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west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Tuesday, January 29, 2019  
WELL WORK PERMIT  
Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC  
5260 DUPONT ROAD  
PARKERSBURG, WV 26101

Re: Permit approval for NAYS 1209 N-2H  
47-033-05935-00-00

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: NAYS 1209 N-2H  
Farm Name: HG ENERGY II APPALACHIA, LLC  
U.S. WELL NUMBER: 47-033-05935-00-00  
Horizontal 6A New Drill  
Date Issued: 1/29/2019

# 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

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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.

API Number: \_\_\_\_\_

## 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](mailto:DEPOOGNotify@wv.gov).



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

Austin Caperton, Cabinet Secretary  
dep.wv.gov

**ORDER  
ISSUED UNDER  
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 6A**

TO: HG Energy II Appalachia, LLC  
5260 Dupont Road  
Parkersburg, WV 26101

DATE: October 16, 2018  
ORDER NO.: 2018-W-9

**INTRODUCTION**

This Order (hereinafter "Order") is issued by the Office of Oil and Gas (hereinafter "OOG"), by and through its Chief, pursuant to the authority of W. Va. Code §§ 22-1-1, 22-6-1 and 22-6A-1 *et seq.* to HG Energy II Appalachia, LLC (hereinafter "HG" or "Operator"), collectively the "Parties."

**FINDINGS OF THE CHIEF**

In support of this Order, the Chief hereby finds the following:

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. HG is a "person" as defined by W. Va. Code §22-6-1(n), with a corporate address as 5260 Dupont Road Parkersburg, WV 26101.
3. On June 18, 2018 HG submitted a well work permit application identified as API# 47-033-05930. The proposed well is to be located on the Nays 1209 Pad in Union District of Harrison County, West Virginia.
4. On June 18, 2018 HG requested a waiver for the perennial stream West Fork River and Wetlands A, D and Z outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-033-05930. Wetland A, D and Z will be excluded from this waiver since they are situated more than 100' from of the limits of disturbance of the well pad.

## CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “in addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to... (3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
3. West Virginia Code §22-6A-12(b) requires, in part, that “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 Office of Oil and Gas 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 Office of Oil and Gas 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.”

## ORDER

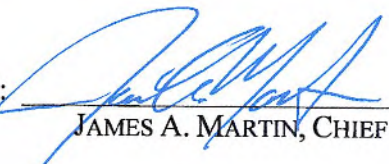
West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland. The Office of Oil and Gas grants the request for a waiver for the perennial stream West Fork River from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-033-05930. The Office of Oil and Gas hereby **ORDERS** that HG shall meet the following site construction and operational requirements for the Nays 1209 Well Pad:

- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. Perennial stream West Fork River shall have triple stacked eight inch (8”) compost filter sock to prevent sediment from reaching the stream. This along with rip-rap aprons, temporary and permanent vegetative cover will prevent sediment from reaching the stream.
- d. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- e. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- f. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- g. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- h. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- i. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- j. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- k. All records from inspections shall be maintained on site for the life of the project and be available upon request.

Thus ORDERED, the 16th day of October, 2018.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

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

By:   
JAMES A. MARTIN, CHIEF









11/3/14

Wetland and Perennial Stream Waiver Request

API Number: \_\_\_\_\_

Operator's Well Number: Nays 1209 N-1H

Well Operator: HG Energy II Appalachia, LLC

Well Number: Nays 1209 N-1H

Well Pad Name: Nays 1209 Pad

County, District, Quadrangle of Well Location: Harrison County, Union District, West Milford Quad

**Answer the questions below to request a waiver from West Virginia Department of Environmental Protection for any wetlands or perennial streams which lie within one hundred feet of proposed project Limit of Disturbance (LOD), which includes any erosion and sediment control devices to be used.**

**This waiver shall be requested pursuant to Chapter 22 Article 6A Section 12 of West Virginia Code, which states:**

§22-6A-12(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.

§22-6A-12(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.

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: \_\_\_\_\_

Operator's Well Number: Nays 1209 N-1H

**Answer in the space provided, or use additional pages as necessary to fully answer the questions below:**

- 1. Describe the proposed project location, including unique identifying names of all wetlands, and the names of perennial streams for which the waiver is sought.**

The project lies south of Kincheloe Run Road. Perennial watercourses for which the waiver is sought include the West Fork River. Wetlands for which the waiver is sought include Wetland A, Wetland D, and Wetland Z.

- 2. Justify the proposed activity by describing alternatives to this project that were considered.**

- a. Include a No-Action Alternative as to show "the future without the project"
  - b. Location Alternatives must be shown
  - c. Must demonstrate why a one hundred foot buffer cannot be maintained
  - d. Describe how the proposed project is the least environmentally damaging practicable alternative
- a. The No-Action Alternative for this site is the HG 1209 well pad not being constructed. This results in HG not utilizing acquired assets, and landowners not receiving anticipated compensation for leased land.
- b. See attached Figure 1. Location to North was evaluated, but was determined to be of insufficient size for required HG 1209 well pad sizing.
- c. One hundred foot buffer to stream cannot be maintained due to construction limits required to construct the HG 1209 well pad. The site is limited to the North by the DOH permit 30' ROW. The site is limited to the East, South, and West by the historic 100 year floodplain.
- d. The proposed HG 1209 well pad is the least environmentally damaging practicable alternative as it avoids all wetlands, does not require any tree removal, and does not disturb any riparian buffers.



11/3/14

Wetland and Perennial Stream Waiver Request

API Number: \_\_\_\_\_

Operator's Well Number: Nays 1209 N-1H

- 3. Identify sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. This description should include all additional erosion and sediment control measures and devices that will be used.**

The contractor shall delineate sensitive areas, LOD, and shall install barriers where equipment may not be parked, stage, operated, or located for any purpose before construction activities commence. E&S controls will be installed as necessary during initial site access to minimize accelerated erosion and sedimentation. Perimeter controls (compost filter sock) shall be installed immediately after the site is accessed. Land clearing and grading shall commence only after all downslope E&S controls have been constructed and stabilized. E&S controls shall be maintained during all construction activities. Upon completion of construction, stabilization will be provided including seeding & mulching. Temporary controls shall be removed only once the site is stabilized. A 2' berm will be constructed around the pad to capture any discharges. A french drain will be installed on the perimeter of the pad to capture any runoff from the well pad surface. The french drain consists of 6" perforated HDPE pipe, with an impermeable liner surrounding the backfill. The french drain will flow to three catch basins located on the pad. The basins outlet through HDPE pipes with gate valves installed. The valves shall be closed during any drilling activity or operations, and no discharge from the pad shall occur during drilling activities.

- 4. Provide mapping, plans, specifications and design analysis for the preferred alternative to the project.**

- a. Specify in writing what additional controls, measures, devices, monitoring, etc. will be used to protect these wetlands and/or perennial streams for which the waiver is sought.

See attached HG 1209 Pad & Impoundment Drawing Set. The 100 foot stream buffer shall be delineated by the contractor. Efforts shall be made to limit the amount of earth disturbance within the 100 foot buffer. All E&S controls shall be inspected on a regular basis. Damaged or improperly functioning E&S controls shall be replaced immediately.



WW-6B  
(04/15)

API NO. 47- \_\_\_\_\_ - \_\_\_\_\_  
OPERATOR WELL NO. Nays 1209 N-2H  
Well Pad Name: Nays 1209

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.P. 494519932 Harrison Union West Milford 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Nays 1209 N-2H Well Pad Name: Nays 1209

3) Farm Name/Surface Owner: Nays / HG Energy II Appalachia Public Road Access: Kincheloe Run Rd/SLS 35

4) Elevation, current ground: 1002' Elevation, proposed post-construction: 1007'

5) Well Type (a) Gas  Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_

Other \_\_\_\_\_

(b) If Gas Shallow  Deep \_\_\_\_\_

Horizontal  \_\_\_\_\_

6) Existing Pad: Yes or No No

*SOW  
10/22/2018*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus at 6863'/6914' and 51' in thickness. Anticipated pressure at 4314#.

8) Proposed Total Vertical Depth: 6900'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 20,911'

11) Proposed Horizontal Leg Length: 13,328'

12) Approximate Fresh Water Strata Depths: 135', 500'

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

14) Approximate Saltwater Depths: None noted in offsets

15) Approximate Coal Seam Depths: 660' to 665'

16) Approximate Depth to Possible Void (coal mine, karst, other): None

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: \_\_\_\_\_  
Depth: \_\_\_\_\_  
Seam: \_\_\_\_\_  
Owner: \_\_\_\_\_

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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	100'	100'	Drilled In
Fresh Water	20"	NEW	J-55	94	600'	600'	40% excess yield = 1.20, CTS
Coal	13 3/8"	NEW	J-55	54.5	1635'	1635'	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	NEW	J-55	40	2500'	2500'	40% excess yield Lead/ 0% Excess Tail CTS
Production	5 1/2"	NEW	P-110	23	20911'	20911'	20% excess yield = 1.19, tail yield = 1.00
Tubing							
Liners							

*SDW  
10/22/2018*

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"	.500				CTS
Fresh Water	20"	24"	.438	2110	1200	Type 1, Class A	30 % excess yield = 1.20, CTS
Coal	13 3/8"	17 1/2"	.380	2730		Type 1/Class A	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	12 1/4"	.395	3950		Type 1/Class A	40% excess yield = 0% Excess Lead, 40% Excess Tail
Production	5 1/2"	8 1/2"	.415	14520	12500	Type 1/Class A	20% excess yield = 1.19, tail yield = 1.00
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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

Drill the vertical depth to the Marcellus at an estimated total vertical depth of approximately 6900 feet. Drill horizontal leg to estimated 13328 TMD, stimulate and be capable of producing from the Marcellus Formation. Should we encounter an unanticipated void in the coal, 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 completed with multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals. See attached list. Maximum pressure not to exceed 12,500 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 16.148 acres

22) Area to be disturbed for well pad only, less access road (acres): 10.834 acres

23) Describe centralizer placement for each casing string:

No centralizers will be used with conductor casing.  
Freshwater - centralized every 3 joints to surface.  
Coal - Bow Spring on every joint  
Intermediate - Bow Spring on first 2 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.

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

Conductor - N/A, Casing to be drilled in w/ Dual Rotary Rig.  
Fresh Water - 15.6 ppg PNE-1 + 3% bwoc CaCl, 40% Excess Yield = 1.20, CTS  
Coal - Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl, 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl zero% Excess, CTS  
Intermediate - Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl, 40% Excess, Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl, zero% Excess, CTS  
Production - Lead: 14.5 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MPA170, Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA17020% Excess Lead Yield=1.19 Tail Yield=1.94, CTS

25) Proposed borehole conditioning procedures:

Conductor - Ensure the hole is clean at TD.  
Fresh Water - Once casing is at setting depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.  
Coal - Once casing is at setting depth, circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.  
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.

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\*Note: Attach additional sheets as needed.

