inc. HG ENERGY II	Fee	752	66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
19)	05-0005-0003-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	Noble Energy, Inc.	Not less than 1/8	829	157

e1020-15

		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC		39	1
20)	05-0008-0002-0000-0000	Consolidation Coal Company	CNX Gas Company, LLC	Fee	646	493
		CNX Gas Company, LLC	Noble Energy, Inc.	Fee	752	66
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	Fee	39	1
21)	05-0005-0004-0000-0000	Barbara Kay Ewing and Wilber E. Ewing	NOBLE ENERGY INC	Not less than 1/8	842	34
		Charles Howard Bassett JR and Ruby D. Bassett	NOBLE ENERGY INC	Not less than 1/8	842	1
		Cynthia P. Hopkins, as Trustee of the Cynthia P. Hopkins Revocable Trust	NOBLE ENERGY INC	Not less than 1/8	841	366
		Elizabeth A. Strusbaugh and James R. Strausbaugh	NOBLE ENERGY INC	Not less than 1/8	841	370
		Janet and John Blankenship	NOBLE ENERGY INC	Not less than 1/8	841	368
		Jean C. Thomas	NOBLE ENERGY INC	Not less than 1/8	841	449
		Mary E. Bassett	NOBLE ENERGY INC	Not less than 1/8	841	362
		Robert B. and Violet Thomas	NOBLE ENERGY INC	Not less than 1/8	842	28
		Roger B. and Inken P. Rose	NOBLE ENERGY INC	Not less than 1/8	841	358
		Ruth Ann and Furman F. Wallace	NOBLE ENERGY INC	Not less than 1/8	841	364
		Ruth E. Bassett Meadows and O.W. Meadows Jr	NOBLE ENERGY INC	Not less than 1/8	842	38
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC		39	1
		Geneva Bassett Sanchez	Chevron USA INC	Not less than 1/8	814	399
		Chevron USA INC	HG ENERGY II APPALACHIA, LLC	Not less than 1/8	41	154
22)	05-0008-0003-0000-0000	Tammy L. Mitchell et vir	Noble Energy, Inc.	Not less than 1/8	816	176

51-02012

		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC		39	1
23)	05-0008-0005-0000-0000	Richard J. Gatts	Chevron USA INC	Not less than 1/8	899	479
		Chevron USA INC	HG ENERGY II APPALACHIA, LLC	Not less than 1/8	41	154
24)	No Tract ID #	WV Division of Natural Resources	Noble Energy, Inc.	Not less than 1/8	865	558
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC		39	1
25)	05-0005-0004-0001-0000	WV Division of Natural Resources	Noble Energy, Inc.	Not less than 1/8	829	157
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC		39	1



HG Energy, LLC
5260 Dupont Road
Parkersburg, WV 26101
(304) 420-1100 - Office
(304) 863-3172 - Fax

4705702012

January 23, 2018

Laura Adkins
WV DEP
Division of Oil & Gas
601 57th Street
Charleston, WV 25304

RE: Drilling Under Roads – MND20 BU
Franklin District, Marshall County
West Virginia

Dear Ms. Adkins:

HG Energy II Appalachia, LLC, 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 further information, please contact me at dwhite@hgenergyllc.com or 304-420-1119.

Very truly yours,

Diane White

Diane C. White

Enclosures

CC: Jim Nicholson - Inspector

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08/31/2018

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

Date of Notice Certification: 01/23/2018

API No. 47- _____ - _____
Operator's Well No. MND20 BU
Well Pad Name: MND20

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: <u>West Virginia</u>	UTM NAD 83 Easting: <u>516847.5</u>
County: <u>Marshall</u>	Northing: <u>4411324.4</u>
District: <u>Franklin</u>	Public Road Access: <u>SLS 2/1</u>
Quadrangle: <u>Powhatan Point</u>	Generally used farm name: <u>CONSOL</u>
Watershed: <u>Short Creek - Ohio River (HUC 10)</u>	

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.

<p>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:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
--	---

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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 noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

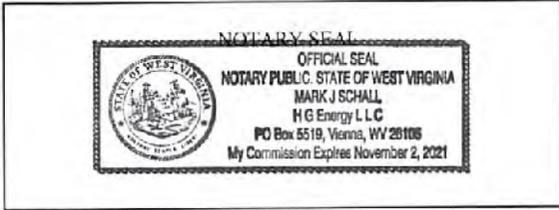
51-02012

WW-6AC
(1/12)

Certification of Notice is hereby given:

THEREFORE, I Diane White, 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:	<u>HG Energy II Appalachia, LLC</u>	Address:	<u>5260 Dupont Road</u>
By:	<u>Diane White <i>Diane White</i></u>		<u>Parkersburg, WV 26101</u>
Its:	<u>Agent</u>	Facsimile:	<u>304-863-3172</u>
Telephone:	<u>304-420-1119</u>	Email:	<u>dwhite@hgenergyllc.com</u>



Subscribed and sworn before me this 23rd day of January.

