



west virginia department of environmental protection

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

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

Wednesday, November 28, 2018
WELL WORK PERMIT
Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD

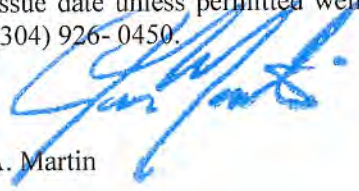
PARKERSBURG, WV 26101


Re: Permit approval for NAYS 1209 N-1H
47-033-05930-00-00

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-1H
Farm Name: HG ENERGY II APPALACHIA 
U.S. WELL NUMBER: 47-033-05930-00-00
Horizontal 6A New Drill
Date Issued: 11/28/2018



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Austin Caperton, Cabinet Secretary
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November 09, 2018

Aaron and Christina Medina
314 Gooseman Rd.
Jane Lew, WV 26378

Re: Surface Owner Comments on HG Energy, LLC Well Permit API No. 47-033-05930 on the proposed Nays 1209 Well Pad.

Dear Mr. & Mrs. Medina,

The Office of Oil and Gas (OOG) has completed its review of the above referenced permit application submitted by HG Energy. The Harrison County oil and gas inspector examined the site to ensure compliance with all applicable requirements. Also, your comments were sent to the applicant to ensure it is aware of your concerns. The applicant's response is enclosed for your records.

After considering your comments, the applicant's response, and the inspector's findings, the OOG has determined that the application meets the requirements set forth in Article 6A Chapter 22 of the West Virginia Code and Legislative Rule Title 35 Series 8. Consequently, the OOG is issuing the permit today. For your information and convenience, I am including with this letter a copy of the permit as issued.

Please contact Taylor Brewer at (304) 926-0499, extension 1547 if you have questions.

Sincerely,

Laura L. Adkins
WVDEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
Environmental Resource Specialist



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

July 3, 2018

James Martin
WV DEP - Office of Oil & Gas
601 57th Street
Charleston, WV 25304

RE: Response to a Letter from Aaron and Christina Medina - Harrison County, WV
Proposed Well Pad – Nays 1209, (47-033-05930)

Dear Mr. Martin,

Mr. Medina, in a letter received by the WV DEP, June 29, 2018, expressed several concerns regarding the proximity of the proposed drilling to his surface property by HG Energy II Appalachia, LLC (HGE). This letter is in response to property owners, Aaron and Christina Medina.

The location of the property site exceeds the 625' restriction from the center of the well pad for an occupied dwelling as determined by the WV DEP – Office of Oil and Gas. The measurements are identified and determined from the center of the well pad to the occupied dwelling.

The Impoundment and Well Site Pad Construction Plans were developed in accordance with the WV DEP's Erosion and Sediment Control Field Manual, by the Engineering Firm, Penn E&R, and supervised by Certified Professional Engineer, Matt Pierce. The plans are currently being reviewed by the WV DEP's Engineering Staff for compliance with the rules and regulations.

The distance from the center of the well pad to the dwellings were measured by a Licensed Surveyor and Crew using GPS measurements and are certified on the plat by George Six, LLS of Blue Mountain, Inc. These measurements are consistent with the WV DEP Rules and Regulations for location restrictions and also show the dwellings to be outside the 625' dwelling restriction.

The Impoundment does have a pad liner.

Noise and light levels are not a component of the WV DEP – Office Oil & Gas, Rules and Regulations pertaining to the drilling permitting review process; however HGE will use industry BMP's to mitigate noise and light issues. .

I trust we have adequately addressed Mr. and Mrs. Medina's concerns and respectfully request the subject drilling permit be issued by the WV DEP – Office of Oil and Gas.