**Nays 1209 Well Pad (N-1H to N-6H, S-7H to S-12H)**

**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 (SiO<sub>2</sub>)</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 (SiO <sub>2</sub> )	0.1 - 1	14808-60-7			
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Crystalline silica: Quartz (SiO <sub>2</sub> )	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 (SiO<sub>2</sub>)</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 (SiO <sub>2</sub> )	5 - 10	14808-60-7									
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Crystalline silica: Quartz (SiO <sub>2</sub> )	5 - 10	14808-60-7																			
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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Calcium chloride	90 - 100	10043-52-4																			
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												
			Ingredient name	%	CAS number																
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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EC-1	Retarder	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>Calcium magnesium oxide</td> <td>90 - 100</td> <td>37247-91-9</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Calcium magnesium oxide	90 - 100	37247-91-9												
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MPA-170	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														
			Ingredient name	%	CAS number																
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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 (SiO<sub>2</sub>)</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 (SiO <sub>2</sub> )	5 - 10	14808-60-7	Calcium oxide	1 - 5	1305-78-8									
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Calcium oxide	1 - 5	1305-78-8																			
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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1209 N-2H  
Marcellus Shale Horizontal  
Harrison County, WV

1209 N-2H SHL

237364.97N 1732373.55E

Ground Elevation

1007' WVA Department of Environmental Protection

1209 N-2H LP

237362.83N 1730903.7E

Azm

341.493°

1209 N-2H BHL

250001.47N 1726673.04E

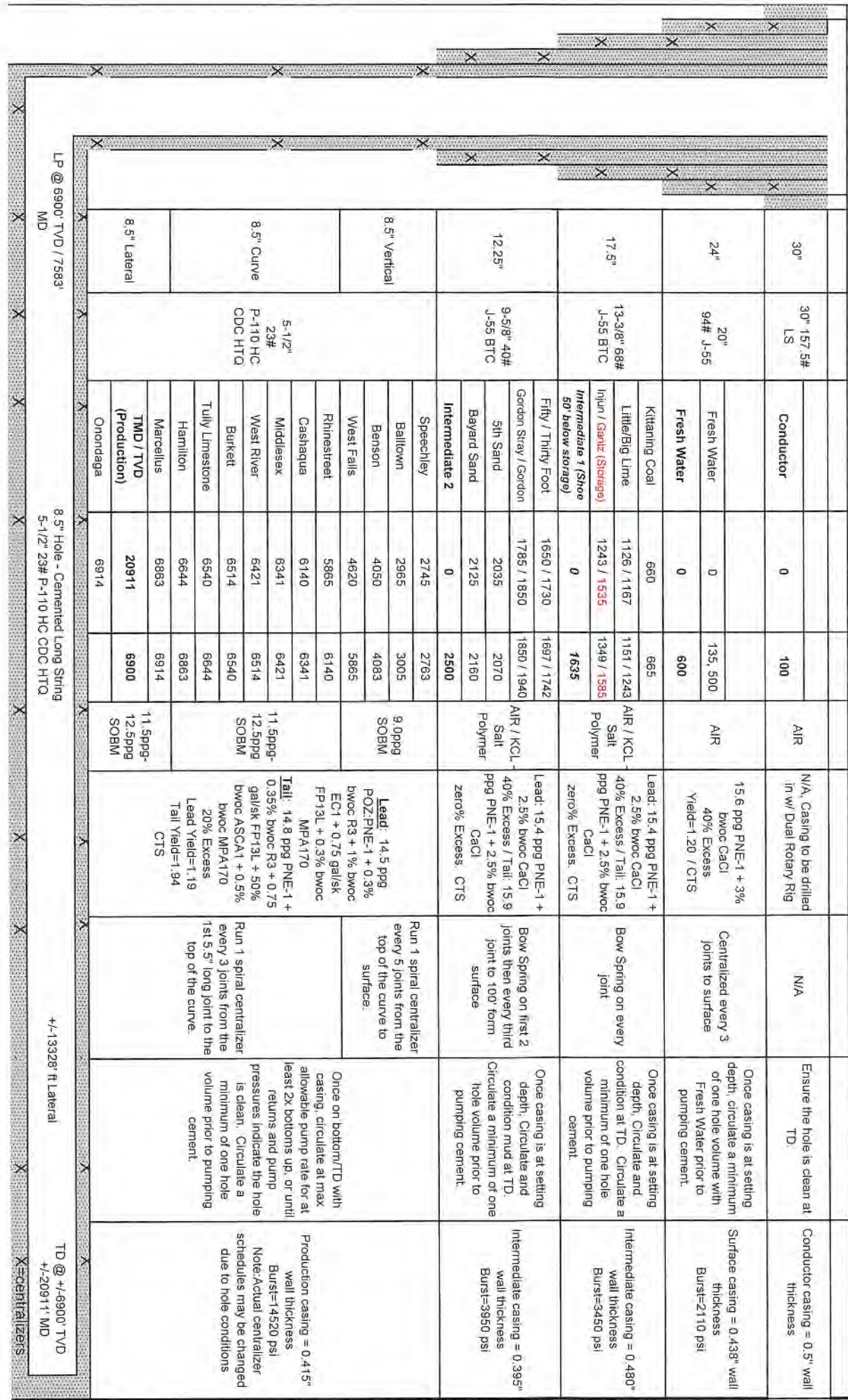
WELLBORE DIAGRAM	HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS
	30"	30" 157.5# LS	Conductor	0	100	AIR	N/A. Casing to be drilled in w/ Dual Rotary Rig	N/A	Ensure the hole is clean at TD.	Conductor casing = 0.5" wall thickness
	24"	20" 94# J-55	Fresh Water Fresh Water	0 0	135, 500 600	AIR	15.6 ppg PNE-1 + 3% bwoc CaCl 40% Excess Yield=1.20 / 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
	17.5"	13-3/8" 68# J-55 BTC	Kittanning Coal Little/Big Lime Injurn / Ganix (Storage) Intermediate 1 (Shoe 60' below storage)	660 1126 / 1167 1243 / 1535 0	665 1151 / 1243 1349 / 1585 1635	AIR / KCL Salt Polymer	Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl zero% Excess. CTS	Bow Spring on every joint	Once casing is at setting depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.480" wall thickness Burst=3450 psi
	12.25"	9-5/8" 40# J-55 BTC	Fifty / Thirty Foot Gordon Stray / Gordon 5th Sand Bayard Sand	1650 / 1730 1785 / 1850 2035 2125	1697 / 1742 1880 / 1940 2070 2160	AIR / KCL Salt Polymer	Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl zero% Excess. CTS	Bow Spring on first 2 joints then every third joint to 100' from surface	Once casing is at setting depth, Circulate and condition mud at TD. Circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.395" wall thickness Burst=3950 psi
	8.5" Vertical	5-1/2" 23# P-110 HC CDC HTD	Speechley Balltown Benson West Falls Rhinesstreet Cashagua Middlesex West River Burkett Tully Limestone Hamilton Marcellus	2745 2965 4050 4620 5865 6140 6341 6421 6421 6514 6540 6644 6863	2763 3005 4083 5865 6140 6341 6421 6514 6644 6863	9.0ppg SOBM SOBM	Lead: 14.5 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MP1A170 Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MP1A170 20% Excess Lead Yield=1.19 Tail Yield=1.94 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 5.5' 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 = 0.415" wall thickness Burst=14920 psi Note: Actual centralizer schedules may be changed due to hole conditions
	8.5" Lateral		Onondaga	6914		11.5ppg-SOBM				

LP @ 6900' TVD / 7583' MD

8.5" Hole - Cemented Long String  
5-1/2" 23# P-110 HC CDC HTD

+/-13328' ft Lateral

TD @ +/-6900' TVD  
+/-20911' MD



**List of Frac Additives by Chemical Name and CAS #**

**Nays 1209 Well Pad (N-1H to N-6H, S-7H to S-12H)**

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. Nays 1209 N-2H

**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 494501907

Watershed (HUC 10) West Fork Quadrangle West Milford 7.5'

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 \_\_\_\_\_)

*SDW  
11/22/2018*

Will closed loop system be used? If so, describe: Yes, cuttings and fluids will be collected in a closed loop drilling system, re-used or hauled to an approved disposal site or landfill.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air, Freshwater and SOB M

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

Additives to be used in drilling medium? Water, Soap, KCl, Barite, Base Oil, Wetting Agents

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

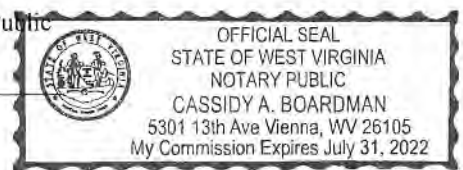
Company Official Title Agent

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Subscribed and sworn before me this 19th day of October, 20 18

Cassidy A. Boardman Notary Public

My commission expires 7/31/2022



**HG Energy II Appalachia, LLC**

Proposed Revegetation Treatment: Acres Disturbed 16.148 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
Tall Fescue	40
Ladino Clover	5

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5

**Maintain E&S controls through the drilling and completion process**

**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: SEP D WARD

Comments: Pre-seed/mulch as soon as reasonably possible per regulation.

Upgrade E&S if needed per WV DEP E&S manual.

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Title: Oil & Gas Inspector

Date: 10/19/2018

Field Reviewed?  Yes  No



## Cuttings Disposal/Site Water

### Cuttings -Haul off Company:

Eap Industries, Inc. DOT # 0876278  
1875 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)  
8237 US Highway 19  
Cochranston, PA 16314  
814-425-7773

### Disposal Locations:

Apex Environmental, LLC Permit # 06-08488  
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 #R80-079001 05-2010  
4301 Sycamore Ridge Road  
Hurricane, WV 25526  
304-562-2511

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 # SWP-103-87 / WV 0109029  
Rd 2 Box 410  
Collfers, WV 26035  
304-748-0014

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Wetzel County Landfill Permit # SWF-1021-97 / WV 0109185  
Rt 1, Box 158A  
New Martinsville, WV 26035  
804-455-3800

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

Energy Solutions Services, Inc. Permit # R-73006-L24  
1550 Bear Creek Road  
Oak Ridge, TN 37830

Northern A-1 Environmental Services Permit ID MIP020906814  
3947 US 131 North, PO Box 1030  
Kalkaska, MI 49646  
231-258-9961

**Water Haul off Companies:**

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

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

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

Nuverra Environmental Solutions  
11942 Veterans Memorial Highway  
Masontown, WV 26542

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

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

**Disposal Locations:**

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

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

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

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

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

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

Equipment Transport  
1 Tyler Court  
Carlisle, PA 17015

Myers Well Service, -----  
2001 Ballpark Court  
Export, PA 15632

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

Nichols 1-A (SWIW #13)  
Permit # 3862  
300 Cherrington Pkwy, Suite 200  
Coraopolis, PA 15108  
412-329-7275

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

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

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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

Mazena #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  
412-829-7275

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

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

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

US Steele 11385  
Permit # 47-001-00561  
200 Evergreen Drive  
Waynesburg, PA 15730  
304-323-6568

Chapin #7 UIC (SWIW #7)  
Permit # 34-083-2-4187-00-00  
Elkhead Gas & Oil Company  
12168 Marne Rd. NE  
Newark, OH 43055  
740-763-3966