Mark J Schall Notary Public

My Commission Expires 11/2/2021

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.

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08/31/2018

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: 1/29/2018 **Date Permit Application Filed:** 2/09/2018

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 is hereby provided to:

SURFACE OWNER(s)
Name: Murray Energy Corporation - Alex O'Neill
Address: 46226 National Road
Saint Clairsville, OH 43950

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: _____
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: Same as Surface Owner
Address: _____

COAL OPERATOR
Name: _____
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: _____
Address: _____

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

*Please attach additional forms if necessary

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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 or 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.

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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

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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 in 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... (i) 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.**

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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> 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.

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Notice is hereby given by:

Well Operator: HG Energy II Appalachia, LLC Diane White
Telephone: 304-420-1119
Email: dwhite@hgenergyllc.com

Address: 5260 Dupont Road
Parkersburg, WV 26101
Facsimile: 304-863-3172

Oil and Gas Privacy Notice:

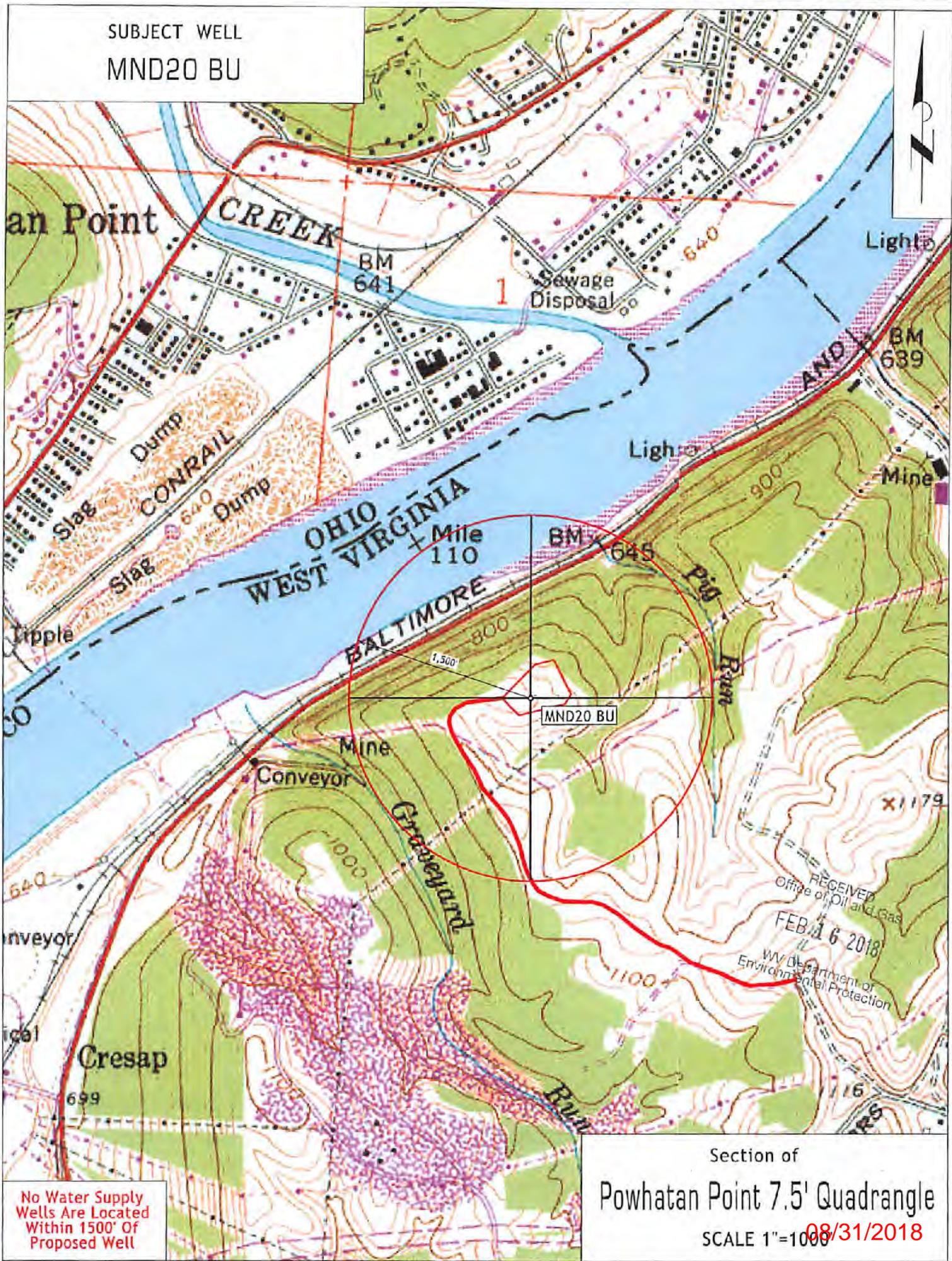
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory 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 deprivacyofficer@wv.gov.