Sincerely,

Diane White

Diane White

CC Wade Stansberry
Sam Ward – DEP Inspector
Aaron and Christina Medina

June 28, 2018

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304

Re: HG Energy
Operator Well Nays 1209 N-1H/Cone 1209 N-1H
Well Pad Name: Nays 1209/Cone 1209
Gooseman Road/ Kincheloe Road, Jane Lew, WV
Harrison County/Union

Dear Chief,

We received a revised copy of HG Energy's Notice of Application on June 15th contrary to the provided documents stating the date of notice on May 31st. We requested several meetings to review and discuss these documents and maps with HG to no avail. These are our current concerns:

- 1.) When we look at the map it doesn't look like 625 ft. to the center of the pad.
- 2.) We think the impoundment is part of the well pad and we think the impoundment is not 625 ft. from our house.
- 3.) The soil erosions and sediment control plan shows a limit of disturbance but there are two rectangles inside the limit that are the actual well pads at the center of one of those well pads is not 625 ft. from our house.
- 4.) We don't see that there is a pad liner. We only see a catch basin.
- 5.) The "Permit Denial or Condition" section of the materials that were sent to us says that you may deny or condition a permit based on "a hazard of the safety of persons". We are aware that the studies done pursuant to the Horizontal Well Act showed noise decibel levels that the World Health Organization and EPA say can cause sleep disturbance and other health disturbances such as high blood pressure. That is a concern to the safety of our family day and night, and we homeschool our young children so they would be even more affected than an adult might be.
- 6.) The studies have also shown health problems and disturbances with light from the 24 hour work cycle of drilling a well and we see nothing in the proposal that would limit light from coming into our house.

Please consider these concerns that will deeply impact our family.

Sincerely,



Aaron and Christina Medina
314 Gooseman Rd.
Jane Lew, WV 26378
(304) 677.8821



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
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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

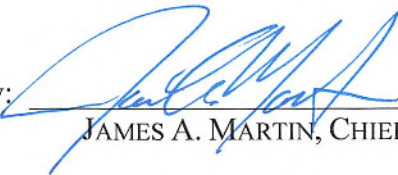
West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland. The Office of Oil and Gas grants the request for a waiver for the 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.

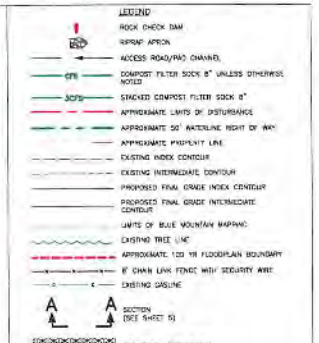
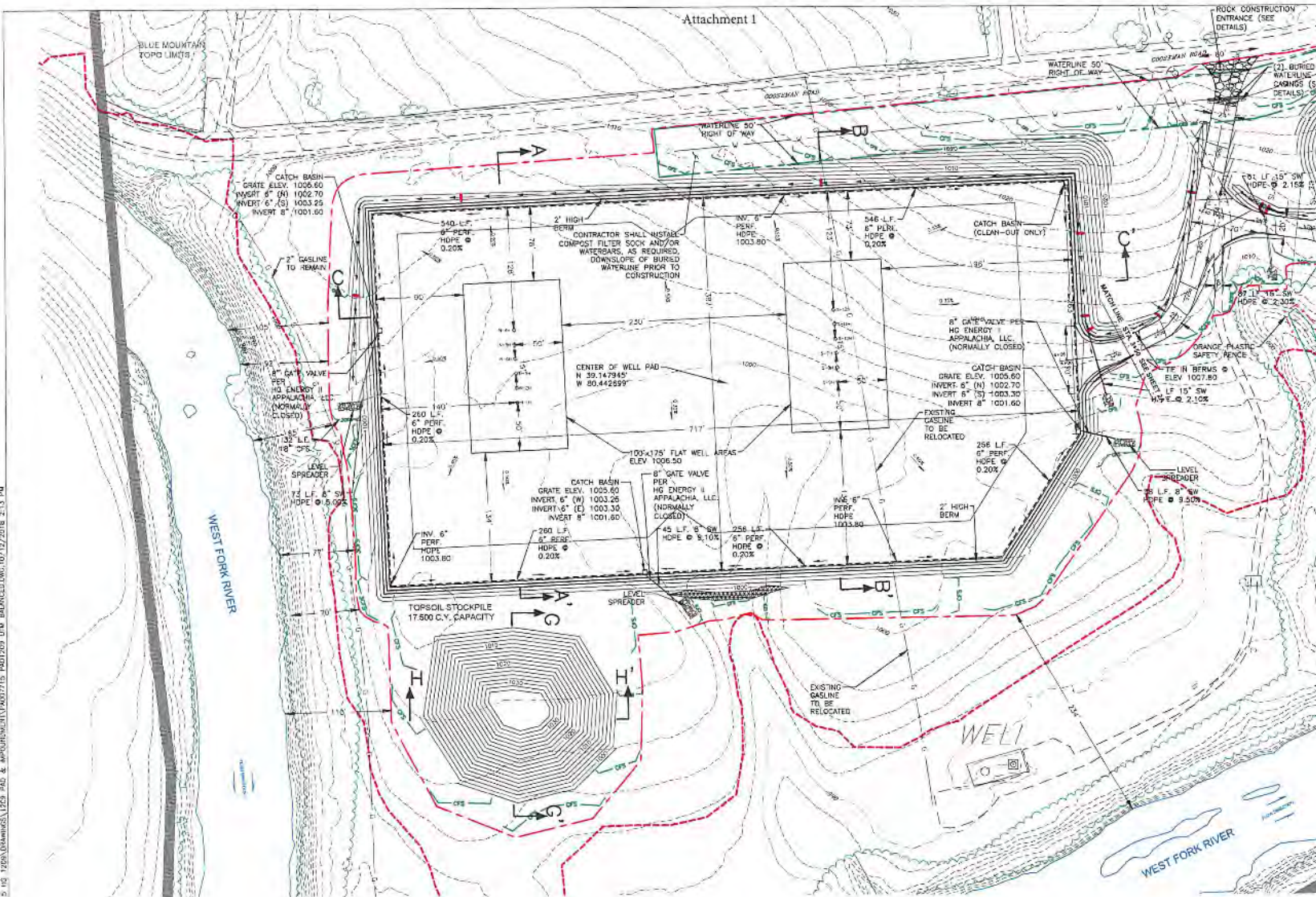
Thus ORDERED, the 16th day of October, 2018.