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**EXISTING WELLS LOCATED WITHIN THE AREA OF REVIEW FOR:  
1209 UNIT PAD AND PROPOSED WELLS N-1H, N-2H, N-3H, N-4H, N-5H & N-6H**

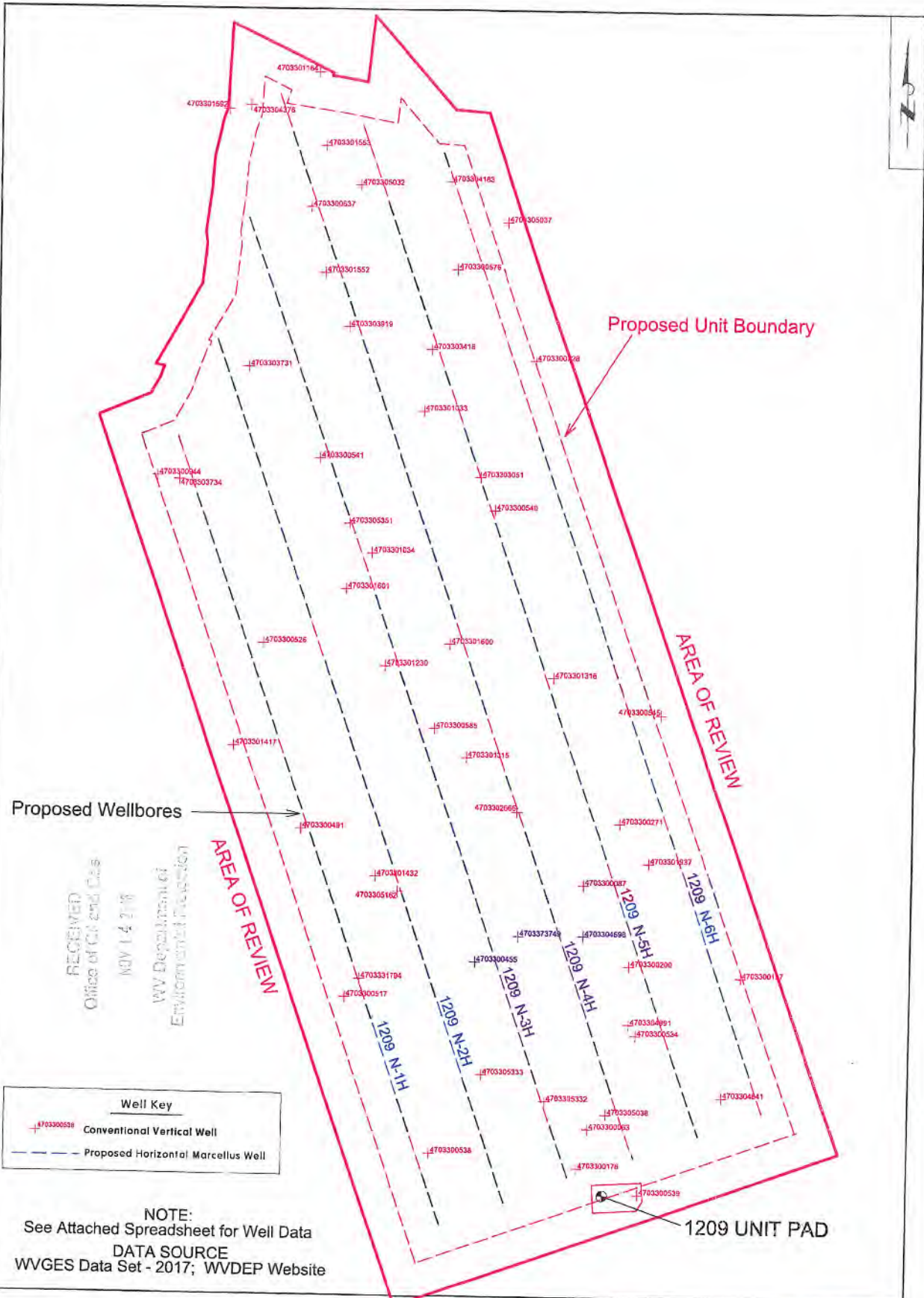
CT	API	COUNTY	FARM	OPERATOR NAME	FORMATION NAME	WELL TYPE	TVD	STATUS	LATITUDE	LONGITUDE
1	4703300063	HARRISON	J A Hardway	Dominion Energy Transmission Inc.	Gantz	Storage	1,636	ACTIVE	39.150649	-80.444245
2	4703300087	HARRISON	V B Washburn	Dominion Energy Transmission Inc.	Gordon Stray	Observation	1,850	ACTIVE	39.160372	-80.444617
3	4703300176	HARRISON	Jerome B Gusman	Dominion Energy Transmission Inc.	Gantz	Storage	1,542	ACTIVE	39.149066	-80.444789
4	4703300197	HARRISON	Leeman Maxwell	Dominion Energy Transmission Inc.	Fifty-foot	Storage	2,102	ACTIVE	39.156758	-80.436440
5	4703300200	HARRISON	E Southern 2	Dominion Energy Transmission Inc.	Fifty-foot	Storage	1,926	ACTIVE	39.157179	-80.442196
6	4703300271	HARRISON	Mary Burnside	Hope Natural Gas Company	Greenland Gap Fm	Gas	2,765	PLUGGED	39.162840	-80.442754
7	4703300455	HARRISON	Mary S Deison	Dominion Energy Transmission Inc.	Fifty-foot	Storage	1,720	ACTIVE	39.157324	-80.450208
8	4703300491	HARRISON	M G Law	Dominion Energy Transmission Inc.	Benson	Gas	4,261	ACTIVE	39.162549	-80.459266
9	4703300517	HARRISON	J S Law	Dominion Energy Transmission Inc.	Benson	Gas	4,400	ACTIVE	39.155873	-80.456916
10	4703300526	HARRISON	W T Law	Dominion Energy Transmission Inc.	Greenland Gap Fm	Storage	4,491	ACTIVE	39.169962	-80.461316
11	4703300534	HARRISON	Mallie Jenkins	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4,140	ACTIVE	39.154422	-80.441823
12	4703300538	HARRISON	Nays Riverbend Farms Inc	Dominion Energy Transmission Inc.	Benson	Gas	4,310	ACTIVE	39.149632	-80.452444
13	4703300539	HARRISON	Nays Riverbend Farm Inc	Dominion Energy Transmission Inc.	Benson	Gas	4,115	ACTIVE	39.148035	-80.441636
14	4703300540	HARRISON	Wm Burnside	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4,775	ACTIVE	39.175333	-80.449463
15	4703300541	HARRISON	Harriet Washburn	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4,561	ACTIVE	39.177365	-80.458520
16	4703300545	HARRISON	Mary Burnside	Dominion Energy Transmission Inc.	Benson	Gas	4,225	ACTIVE	39.167206	-80.440704
17	4703300576	HARRISON	Jacob P Post	Dominion Energy Transmission Inc.	Benson	Gas	4,323	ACTIVE	39.184912	-80.451513
18	4703300585	HARRISON	G W Washburn	Dominion Energy Transmission Inc.	Balltown	Gas	3,228	ACTIVE	39.166613	-80.452444
19	4703300637	HARRISON	Jacob McConkey	Dominion Energy Transmission Inc.	Benson	Gas	4,525	ACTIVE	39.187396	-80.459080
20	4703300728	HARRISON	Jacob P Post	Dominion Energy Transmission Inc.	Balltown	Gas	3,129	ACTIVE	39.181284	-80.447414
21	4703300944	HARRISON	Harriett Washburn 1	Jackson Fuel Corp.	Big Injun (Grnbr)	Dry	2,070	PLUGGED	39.176639	-80.466907
22	4703301033	HARRISON	Jacob P Post	EQT Production Co.	Benson	Gas	4,360	ACTIVE	39.179252	-80.453189
23	4703301034	HARRISON	W M Burnside	EQT Production Co.	Benson	Gas	4,487	ACTIVE	39.173591	-80.455799
24	4703301164	HARRISON	D H Hilkey	Greylock Conventional, LLC	Benson	Gas	4,443	ACTIVE	39.192749	-80.458707
25	4703301230	HARRISON	Brenda Tuckwiller	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4,595	ACTIVE	39.169092	-80.455053
26	4703301315	HARRISON	M Burnside	Dominion Energy Transmission Inc.	Big Lime	Gas	1,213	ACTIVE	39.165452	-80.450767
27	4703301316	HARRISON	M Burnside	Dominion Energy Transmission Inc.	NA	Gas	-	PLUGGED	39.168657	-80.446294
28	4703301417	HARRISON	Paul McDonald	Dominion Energy Transmission Inc.	Alexander	Gas	4,782	ACTIVE	39.165887	-80.462806
29	4703301432	HARRISON	M G Law	Dominion Energy Transmission Inc.	Hampshire Grp	Gas	2,264	NA	39.160667	-80.455411
30	4703301552	HARRISON	J McConkey	Dominion Energy Transmission Inc.	NA	Gas	-	ACTIVE	39.184766	-80.458335
31	4703301553	HARRISON	J McConkey	Dominion Energy Transmission Inc.	NA	NA	-	PLUGGED	39.189847	-80.458334
32	4703301592	HARRISON	G McConkey	Ross & Wharton Gas Co, Inc.	NA	NA	-	ACTIVE	39.191297	-80.463366



33	4703301600	HARRISON	W Burnside	Dominion Energy Transmission Inc.	Hampshire Grp	Gas	2,337	PLUGGED	39.169963	-80.451700
34	4703301601	HARRISON	W Burnside	Dominion Energy Transmission Inc.	Hampshire Grp	Gas	2,243	PLUGGED	39.172140	-80.457103
35	4703301937	HARRISON	Margaret J Bodkin	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4,260	ACTIVE	39.161247	-80.441255
36	4703302666	HARRISON	G W Riffie	Dominion Energy Transmission Inc.	Benson	Gas	4,325	ACTIVE	39.163278	-80.448100
37	4703303051	HARRISON	W M Burnside	Dominion Energy Transmission Inc.	Hampshire Grp	Gas	2,370	PLUGGED	39.176639	-80.450209
38	4703303418	HARRISON	Harry W Post	Dominion Energy Transmission Inc.	Hampshire Grp	Storage	2,028	ACTIVE	39.181719	-80.452817
39	4703303731	HARRISON	Charles Reich	Enervest Operating, LLC	Greenland Gap Fm	Gas	5,004	ACTIVE	39.180993	-80.462247
40	4703303734	HARRISON	James D Sexton Jr	Enervest Operating, LLC	Greenland Gap Fm	Gas	5,058	ACTIVE	39.176493	-80.465788
41	4703303919	HARRISON	Charles N Tyre etux	Berry Energy Inc.	Greenland Gap Fm	Gas	4,650	ACTIVE	39.182611	-80.457101
42	4703304183	HARRISON	Jean P Rapking	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4,558	ACTIVE	39.188411	-80.451886
43	4703304376	HARRISON	June S Hanner	Consol Gas Co.	Greenland Gap Fm	Gas	4,700	ACTIVE	39.191457	-80.462248
44	4703304641	HARRISON	William B Ferrell Jr	Dominion Energy Transmission Inc.	Benson	Gas	4,264	ACTIVE	39.151966	-80.437340
45	4703304698	HARRISON	John E Paugh Jr	Dominion Energy Transmission Inc.	Price Fm & equivs	Gas	1,488	ACTIVE	39.158347	-80.444606
46	4703304991	HARRISON	John E Jr & Lee M Paugh	Dominion Energy Transmission Inc.	Weir	Gas	1,503	ACTIVE	39.154867	-80.442184
47	4703305032	HARRISON	James S. Jenkins	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4,450	ACTIVE	39.188266	-80.456545
48	4703305037	HARRISON	Post Heritage LLC	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	5,126	ACTIVE	39.186816	-80.448904
49	4703305038	HARRISON	Nay's Riverbend Farm Inc	Dominion Energy Transmission Inc.	Weir	Gas	1,428	ACTIVE	39.151241	-80.443300
50	4703305162	HARRISON	Sharon S McDonald	Dominion Energy Transmission Inc.	Weir	Gas	1,640	PLUGGED	39.160078	-80.454245
51	4703305332	HARRISON	Nay's Riverbend Farm Inc	Dominion Energy Transmission Inc.	Big Injun (Grnbr)	Gas	1,469	ACTIVE	39.151781	-80.446467
52	4703305333	HARRISON	Nay's Riverbend Farm Inc	Consol Gas Co.	WELL WAS NOT DRILLED				39.152819	-80.449784
53	4703305351	HARRISON	William M McDonald	Consol Gas Co.	WELL WAS NOT DRILLED				39.174766	-80.456970
54										