Subscribed and sworn before me this 29th day of January, 2018.
[Signature] Notary Public
My Commission Expires 11/2/2021

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SUBJECT WELL
MND20 BU



No Water Supply Wells Are Located Within 1500' Of Proposed Well

Section of
Powhatan Point 7.5' Quadrangle
SCALE 1"=1000' 08/31/2018

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WV Department of Environmental Protection

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.

Date of Notice: 01/23/2018 **Date Permit Application Filed:** 02/06/2018

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

HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Murray Energy Corporation - Alex O'Neill
Address: 46226 National Road
Saint Clairsville, OH 43950

Name: _____
Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia UTM NAD 83 Easting: 516839.1
County: Marshall Northing: 4411315.6
District: Franklin Public Road Access: SLS 2/1
Quadrangle: Powhatan Point Generally used farm name: Consol
Watershed: Short Creek - Ohio River (HUC 10)

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. 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.

Notice is hereby given by:

Well Operator: HG Energy II Appalachia, LLC
Address: 5260 Dupont Road
Parkersburg, WV 26101
Telephone: 304-420-1119
Email: dwhite@hgenergyllc.com Diane White
Facsimile: 304-863-3172

Authorized Representative: Diane White
Address: 5260 Dupont Road
Parkersburg, WV 26101
Telephone: 304-420-1119
Email: dwhite@hgenergyllc.com
Facsimile: 304-863-3172

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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 depprivacvofficer@wv.gov.



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Jim Justice
Governor

Thomas J. Smith, P. E.
Secretary of Transportation/
Commissioner of Highways

July 28, 2017

James A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 5th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the MND-20 Well Pad, Marshall County

Dear Mr. Martin,

The West Virginia Division of Highways has transferred Permit #06-2012-0609 for the subject site to HG Energy, LLC. for access to the State Road for the well sites located off of Marshall County Route 2/1 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

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Cc: Diane White
H G Energy, LLC
CH, OM, D-6
File

HG Energy II Appalachia, LLC
List of Frac Additives by Chemical Name and CAS #
MND20 Well Pad (AU,BU,CU,DU,EU)

Chemical Name	CAS #	Multiple CAS #'s
Pro Shale Slik 405	Mixture	68551-12-2
		7647-14-5
		12125-02-9
		64742-47-8
Pro Hib II	Mixture	68412-54-4
		68607-28-3
		107-21-1
		111-76-2
		67-56-1
Silica Sand and Ground Sand	Mixture	14808-60-7
		1344-28-1
		1309-37-1
		13463-67-7
Hydrochloric Acid 22 DEG BE	7647-01-0	
PROGEL - 4.5	64742-96-7	
BIO CLEAR 2000	Mixture	25322-68-3
		10222-01-2
SCALE CLEAR SI 112	107-21-1	
PROBREAK 4	Mixture	57-50-1
		107-21-1
Sulfamic Acid	5329-14-6	
PRO - Flow - 102-N	Mixture	67-63-0
		68439-45-2
		2687-96-9
PROGEL - 4	9000-30-0	

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NOTES:

1. MAPPIING AND TOPOGRAPHY PREPARED BY: BLUE MOUNTAIN AERIAL MAPPING 11025 MASON BRUSH HIGHWAY BUTTERN WEST VIRGINIA 26062 P.O. BOX 10241 602-2823 FAX (204) 622-0501 DATE OF PHOTOGRAPHY: 8-18-14 SURROUND BYTOWN: 2 TNS
2. STATUSES SHOWN REPRESENT HORIZONTAL DISTANCE ALONG ALIGNMENTS.
3. WELL PER AREA - 10.4183 AC.
4. LIMIT OF DISTURBANCE - 17.29 ACRES.
5. PROPERTY LINE SHOWN PROVIDED BY OWNER. VERIFY.
6. FILL COMPACTED TO 95% OF STANDARD PROCTOR (ASTM D-1557). FILL WILL BE FREE OF DANGEROUS MATERIAL, HEAVIER LARGER THAN 6". ROCK LITE WILL BE NO GREATER THAN 30".