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

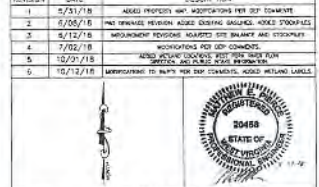
Attachment 1



- WEST VIRGINIA GENERAL NOTES**
1. REFER TO THE SHEET WITH THE CONSTRUCTION NOTES AND DETAILS.
 2. CONTRACTOR SHALL CONTACT WEST VIRGINIA UTILITIES PROTECTION SERVICES (VIPS) A DIVISION OF DEP PRIOR TO EXCAVATION, DRILLING, OR ANY WORK THAT MAY INTERFERE WITH OR DAMAGE ANY UTILITIES OR STRUCTURES SHOWN ON THE PLAN.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES WITH JURISDICTION OVER THE PROJECT.
 4. ALL EXCAVATION SHALL BE PROTECTED BY SHIELDING FROM EXCAVATION. SHIELDING SHALL FOLLOW WEST VIRGINIA DESIGN AND CONSTRUCTION CONTROL PLAN REVISED MAY 2017.
 5. EXISTING INDEX CONTOUR SHALL BE MAINTAINED TO A MINIMUM OF 10' UNLESS OTHERWISE NOTED.
 6. EXISTING INDEX CONTOUR SHALL BE MAINTAINED TO A MINIMUM OF 10' UNLESS OTHERWISE NOTED.
 7. EXISTING INDEX CONTOUR SHALL BE MAINTAINED TO A MINIMUM OF 10' UNLESS OTHERWISE NOTED.
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 14. EXISTING INDEX CONTOUR SHALL BE MAINTAINED TO A MINIMUM OF 10' UNLESS OTHERWISE NOTED.
 15. EXISTING INDEX CONTOUR SHALL BE MAINTAINED TO A MINIMUM OF 10' UNLESS OTHERWISE NOTED.

REVISIONS:

NO.	DATE	DESCRIPTION
1	2/21/18	ADDED PROPOSED AND MODIFICATIONS PER DEP COMMENTS
2	5/05/18	REVISED PER DEP COMMENTS AND DEP COMMENTS
3	5/12/18	REVISIONS PER DEP COMMENTS AND DEP COMMENTS
4	7/02/18	REVISIONS PER DEP COMMENTS
5	10/27/18	ADDED WATERLINE AND DEP COMMENTS
6	10/27/18	ADDED WATERLINE AND DEP COMMENTS



SCALE - FEET
0 20 100 150

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: **WEST 05/23/2018**
 CHECKED: **WEST 05/23/2018**
 DESIGN: **WEST 05/23/2018**

Penn E&R
 Environmental & Remediation, Inc.
 111 RYAN COURT, HARRISBURG, PA 17305
 412-732-1222

S:\PROJECT FILES\4000-PA027715_10_1209\DRAWINGS\1209_PAD & IMPOUNDMENT\1209T15_P01012018_213.PLM

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 Utility of West Virginia

1. BECAUSE OF THE RISK OF INJURY OR DEATH TO THE PUBLIC, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES WITH JURISDICTION OVER THE PROJECT.