SOURCE: WVGES DATASET (2017) and WVDEP WEBSITE

RECEIVED  
Office of Oil and Gas  
NOV 14 2018  
WV Department of  
Environmental Protection



Proposed Wellbores

Proposed Unit Boundary

AREA OF REVIEW

AREA OF REVIEW

RECEIVED  
Office of Oil and Gas  
NOV 14 2018  
WV Department of  
Environmental Protection

Well Key	
	Conventional Vertical Well
	Proposed Horizontal Marcellus Well

NOTE:  
See Attached Spreadsheet for Well Data  
DATA SOURCE  
WVGES Data Set - 2017; WVDEP Website

1209 UNIT PAD

Area of Review for:

**1209 UNIT PAD**

- Proposed 1209 N-1H
- Proposed 1209 N-2H
- Proposed 1209 N-3H
- Proposed 1209 N-4H
- Proposed 1209 N-5H
- Proposed 1209 N-6H

Union District, Harrison County, W.Va.

HG ENERGY, II APPALACHIA, LLC  
5260 DuPont Road, Parkersburg, WV 26101



**HG Energy II Appalachia, LLC**

**Site Safety Plan**

**1209 Unit Well Pad  
327 Gooseman Rd Jane Lew  
Harrison County, WV 26378**

RECEIVED  
Office of Oil and Gas

NOV 14 2018

WV Department of  
Environmental Protection

**May 2018: Version 1**

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

HG Energy II Appalachia, LLC

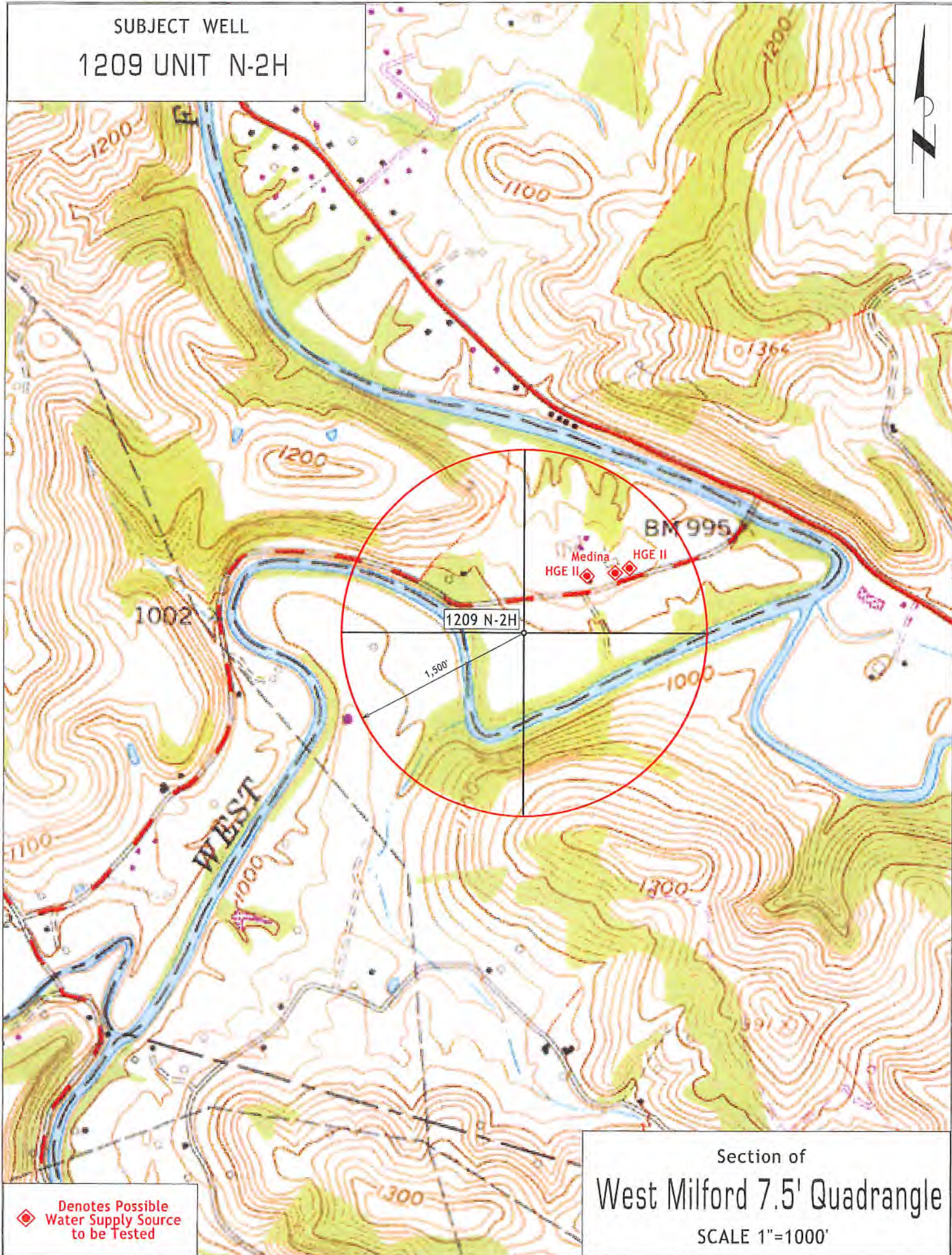
5260 Dupont Road

Parkersburg, WV 26101

SPW  
10/22/2018



SUBJECT WELL  
1209 UNIT N-2H



◆ Denotes Possible  
Water Supply Source  
to be Tested

Section of  
West Milford 7.5' Quadrangle  
SCALE 1"=1000'



BHL is located on topo map 9,422 feet south of Latitude: 39° 12' 30"  
 SHL is located on topo map 6,821 feet south of Latitude: 39° 10' 00"

**SEE PAGE 2 FOR PLAT DUE TO LENGTH OF LATERAL**

	LESSOR	DIST-TM/PAR
A	J. B. GUSMAN ET AL	20-444/11.2
B	J. A. HARDWAY ET AL	20-444/26
		20-444/5
C	W. J. LAW ET UX	20-424/47
D	M. G. LAW ET AL	20-424/47
E	GEO. W. WASHBURN ET AL	20-424/16
F	W. T. LAW ET UX	20-424/14
		20-424/1
G	WILLIAM AND RUHAMA BURNSIDE	20-424/2
H	GEORGE WASHBURN ET AL	20-404/30.1
		20-404/40
		20-404/40.3
J	JACOB MCCONKEY	20-404/4.5

**SURFACE HOLE LOCATION (SHL)**  
**UTM 17-NAD83(M)**  
 N:4333341.21  
 E:548091.57  
 UTM 17-NAD83(FT)  
 N:14216970.30  
 E:1798197.10  
 LAT/LON DATUM-NAD83  
 LAT:39.147939  
 LON:-80.443458

**APPROX. LANDING POINT**  
**UTM 17-NAD83(M)**  
 N:4333333.11  
 E:547643.79  
 UTM 17-NAD83(FT)  
 N:14229505.76  
 E:1796728.00  
 LAT/LON DATUM-NAD83  
 LAT:39.147891  
 LON:-80.448640

**BOTTOM HOLE LOCATION (BHL)**  
**UTM 17-NAD83(M)**  
 N:4337162.03  
 E:546290.78  
 UTM 17-NAD83(FT)  
 N:14229505.76  
 E:1792289.01  
 LAT/LON DATUM-NAD83  
 LAT:39.182465  
 LON:-80.464036

SHL



	SURFACE OWNER	DIST-TM/PAR
1	DANNY LEE & ALICIA STICKEL	P/O 20-444/11.2
1A	HG ENERGY II APPALACHIA, LLC	P/O 20-444/11.2
2	HG ENERGY II APPALACHIA, LLC	20-444/11.3
3	AARON C. & CHRISTINA P. MEDINA	20-444/11
4	HG ENERGY II APPALACHIA, LLC	20-444/11.1
5	ROCK GARTON	20-444/26
6	DANNY LEE & ALICIA A. STICKEL	20-444/5
7	SHARON S. MCDONALD	20-424/47
8	BRENDA & MICHAEL TUCKWILLER	20-424/16
9	JAMES IVAN MCDONALD	20-424/14
10	JAMES IVAN MCDONALD	20-424/1
11	WILLIAM MICHAEL MCDONALD	20-424/2
12	GREATER HARRISON COUNTY PUBLIC SERVICE DISTRICT	20-404/58
13	AL-N-EL FARMS LLC	20-404/30.1
14	PERRY LEE & DEBORAH JEAN POST	20-404/40
15	VERONICA M. AND JESSE RAY, JR. CUNNINGHAM	20-404/40.3
16	JAMES A. REICH	20-404/4.5

BHL



BHL is located on topo map 1,616 feet west of Longitude: 80° 27' 30"  
 SHL is located on topo map 7,598 feet west of Longitude: 80° 25' 00"

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

FILE #: <u>1209 N-2H</u>	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: <u>George D. Six</u>  R.P.E.: _____ L.L.S.: P.S. No. 2000	 PLACE SEAL HERE
DRAWING #: <u>1209 N-2H</u>		
SCALE: <u>1" = 2000'</u>		
MINIMUM DEGREE OF ACCURACY: <u>1/2500</u>		
PROVEN SOURCE OF ELEVATION: <u>U.S.G.S. MONUMENT THOMAS 1498.81'</u>		

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP

OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304

DATE: OCTOBER 24, 2018

OPERATOR'S WELL #: 1209 N-2H

API WELL #: 47 33 05935  
 STATE COUNTY PERMIT

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

WATERSHED: MIDDLE WEST FORK CREEK ELEVATION: 1,007±

COUNTY/DISTRICT: HARRISON / UNION QUADRANGLE: WEST MILFORD, WV 7.5'