LEGEND

EXISTING

- EXISTING SPOT ELEVATION
- EXISTING UNDER CONTROL
- EXISTING WATER CHANNEL
- EXISTING STREAM
- EXISTING FENCE LINE
- EXISTING TIE
- EXISTING TRELLISE
- EXISTING GASLINE
- EXISTING UTILITY POLE
- EXISTING POWER AND TELEPHONE LINES
- EXISTING PIPELINE & MARKER
- PROPERTY LINE
- STREAM BUFFER
- SOIL BOUNDARY AND TYPE
- SURVEY CONTROL MONUMENT
- CLASSIFIED PERENNIAL 2' NEAR
- CLASSIFIED INTERMITTENT 5' NEAR
- CLASSIFIED EPHEMERAL 5' NEAR
- PEM DELUGED WETLAND
- PFD DELUGED WETLAND
- PLS DELUGED WETLAND

PROPOSED

- PROPOSED INDEX CONTOUR
- PROPOSED INTERIM CONTOUR
- LIMIT OF CUT
- LIMIT OF FILL
- LIMIT OF DISTURBANCE
- NEW TREE LINE
- CONVERSE FILTER SOCK
- STONE STABILIZATION
- TRUSS CONTROL MARKER
- COLLECTION CHANNEL
- DRAINAGE PIPE
- ROCK APRON
- PILE DIRECTION

AQUATIC IMPACTS

- WETLAND 0.01 AC
- PERENNIAL STREAM 0 L.F.
- INTERMITTENT STREAM 0 L.F.
- EPHEMERAL STREAM 103 L.F.

SCALE IN FEET

0 50 100 150 200 250

WELL NUMBER	WVDEP-N	WVDEP-S	WVDEP-N	WVDEP-N	WVDEP-N	WVDEP-N	WVDEP-N	WVDEP-N	WVDEP-N	UTM-NAD-83	UTM-NAD-83	UTM-NAD-83	UTM-NAD-83
	LATITUDE	LONGITUDE	NORTHING	EASTING	EASTING	EASTING	EASTING	EASTING	EASTING	NORTHING (M)	EASTING (M)	NORTHING (M)	EASTING (M)
WV120-1	38.25176067	80.82297473	43995.190	36097.138	36.83166211	83.81320444	83980.843	144479.827	41111.5169	51688.232	841207.497	51688.232	841207.497
WV120-2	38.25081866	80.82258167	43998.699	36075.265	37.02101111	83.82219544	83982.790	143911.800	41111.5169	51688.232	841207.497	51688.232	841207.497
WV120-3	38.25174444	80.82295167	43993.919	36075.898	37.84160247	83.82120444	83982.670	143811.280	41111.5169	51688.232	841207.497	51688.232	841207.497
WV120-4	38.25173500	80.82210188	43995.819	36061.875	39.45155723	83.81319544	83982.730	143409.320	41111.5169	51688.232	841207.497	51688.232	841207.497
WV120-5	38.25170178	80.82210188	43989.539	36061.875	39.33161000	83.82219544	83982.730	143409.320	41111.5169	51688.232	841207.497	51688.232	841207.497
ROAD ELEVANCE	38.25150628	80.72210178	439715.487	36049.025	39.89448179	83.79537545	40281.135	163242.343	41106.6241	51700.078	841211.020	51700.078	841211.020
WELL PAD CENTER	38.25130000	80.82292000	43983.841	36027.2017	39.82151497	83.82219544	83982.732	143417.796	41111.5169	51688.232	841207.497	51688.232	841207.497

APPROVED
WVDEP OOG

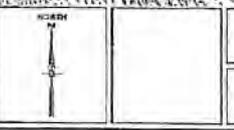
2/23/18 3/13/2018



REVISIONS

NO.	BY	DATE	DESCRIPTION
1	J.B.H.	02/08/18	ISSUED FOR CONSTRUCTION

REVISIONS	DATE	BY
REVISIONS	DATE	BY



HQ ENERGY II, APPALACHIA LLC
PARKERSBURG, WEST VIRGINIA

Michael Baker INTERNATIONAL
MICHAEL BAKER INTERNATIONAL
CONSULTING ENGINEERS
MOON TOWNSHIP, PENNSYLVANIA



MND 20 CONSTRUCTION PLANS
EROSION AND SEDIMENTATION
CONTROL PLAN

TRANSPORTS DISTRICT
MARSHALL COUNTY, WEST VIRGINIA

WVDEP AS SHOWN DATE: FEBRUARY 2018

SHEET NO. **8**
OF 30

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