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.

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.

- 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.

PERMIT CONDITIONS

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

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

PERMIT CONDITIONS

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

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

<u>494519932</u>	<u>Harrison</u>	<u>Union</u>	<u>West Milford 7.5'</u>
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Operator ID County District Quadrangle

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

SDW
10/22/2018

6) Existing Pad: Yes or No No

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: 20,145'

11) Proposed Horizontal Leg Length: 12,119'

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: _____

WW-6B
(04/15)

API NO. 47- 33 - 05930
 OPERATOR WELL NO. Nays 1209 N-1H
 Well Pad Name: Nays 1209

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	20145'	20145'	20% excess yield = 1.15, tail yield = 1.20
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 CTS
Production	5 1/2"	8 1/2"	.415	14520	12500	Type 1/Class A	20% excess yield = 1.15, tail yield 1.20
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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

Drill the vertical depth to the Marcellus at an estimated total vertical depth of approximately 6900 feet. Drill horizontal leg to estimated 12119 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.
Casi - 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 3 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 - 15.8 ppg PNE-1 + 3% bwoc CaCl₂ 40% Excess Yield = 1.20, CTS
Coal - Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl₂ 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl₂ 20% Excess, CTS
Intermediate - Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl₂ 40% Excess, Tail: 15.3 ppg PNE-1 + 2.5% bwoc CaCl₂ 20% Excess, CTS
Production - Lead: 14.5 ppg PQZ-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=1.15/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 mud 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.

*Note: Attach additional sheets as needed.



**1209 N-1H
Marcellus Shale Horizontal
Harrison County, WV**

Ground Elevation			1209 N-1H SHL				237349.95N 1732374E			
Azm			1209 N-1H LP				237041.13N 1729956.49E			
WELLBORE DIAGRAM			1209 N-1H BHL				248533.57N 1726109.52E			
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	0	135, 500	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
			Fresh Water	0	600					
	17.5"	13-3/8" 54.5# J-55 BTC	Kittaning Coal	660	665	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 = 0.380" wall thickness Burst=2730 psi
			Little/Big Lime	1126 / 1167	1151 / 1243					
			Injun / Gantz (Storage)	1243 / 1535	1349 / 1685					
	12.25"	9-5/8" 40# J-55 BTC	Intermediate 1 (Shoe 50' below storage)	0	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 first 2 joints then every third joint to 100' form 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
			Fifty / Thirty Foot	1650 / 1730	1697 / 1742					
			Gordon Stray / Gordon	1785 / 1850	1850 / 1940					
			5th Sand	2035	2070					
	8.5" Vertical	5-1/2" 23# P-110 HC CDC HTQ	Bayard Sand	2125	2160	9.0ppg SOBM	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 MPA170 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.	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=14520 psi Note:Actual centralizer schedules may be changed due to hole conditions
			Intermediate 2	0	2500					
Speechley			2745	2763						
Balltown			2965	3005						
Benson			4050	4083						
West Falls			4620	5865						
Rhinestreet			5865	6140						
Cashaqua			6140	6341						
Middlesex			6341	6421						
West River			6421	6514						
8.5" Curve	5-1/2" 23# P-110 HC CDC HTQ	Burkett	6514	6540	11.5ppg-12.5ppg SOBM	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 MPA170 20% Excess Lead Yield=1.19 Tail Yield=1.94 CTS	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=14520 psi Note:Actual centralizer schedules may be changed due to hole conditions	
		Tully Limestone	6540	6644						
		Hamilton	6644	6863						
8.5" Lateral	5-1/2" 23# P-110 HC CDC HTQ	Marcellus	6863	6914	11.5ppg-12.5ppg SOBM	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 MPA170 20% Excess Lead Yield=1.19 Tail Yield=1.94 CTS	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=14520 psi Note:Actual centralizer schedules may be changed due to hole conditions	
		TMD / TVD (Production)	20145	6900						
		Onondaga	6914							