SURFACE OWNER: HG ENERGY II APPALACHIA, LLC ACREAGE: 95.06±

OIL & GAS ROYALTY OWNER: ANN COVINGTON, ET AL ACREAGE: 1283.084±

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,900± TMD: 20,911±

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

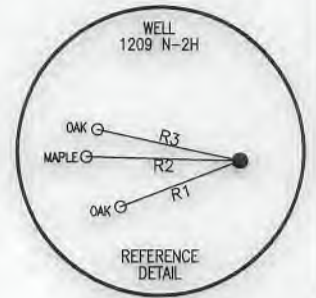


# 1209 N-2H

## PAGE 2 OF 2

NOTES:

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



**SURFACE HOLE LOCATION (SHL)**  
**UTM 17-NAD83(M)**  
 N:4333341.21  
 E:548091.57  
**UTM 17-NAD83(FT)**  
 N:14216970.30  
 E:1798197.10  
**LAT/LON DATUM-NAD83**  
 LAT:39.147939  
 LON:-80.443458

**APPROX. LANDING POINT**  
**UTM 17-NAD83(M)**  
 N:4333333.11  
 E:547643.79  
**UTM 17-NAD83(FT)**  
 N:14216943.70  
 E:1796728.00  
**LAT/LON DATUM-NAD83**  
 LAT:39.147891  
 LON:-80.448640

**BOTTOM HOLE LOCATION (BHL)**  
**UTM 17-NAD83(M)**  
 N:4337162.03  
 E:546290.78  
**UTM 17-NAD83(FT)**  
 N:14229505.76  
 E:1792289.01  
**LAT/LON DATUM-NAD83**  
 LAT:39.182465  
 LON:-80.464036

**LEGEND**

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- MINERAL TRACT BOUNDARY
- LESSORS
- SURFACE OWNERS
- PARCEL LINES
- LEASE BOUNDARY
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE

**WELLS WITHIN 2400'**

- EXISTING WELLS
- PLUGGED WELLS
- ABANDONED WELLS

LINE	BEARING	DISTANCE
R1	S 69°09'26" W	198.91'
R2	N 88°23'28" W	239.18'
R3	N 77°34'14" W	226.83'
R4	S 03°43'58" W	1726.17'
R5	N 43°36'21" E	694.32'
R6	S 02°23'36" W	800.10'



*George D. Six*

**OCTOBER 24, 2018**



WW-6A1  
(5/13)

Operator's Well No. Nays 1209 N-2H

**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 Sheets"

RECEIVED  
Office of Oil and Gas

NOV 14 2018

WV Department of  
Environmental Protection

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

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

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

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

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

1209 N-2H LEASE CHAIN - HG Energy II Appalachia, LLC

TRACT #	LEGACY LEASE NUMBER	TAX MAP	LEASE NUMBER	GRANTOR/LESSOR	GRANTEE/LESSEE	ROYALTY	DEED BOOK	PAGE
A	FK020606	17-20-0444-0011-0000, 17-20-0444-0011-0001, 17-20-0444-0011-0002, 17-20-0444-0011-0003, 17-20-0444-0012-0000, 17-12-0444-0013-0000, 17-12-0444-0014-0000, 17-12-0444-0021-0000, 17-12-0444-0021-0001, 17-12-0444-0022-0000, 17-12-0445-0001-0000, 17-12-0445-0002-0000, 17-12-0445-0009-0000, 17-12-0445-0010-0000, 17-12-0445-0011-0000	Q100370000	J.B. GUSMAN AND ADLINE GUSMAN	TREAT AND CRAWFORD	NOT LESS THAN 1/8	158	8
				TREAT AND CRAWFORD	UNITED FUEL GAS COMPANY	ASSIGNMENT	228	359
				UNITED FUEL GAS COMPANY	FAVETTE COUNTY GAS COMPANY	ASSIGNMENT	UNRECORDED	
				FAVETTE COUNTY GAS COMPANY	HOPE NATURAL GAS	ASSIGNMENT	201	3
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY COMPANY	MERGER/NAME CHANGE	903	179
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362
				DOMINION TRANSMISSION, INC.	DOMINION EXPLORATION & PRODUCTION, INC.	ASSIGNMENT	1409	680
				DOMINION TRANSMISSION, INC.	DOMINION EXPLORATION & PRODUCTION, INC.	ASSIGNMENT	1442	356
				DOMINION TRANSMISSION, INC.	DOMINION TRANSMISSION, INC.	ASSIGNMENT	1457	978
				B	FK004424	17-20-0444-0005-0000 17-20-0444-0026-0000	Q10036800	DOMINION ENERGY TRANSMISSION, INC.
J.A. HARROWAY AND JANE HARROWAY, HIS WIFE	SOUTH PENN OIL COMPANY	LIMITED PARTIAL ASSIGNMENT (50%)	1543					1235
SOUTH PENN OIL COMPANY	HOPE NATURAL GAS COMPANY	PARTIAL ASSIGNMENT (32%)	1576					125
HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	ASSIGNMENT	1584					942
CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1600					692
CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	1601					581
CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	113					440
DOMINION TRANSMISSION, INC.	HOPE NATURAL GAS COMPANY	ASSIGNMENT	240					210
HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903					179
CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136					250
CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	51					795
DOMINION TRANSMISSION, INC.	CNG GAS COMPANY LLC	MEMORANDUM FARMOUT AGREEMENT	1522					362
CNG GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235				
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942				
NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	660				
DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	1601	692				
DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581				
C	FK013943	17-20-0444-0003-0000 17-20-0444-0004-0000 P/O 17-20-0424-0047-0000	Q100657000	W.J. LAW AND LUCY A. LAW	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	1601	581
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	175	168
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	MERGER/NAME CHANGE	903	179
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	ASSIGNMENT	1136	250
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	51	795
				DOMINION TRANSMISSION, INC.	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM FARMOUT AGREEMENT	1522	33
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	660
				DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	1601	692
DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581				
D	FK027184	17-20-0424-0033-0001, 17-20-0424-0035-0000, 17-20-0424-0047-0000, 17-20-0424-0047-0001	Q100911000	M.G. LAW AND L.L. LAW	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	1601	581
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903	179
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG GAS TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795
				CNG GAS TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	FARMOUT AGREEMENT	1522	33
				CNX GAS COMPANY, LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT OF FARMOUT ASSIGNMENT	1543	1235
				CNX GAS COMPANY, LLC	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1584	942
				NOBLE ENERGY, INC.	HOPE NATURAL GAS COMPANY	ASSIGNMENT	1584	942
				HOPE NATURAL GAS COMPANY	SOUTH PENN OIL COMPANY	NOT LESS THAN 1/8	121	114
				SOUTH PENN OIL COMPANY	HOPE NATURAL GAS COMPANY	ASSIGNMENT	240	210
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903	179
CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250				



Index	File Number	Record Number	Document Description	Document Type	Effective Date	Expiration Date	Page Count	Notes
E	F002354	17-20-0424-0016-0000	CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION			51	795
			CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.			58	362
			DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC			1572	33
			DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.			1576	125
			CNX GAS COMPANY LLC	NOBLE ENERGY, INC.			1584	942
			NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC			1600	660
			NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC			1600	692
			DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.			WVS05	
			DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC			1601	581
			W.T. LAW AND B.C. LAW, HIS WIFE	HOPE NATURAL GAS COMPANY			248	52
F	F0027183	17-20-0424-0014-0000	HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION			903	179
			CONSOLIDATED GAS SUPPLY CORPORATION	CNG TRANSMISSION CORPORATION			1136	250
			CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.			1522	795
			DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC			1522	33
			CNX GAS COMPANY LLC	NOBLE ENERGY, INC.			1543	1235
			CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	NOBLE ENERGY, INC.			1576	125
			NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC			1584	942
			NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC			1600	660
			DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.			1600	692
			DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC			1601	581
G	F0052931	17-20-0424-0002-0000, 17-20-0404-0049-0000, 17-20-0404-0057-0000	W.M. BURNSIDE AND RUTHAN BURNSIDE, HIS WIFE, AKA RYUHAMA BURNSIDE	RESERVE GAS COMPANY			193	444
			RESERVE GAS COMPANY	HOPE NATURAL GAS COMPANY			573	508
			HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION			903	179
			CONSOLIDATED GAS SUPPLY CORPORATION	CNG TRANSMISSION CORPORATION			1136	250
			CNG TRANSMISSION CORPORATION	EMAX OIL COMPANY			1261	51
			EMAX OIL COMPANY	CABOT OIL AND GAS CORPORATION			1244	795
			CABOT OIL AND GAS CORPORATION	ENERVEST APPALACHIA, L.P.			1314	1012
			CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.			1344	1012
			DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.			58	362
			DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC			1621	1295
H	F0052929	P/O 17-20-0404-0030-0001, 17-20-0404-0039-0001, 17-20-0404-0040-0000, 17-20-0404-0040-0001, 17-20-0404-0040-0003	GEORGE W. WASHBURN AND HARRIET A. WASHBURN, HIS WIFE	RESERVE GAS COMPANY			193	449
			RESERVE GAS COMPANY	HOPE NATURAL GAS COMPANY			508	573
			HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION			903	179
			CONSOLIDATED GAS SUPPLY CORPORATION	CNG TRANSMISSION CORPORATION			1136	250
			CNG TRANSMISSION CORPORATION	EMAX OIL COMPANY			1261	51
			EMAX OIL COMPANY	CABOT OIL AND GAS CORPORATION			1244	795
			CABOT OIL AND GAS CORPORATION	ENERVEST APPALACHIA, L.P.			1314	1012
			CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.			1344	1012
			DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.			58	362
			DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC			1621	1295
J	F0052821	P/O 17-20-0404-0029-0004, 17-20-0404-0029-0002, 17-20-0404-0029-0003, 17-20-0404-0029-0004, 17-20-0404-0029-0005	JACOB MCCONKEY AND MARY J. MCCONKEY, HIS WIFE	SOOTH PENN OIL COMPANY			113	469
			SOOTH PENN OIL COMPANY	HOPE NATURAL GAS COMPANY (GAS)			172	235
			HOPE NATURAL GAS COMPANY (GAS)	RESERVE GAS COMPANY			221	210
			RESERVE GAS COMPANY	HOPE NATURAL GAS COMPANY			508	573
			HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION			903	179
			CONSOLIDATED GAS SUPPLY CORPORATION	CNG TRANSMISSION CORPORATION			1136	250
			CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.			1427	362
			DOMINION TRANSMISSION, INC.	DOMINION EXPLORATION & PRODUCTION, INC.			1457	829
			DOMINION EXPLORATION & PRODUCTION, INC.	DOMINION TRANSMISSION, INC.			1522	978
			DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC			1524	33

p/o 17-20-0404-0030-0001 p/o 17-20-0404-0040-0002 p/o 17-20-0404-0004-0005	CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235
	DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125
	CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942
	NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	660
	DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS	
			SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581
	DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC			

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

---

November 1, 2018

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

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RE: Drilling Under Roads – Nays 1209 N-2H  
Union District, Harrison 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](mailto:dwhite@hgenergyllc.com) or 304-420-1119.

Very truly yours,

*Diane White*

Diane C. White

Enclosures

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

Date of Notice Certification: 10/25/2018

API No. 47- 033 - 05935  
Operator's Well No. Nays 1209 N-2H  
Well Pad Name: Nays 1209

**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>548091.6</u>
County: <u>Harrison</u>	Northing: <u>4333341.2</u>
District: <u>Union</u>	Public Road Access: <u>Kincheloe Run Road / SR35</u>
Quadrangle: <u>West Milford 7.5'</u>	Generally used farm name: <u>Nays</u>
Watershed: <u>West Fork</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><b>OOG OFFICE USE ONLY</b></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.

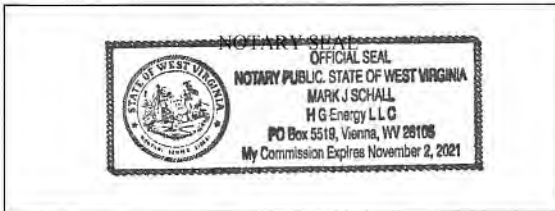


**Certification of Notice is hereby given:**

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: HG Energy II Appalachia, LLC  
By: Diane White *Diane White*  
Its: Agent  
Telephone: 304-420-1119

Address: 5260 Dupont Road  
Parkersburg, WV 26101  
Facsimile: 304-863-3172  
Email: dwhite@hgenergyllc.com



Subscribed and sworn before me this 25th day of October, 2018.

*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](mailto:depprivacyofficer@wv.gov).

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**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:** 11/05/2018 **Date Permit Application Filed:** 11/09/18

**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: HG Energy II Appalachia, LLC  
 Address: 5260 Dupont Road  
Parkersburg, WV 26101  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)  
 Name: HG Energy II Appalachia, LLC  
 Address: 5260 Dupont Road  
Parkersburg, WV 26101  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)  
 Name: HG Energy II Appalachia, LLC  
 Address: 5260 Dupont Road  
Parkersburg, WV 26101

COAL OWNER OR LESSEE  
 Name: NA  
 Address: \_\_\_\_\_

COAL OPERATOR  
 Name: NA  
 Address: \_\_\_\_\_

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)  
 Name: HG Energy II Appalachia, LLC  
 Address: 5260 Dupont Road  
Parkersburg, WV 26101

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
 Name: Dominion Energy Transmission - Attn: Ronald Walden  
 Address: 925 White Oaks Blvd  
Bridgeport, WV 26330

\*Please attach additional forms if necessary

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WW-6A  
(8-13)

Cone 1209 N-2H

Page 1 Continued

**Surface Owner of Water Well and/or Water Purveyors to be Noticed:**

✓  
Aaron & Christina Medina  
314 Gooseman Road  
Jane Lew, WV 26378

\*\*\* Timothy Butcher  
244 Gooseman Road  
Jane Lew, WV 26378

*Sold to Hg 7/2018*

\*\* ✓  
Danny & Alicia Stichel  
1404 Kincheloe Road  
Jane Lew, WV 26378

**NOTES**

\*\*\* Mr. Butcher sold his property to HG Energy II  
Appalachia, LLC, July 2018.

\*\* The well located on Mr. Stichel's property can't be  
accessed, it's sealed. There aren't any other water sources  
to be tested.

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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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://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

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-11(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 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

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Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**



**Time Limits and Methods for Filing Comments.**

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

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

**Comment Requirements**

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

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> 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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WW-6A  
(8-13)

API NO. 47- \_\_\_\_\_  
OPERATOR WELL NO. Nays 1209 N-2H  
Well Pad Name: Nays 1209

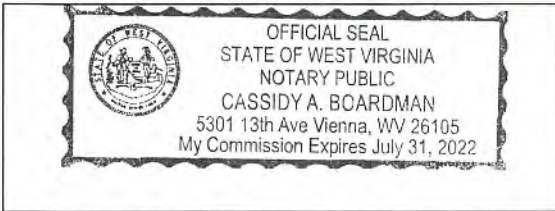
**Notice is hereby given by:**

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

Address: 5260 Dupont Road  
Parkersburg, WV  
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](mailto:deprivacyofficer@wv.gov).



Subscribed and sworn before me this 2nd day of November, 2018.

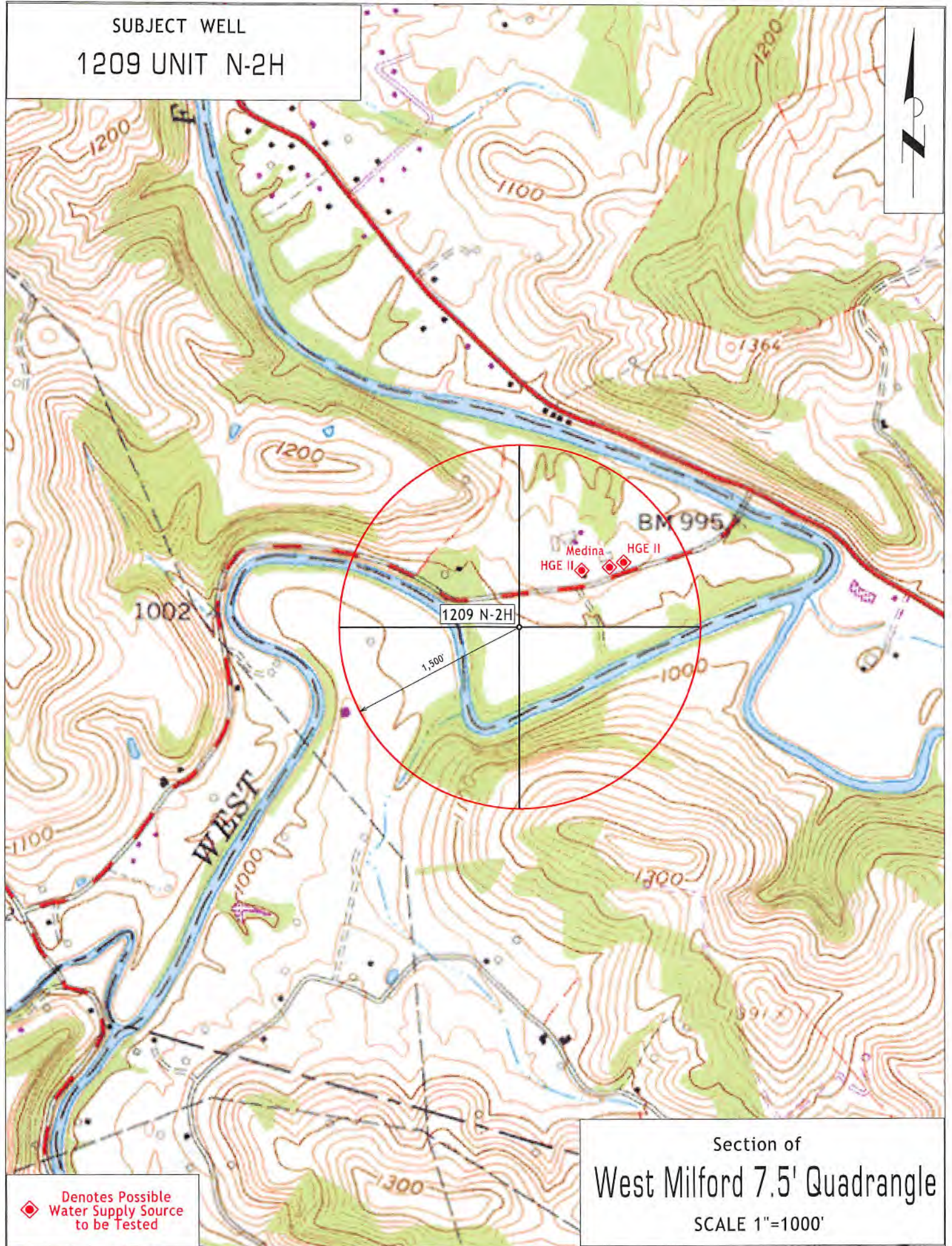
Cassidy A. Boardman Notary Public

My Commission Expires 7/31/2022

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SUBJECT WELL  
1209 UNIT N-2H



◆ Denotes Possible  
Water Supply Source  
to be Tested

Section of  
West Milford 7.5' Quadrangle  
SCALE 1"=1000'







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

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

**Date of Notice:** 10/31/2018      **Date Permit Application Filed:** 11/09/2018

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

CERTIFIED MAIL                       HAND \*  
RETURN RECEIPT REQUESTED              DELIVERY

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

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

Name: HG Energy II Appalachia, LLC  
Address: 5260 Dupont Road  
Parkersburg, WV 26101

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

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**Notice is hereby given:**

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

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>548091.6</u>
County: <u>Harrison</u>		Northing: <u>4333341.2</u>
District: <u>Union</u>	Public Road Access: <u>Kincheloe Run Road/ SR35</u>	
Quadrangle: <u>Audra 7.5'</u>	Generally used farm name: <u>Cone</u>	
Watershed: <u>Elk Creek</u>		

**This Notice Shall Include:**

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

Well Operator: HG Energy II Appalachia, LLC  
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 [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

\* Notice was not sent because HG Energy II Appalachia, LLC is the owner of the surface property and the Operator submitting the well work application



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

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

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

November 1, 2018

Jill M. Newman  
 Deputy Commissioner

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

Subject: DOH Permit for the Nays 1209 Well Pad, Harrison County  
 N-2H Well Site

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 Environmental Protection

Dear Mr. Martin,

This well site will be accessed from Permit #04-2018-0673 issued to HG Energy II Appalachia for access to the State Road for a well site located off of Harrison County 35 SLS.

The operator has signed a STATEWIDE 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 O&G Coordinator

Cc: Diane C. White  
 HG Energy II, LLC  
 CH, OM, D-4  
 File



**List of Frac Additives by Chemical Name and CAS #****Nays 1209 Well Pad (N-1H to N-6H, S-7H to S-12H)**

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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West Virginia Department of  
Environmental Protection  
Office of Oil & Gas  
601 57th Street SE  
Charleston, WV 25304-2345

DEP Office Use only	
Date Received by Oil & Gas:	11/14/18
Assigned Impoundment ID #:	

## Permit Associated Impoundment / Pit Registration

**Instruction:** This form is to be used to register impoundments or waste pits, greater than 5,000 bbls, that are associated with a WVDEP, Office of Oil and Gas, well drilling permit. An **associated impoundment or pit** means it has been designed and included in the well drilling permit application, will follow the reclamation time frame of well work permit, and will be approved in conjunction with the well work permit. An impoundment ID number will be assigned by WVDEP, Office of Oil and Gas, to all impoundments and pits. This impoundment ID number will be sent to the applicant following receipt of this form by WVDEP. Please reference this impoundment ID number with all future correspondence and reference to this impoundment. Conditions as described in W.Va. State Rule §35-4-21 will be followed as it relates to impoundments and pits.

### Section 1 – Operator Information

Operator Name:	HG Energy II Appalachia, LLC.		
Operator ID:	494519932		
Address: Street	5260 Dupont Road		
City:	Parkersburg	State:	WV
		Zip:	26101
Contact Name:	Diane White	Contact Title:	Accountant
Contact Phone:	304-420-1119	Contact Email:	dwhite@hgenergyllc.com

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### Section 2 – Engineering / Design Contractor Information

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Design will be contracted	<input checked="" type="checkbox"/>	Designed in-house	<input type="checkbox"/>
Company Name:	Penn Environmental & Remediation, Inc.		
Address: Street	111 Ryan Court		
City:	Pittsburgh	State:	PA
		Zip:	15205
Contact Name:	Matthew E. Pierce	Contact Title:	Senior Project Manager
Contact Phone:	412-722-1222	Contact Email:	mpierce@penn-er.com
Certifying Professional Engineer:	Matthew E. Pierce		
Professional Engineer Registration Number:	20458		



Office of Oil and Gas

**Section 3 - Impoundment / Pit Information**

Type of Structure. <u>Check one of two choices below:</u> <input checked="" type="checkbox"/> Freshwater Impoundment <input type="checkbox"/> Waste Pit Note: <u>Any</u> waste in a pit will make it a waste pit.		
Name of Structure (Company Name :) <u>HG Energy II Appalachia, LLC.</u>		
County: <u>Harrison</u>	District: <u>Union</u>	
USGS 7.5' Quad Map Name: <u>West Milford</u>		
Farm Name: <u>HG Energy II Appalachia</u>		
Pad Name: <u>1209</u>		
Surface Owner Name: <u>HG Energy II Appalachia, LLC.</u>		
Physical Description of Location: <u>Less than one mile from the intersection of SR 19 (Milford Street) and CR 35 (Gooseman Road) in Jane Lew, WV</u>		
<small>(Note: Give general location, example: 2 miles south of Smalltown, WV on Rt. 22, left on Buffalo Creek)</small>		
Watershed (nearest perennial): <u>West Fork River</u>		
Distance (Drainage Distance) to nearest perennial stream: <u>250 feet</u>		
Location Coordinates (NAD83, Decimal Degrees (xx.xxxx, -xx.xxxx))		
Latitude: <u>39.1485383</u>	Longitude (Use negative sign): <u>-80.439546</u>	
UTM Coordinates : <u>1799304.835</u>	<u>E</u>	<u>14217195.3</u> <u>N</u>
Access Road Coordinates (junction of state highway access)		
Latitude: <u>39.14885388</u>	Longitude (Use negative sign): <u>-80.44084851</u>	
UTM Coordinates : <u>1798934.9</u>	<u>E</u>	<u>14217307.9</u> <u>N</u>
Approximate Dimensions		
Length: <u>530</u>	Width: <u>276</u>	Height: <u>15</u>
<small>Note: If irregularly shaped, give approximate dimensions of long axis.</small>		
Total Capacity – Provide all units of measure below:		
Barrels: <u>287,380</u>	Gallons: <u>12,069,797</u>	Acre-Feet: <u>37.041</u>
Capacity with 2' Freeboard – Provide all units of measure below:		
Barrels: <u>234,136</u>	Gallons: <u>9,833,562</u>	Acre-Feet: <u>30.178</u>
Incised volume:		
Barrels: <u>195,232</u>	Gallons: <u>8,199,649</u>	Acre-Feet: <u>25.164</u>
Net impounded volume: (Total volume less incised volume.)		
Barrels: <u>92,148</u>	Gallons: <u>3,870,148</u>	Acre-Feet: <u>11.877</u>
Anticipated Construction Start Date (estimation, non-binding): _____		
Note: No construction may begin on <b>Associated</b> impoundment until WVDEP issues the drilling permit. At least 7 calendar days prior to confirmed construction start date, notify the Office of Oil & Gas, and the local Oil and Gas inspector of construction start date. Use form IMP-2, "Notification of Impoundment / Pit Construction."		

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Office of Oil and Gas

**Section 4 - Associated Well Numbers and API Numbers.** List associated well numbers and API number. API numbers may not be assigned at time of registering this impoundment, if so list as pending.

Well Number(s):	API Number(s) – If issued:
Nays 1209 N-1H	Pending
Nays 1209 N-2H	Pending
Nays 1209 N-3H	Pending
Nays 1209 N-4H	Pending
Nays 1209 N-5H	Pending
Nays 1209 N-6H	Pending
Nays 1209 S-7H, S-8H, S-9H, S-10H, S-11H, S-12H	Pending

**Section 5 - Required Information Checklist To Register Permit Associated Impoundments or Pits.** Include the following information and plans with application.

- Engineered Construction Plans, certified by WV Registered P.E.
- Erosion and Sediment Control Plan, certified by WV Registered P.E.
- Reclamation Plan, certified by WV Registered P.E.

**Section 6 – Dam Standard Qualifying Evaluation**

- The design of this structure has been evaluated by the applicant to determine it does NOT qualify to be defined as a dam, under W.Va Rule §47-34. If the design of this structure qualifies it to be defined as a dam, all permits regulating dams will be required prior to registering the structure with the Office of Oil and Gas. The dam standard, from the WVDEP, Div. Of Water and Waste, is available for review at: <http://www.dep.wv.gov/WWE/ee/ds/Pages/default.aspx>

**Section 7 –Comments – Provide any additional comments concerning this project**

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**Section 8 - Application Certification**

I hereby certify that the information listed above is true and accurate. I understand that this pit/impoundment is to be constructed only in a location appropriate for the storage of water, including wastewater, and will be constructed in accordance with plans designed and certified by a West Virginia registered professional engineer. I further recognize that all required plans have been submitted to the Office of Oil and Gas. I understand that after construction, and prior to any fluid being placed in the pit/impoundment, it shall be inspected by a West Virginia registered professional engineer to ensure compliance with the certified design and construction plan, and that the professional engineer shall certify that this structure was constructed in accordance with design and construction plans. I understand that such certification shall be in writing to the Chief and that no fluids may be placed in the pit/impoundment until the certification has been filed with the chief. I agree that this pit/impoundment shall be constructed, maintained, operated and closed in accordance with all applicable laws and rules, including the requirements of W. Va. Code R § 35-4-2 .

Name: Diane White

Title: Accountant

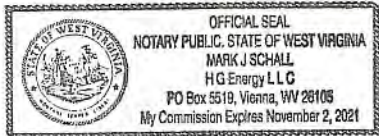
Signature: Diane White

Taken, subscribed and sworn to before me this 29th Day of October 20 18

Notary Public: [Signature]

My commission expires: 11/2/2021

Notary Seal:



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**Section 9. Submittal Instructions**

Submit original paper copy of application to:

West Virginia Department of Environmental Protection  
Office of Oil and Gas  
Impoundment Registration  
601 57<sup>th</sup> Street, SE  
Charleston WV 25304

Email PDF file format of this application and all related engineering Plans to :  
Depimpoundments@wv.gov

WV Department of  
Environmental Protection

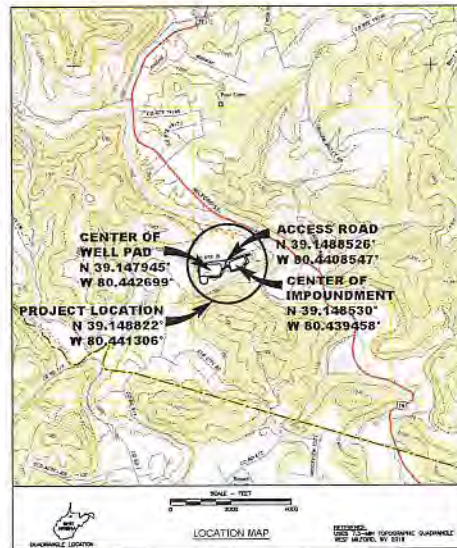
# CONSTRUCTION IMPROVEMENT PLANS WITH EROSION AND SEDIMENT CONTROLS HG 1209 PAD & IMPOUNDMENT

**APPROVED WVDEP OOG**  
10/16/2018

UNION DISTRICT  
HARRISON COUNTY  
WEST VIRGINIA

### CONSTRUCTION SEQUENCE

1. Prior to commencement of any earth disturbance activity including clearing and grubbing, the registrant shall call West Virginia 811 by dialing 811 or 1-800-245-4848 to identify all utility lines. The registrant also must clearly delineate sensitive areas, riparian forest buffer boundaries, the limits of clearing, and trees that are to be conserved within the project site, and shall install appropriate barriers where equipment may not be parked, staged, operated or located for any purpose.
2. Site access - This is the first land-disturbance activity to take place at the site and should provide BMPs to minimize accelerated erosion and sedimentation from the following areas: entrance to the site, construction routes, and areas designated for equipment or other use at the site including parking, stockpiles.
3. Sediment Barriers - Install perimeter BMPs after the construction site is accessed, keeping associated clearing and grubbing limited to only that amount required for installing perimeter BMPs.
4. Land Clearing and Grading - Implement clearing and grading only after all downslope E&S BMPs have been constructed and stabilized.
5. Surface Stabilization - Apply temporary or permanent stabilization measures immediately to any disturbed areas where work has reached final grade, has been delayed or otherwise temporarily suspended.
6. Construction of Buildings, Utilities, and Paving - During construction, install and maintain any additional erosion and sediment control BMPs, and implement any structural post construction stormwater BMPs that may be required.
7. Upon completion of pad grading, compact the pad to grade and begin placement of pad soil cement.
8. Final Stabilization, Topsoiling, Trees and Shrubs - After construction is completed, install stabilization BMPs including: permanent seeding, mulching and riprap, and complete implementation of stormwater BMPs in this last construction phase. Stabilize all open areas, including borrow and spoil areas, and remove all temporary BMPs and stabilize any disturbances associated with the removal of the BMP.



PREPARED FOR  
**HG ENERGY II APPALACHIA, LLC**  
5260 DUPONT ROAD  
PARKERSBURG, WEST VIRGINIA 26101  
(304) 420-1100

PREPARED BY  
**PENN ENVIRONMENTAL & REMEDIATION, INC.**  
111 RYAN COURT  
PITTSBURGH, PA 15205  
(412) 722-1222

Estimated Gross Material Balance (CY)		
Final Development - Gravel Option		
Fill	16,761	51,339
Excavation	47,364	14,737
Rock	149	808
Totals	64,274	67,884
Soil Adjustment for Aggregate Import:		
Import		2,308
Final Site Balance		151,074
Stripped Topsoil (Limit of Disturbance)		
Est. Stock Factor	20%	2,911
Est. Topsoil Stockpile Volume (Loose CY)		16,866
Minimum Total Stockpile Capacity (Declared) (CY)		17,010
Notes:		
1. Material ordered for soil, gravel, and rock quantities only.		
2. Topsoil soil volume based on 6 inches average depth.		
3. Material balance and aggregate quantities based on estimates and may not be representative of actual quantities.		
4. Estimates do not reflect contractor pay volumes.		
Estimated Gravel Quantities (Stock CY)		
Gravel Subbases	1" Bed Course	264
	2" Course	2,361
Top Coat Chrs. & Seal (Paved Str)		2,277
Estimated Gravel Volume (Stock Length) (CY)		3,482
Estimated Total Limit of Disturbance (Acres)		17.426
Estimated Impoundment Limit of Disturbance (Acres)		0.849
Estimated Well Pad & Road Limit of Disturbance (Acres)		13.577
Well Pad Area Pre-Construction Elevation (Ft)		1023.9

SHT. NO.	SHEET TITLE
1	TITLE SHEET
2A-2C	SITE LAYOUT PLANS
3	PAD & IMPOUNDMENT SECTIONS
4	ACCESS ROAD SECTIONS
5A-5F	GENERAL NOTES & DETAILS
6	RESTORATION PLAN
7	PROPERTY MAP

RECORD OWNER	RECORD LOT #	RECORD AREA OF LOT	AREA WITHIN LOD
HG ENERGY II APPALACHIA, LLC	30-444-11.2	95.06 AC.	17.426 AC.
TOTAL LIMIT OF DISTURBANCE			17.426 AC.

	LATITUDE	LONGITUDE
1209 PAD & IMPOUNDMENT ENTRANCE	N 39.1488526	W 80.4408547

WELL #	LAT.	LONG.
N-1H	N 39.147888	W 80.443456
N-2H	N 39.147838	W 80.443458
N-3H	N 39.147880	W 80.443461
N-4H	N 39.148103	W 80.443470
N-5H	N 39.148023	W 80.443487
N-6H	N 39.146021	W 80.443464
N-7H	N 39.146028	W 80.442299
N-8H	N 39.147856	W 80.442296
N-9H	N 39.147846	W 80.442294
N-10H	N 39.148070	W 80.442302
N-11H	N 39.148111	W 80.442305
N-12H	N 39.148152	W 80.442308

THIS DRAWING IS CONTRACTUAL. THE DRAWING IS A TRUE COPY AND NOT SUBJECT TO BE REPRODUCED FOR ANY PURPOSES. ANY REVISIONS TO THIS DRAWING SHALL BE MADE BY THE REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT. ANY CHANGES TO THIS DRAWING SHALL BE MADE BY THE REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT. ANY CHANGES TO THIS DRAWING SHALL BE MADE BY THE REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT.

REVISION	DATE	DESCRIPTION
1	5/31/18	ISSUE FOR PERMIT
2	6/16/18	ADD URGENT REVISION, ADD DITCHING DETAILS, ADD STOCKPILE
3	6/12/18	IMPOUNDMENT REVISION, ALLEGED SITE BALANCE, ADD STOCKPILE
4	7/20/18	IMPOUNDMENT PERMITS COMMENTS
5	10/01/18	ADD REVISIONS TO PERMITS FOR PERMITS
6	10/12/18	MODIFICATIONS TO PERMITS FOR PERMITS, ADD PERMITS LABELS



TITLE SHEET  
HG 1209 PAD & IMPOUNDMENT  
UNION DISTRICT  
HARRISON COUNTY, WEST VIRGINIA

PREPARED FOR  
HG ENERGY II APPALACHIA, LLC  
PARKERSBURG, WEST VIRGINIA

APPROVED: MSP 05/23/2018  
CHECKED: MSP 05/23/2018  
DESIGN: LSA 05/23/2018  
PROJECT: No. 4000-PAD07715  
DRAWING NUMBER: PAD07715-001  
SHEET: 1

**WEST VIRGINIA** **CALL BEFORE YOU DIG!**  
Dial 811 or 800.245.4848  
West Utility of West Virginia

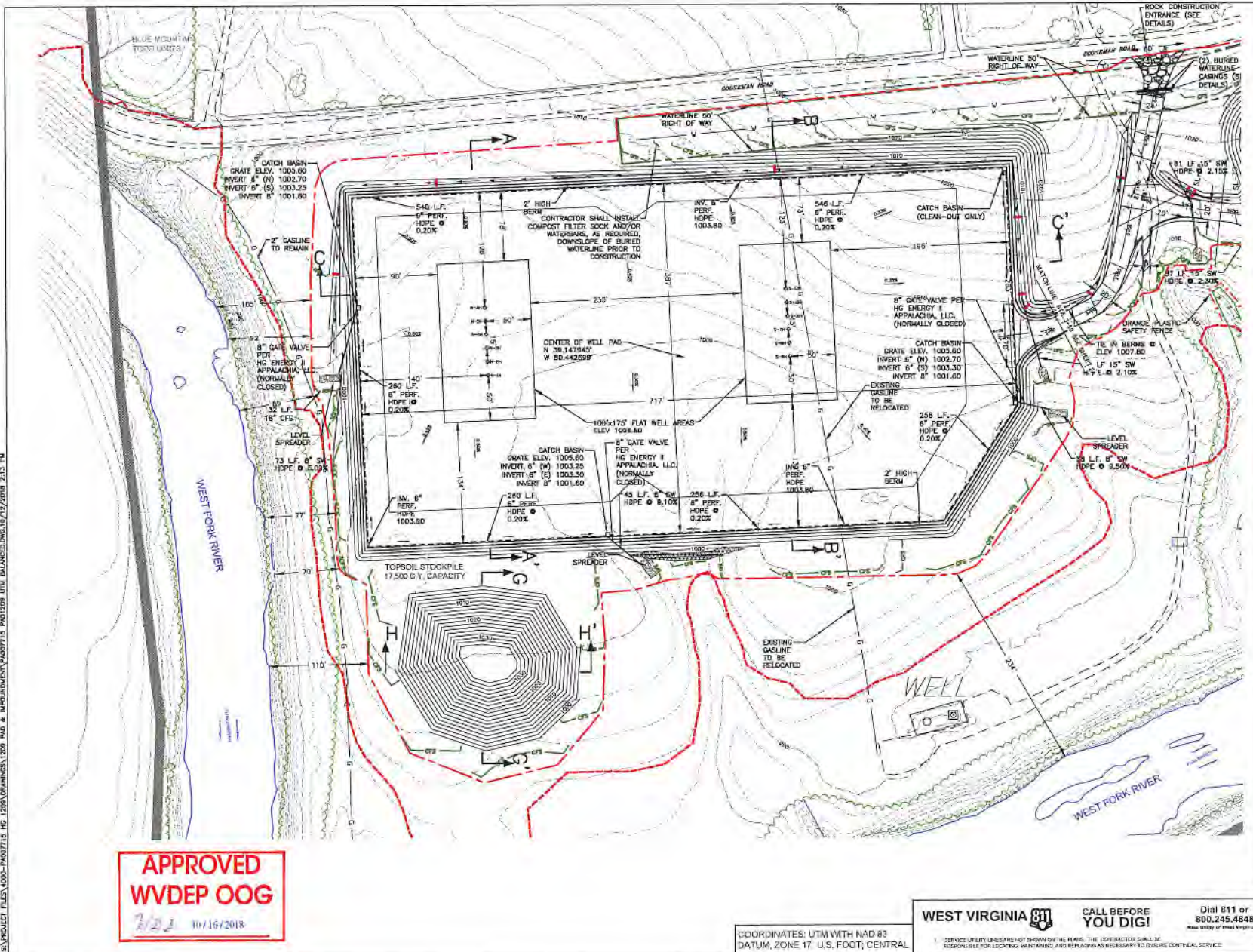
**Penn E&R**  
Environmental & Remediation, Inc.  
111 RYAN COURT, PITTSBURGH, PA 15205  
412-722-1222

S:\PROJECT FILES\4000-PAD07715 HG 1209 PAD & IMPOUNDMENT\07715 TITLE SHEET.DWG: 10/12/2018 1:58 PM

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S:\PROJECT FILES\4000-PA007115 HG 1209\DRAWINGS\1209 PAD & IMPOUNDMENT\PA007115 PAD1209 UTM BALANCED.DWG 10/12/2018 2:13 PM



**LEGEND**

- ROCK CHECK DAM
- RIPRAP APRON
- ACCESS ROAD/PAD CHANNEL
- CATCHMENT FILTER ROCK 6"
- STAKED CATCHMENT FILTER ROCK 6"
- APPROXIMATE LIMITS OF DISTURBANCE
- APPROXIMATE 30' WATERLINE RIGHT OF WAY
- APPROXIMATE PROPERTY LINE
- EXISTING ROCK CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED FINAL GRADE INDEX CONTOUR
- PROPOSED FINAL GRADE INTERMEDIATE CONTOUR
- LIMITS OF BLUE MOUNTAIN WARNINGS
- EXISTING TREE LINE
- PROPOSED 100' FLOODPLAIN BOUNDARY
- 8' CHAIN LINK FENCE WITH SECURITY WIRE
- EXISTING GASLINE

**SECTION**  
 A-A SECTION (SEE DETAIL)  
 B-B SECTION (SEE DETAIL)

- WEST VIRGINIA GENERAL NOTES**
- RETAINERS SHALL BE BUILT WITH THE CONTRACTOR WITH ALL DETAILS.
  - CONTRACTOR SHALL CONTACT WEST VIRGINIA UTILITIES PROTECTION SERVICES (1211 & 1212) TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. ANY UTILITIES NOT INDICATED IN THE DRAWINGS SHALL BE LOCATED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
  - THE SITE SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE PERMITS. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR OBTAINING ALL NECESSARY APPROVALS FROM THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES (WVDEP) AND THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION (WVDOT). CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY APPROVALS FROM THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES (WVDEP) AND THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION (WVDOT).
  - ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY APPROVALS FROM THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES (WVDEP) AND THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION (WVDOT).
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- REVISIONS**
- | NO. | DATE     | DESCRIPTION              |
|-----|----------|--------------------------|
| 1   | 5/27/18  | ISSUE FOR PERMIT         |
| 2   | 6/28/18  | REVISED PERMIT           |
| 3   | 6/12/18  | IMPLEMENTATION REVISIONS |
| 4   | 7/22/18  | IMPLEMENTATION REVISIONS |
| 5   | 10/01/18 | REVISED PERMIT           |
| 6   | 10/12/18 | IMPLEMENTATION REVISIONS |

**SCALE - FEET**

0 50 100 150

**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES**  
 STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES

SCALE - FEET  
 0 50 100 150

**SITE DEVELOPMENT PLAN WITH EROSION AND SEDIMENTATION CONTROLS**  
 HG 1209 PAD & IMPOUNDMENT  
 UNION DISTRICT  
 HARRISON COUNTY, WEST VIRGINIA

PREPARED FOR  
 HG ENERGY II APPALACHIA, LLC  
 PARKERSBURG, WEST VIRGINIA

APPROVED: MFP 09/23/2018  
 CHECKED: MFP 09/23/2018  
 DRAWN: MFP 09/23/2018  
 PROJECT NO: 4000-PA007115  
 DRAWING NUMBER: PAD007115-001  
 SHEET: 2/3

**Penn E&R**  
 Environmental & Restoration, Inc.  
 1111 RYAN COURT, PITTSBURGH, PA 15206  
 412-223-1225

**APPROVED WVDEP OOG**  
 10/16/2018

COORDINATES: UTM WITH NAD 83 DATUM, ZONE 17 U.S. FOOT; CENTRAL

**WEST VIRGINIA** **CALL BEFORE YOU DIG!**

Dial 811 or 800.245.4848  
 West Virginia's 24-hour utility locator