LP @ 6900' TVD / 8026' MD

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

+/-12119' ft Lateral

TD @ +/-6900' TVD
+/-20145' MD

X=centralizers

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Nays 1209 Well Pad (N-1H)
Cement Additives

WV Department of
Environmental Protection

Material Name	Material Type	Material Description	CAS #																		
Premium NE-1	Portland Cement	Premium NE-1 is a portland cement with early compressive strength properties.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Portland cement</td> <td>90 - 100</td> <td>65997-15-1</td> </tr> <tr> <td>Calcium oxide</td> <td>1 - 5</td> <td>1305-78-8</td> </tr> <tr> <td>Magnesium oxide</td> <td>1 - 5</td> <td>1309-48-4</td> </tr> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>0.1 - 1</td> <td>14808-60-7</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Portland cement	90 - 100	65997-15-1	Calcium oxide	1 - 5	1305-78-8	Magnesium oxide	1 - 5	1309-48-4	Crystalline silica: Quartz (SiO2)	0.1 - 1	14808-60-7			
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Bentonite	Extender	Commonly called gel, it is a clay material used as a cement extender and to control excessive free water.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>bentonite</td> <td>90 - 100</td> <td>1302-78-9</td> </tr> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>5 - 10</td> <td>14808-60-7</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	bentonite	90 - 100	1302-78-9	Crystalline silica: Quartz (SiO2)	5 - 10	14808-60-7									
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Calcium Chloride	Accelerator	A powdered, flaked or pelletized material used to decrease thickening time and increase the rate of strength development	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Calcium chloride</td> <td>90 - 100</td> <td>10043-52-4</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Calcium chloride	90 - 100	10043-52-4												
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Cello Flake	Lost Circulation	Graded (3/8 to 3/4 inch) cellophane flakes used as a lost circulation material.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>No hazardous ingredient</td> <td></td> <td></td> </tr> </tbody> </table>	Ingredient name	%	CAS number	No hazardous ingredient														
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FP-13L	Foam Preventer	FP-13L is a clear liquid organic phosphate antifoaming agent used in cementing operations. It is very effective minimizing air entrapment and preventing foaming tendencies of latex systems.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Tributyl phosphate</td> <td>90 - 100</td> <td>126-73-8</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Tributyl phosphate	90 - 100	126-73-8												
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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	Gas Migration	Multi-purpose polymer additive used to control free fluid, fluid loss, rheology, and gas migration.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>No hazardous ingredient</td> <td></td> <td></td> </tr> </tbody> </table>	Ingredient name	%	CAS number	No hazardous ingredient														
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Poz (Fly Ash)	Base	A synthetic pozzolan, (primarily Silicon Dioxide). When blended with cement, Pozzolan can be used to create lightweight cement slurries used as either a filler slurry or a sulfate resistant completion cement.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>5 - 10</td> <td>14808-60-7</td> </tr> <tr> <td>Calcium oxide</td> <td>1 - 5</td> <td>1305-78-8</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Crystalline silica: Quartz (SiO2)	5 - 10	14808-60-7	Calcium oxide	1 - 5	1305-78-8									
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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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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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33-05930

List of Frac Additives by Chemical Name and CAS #**Nays 1209 Well Pad (N-1H)**

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)

JUN 18 2018

API Number 47 - 33 - 05930

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Operator's Well No. Nays 1209 N-1H

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
5/29/2018*

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

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

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

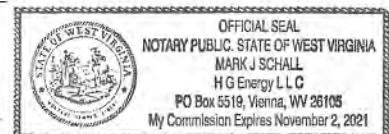
Company Official (Typed Name) Diane White

Company Official Title Agent

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

[Signature] Notary Public

My commission expires 11/21/2021



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: SED Warratt

Comments: Pre-Seed/Mulch as soon as reasonably possible per regulation.
Upgrade E&S if needed per WV DEP E&S manual

Title: Oil & Gas Inspector Date: 5/29/2018

Field Reviewed? Yes No

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Environmental Protection

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

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

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

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

Water Haul off Companies:

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

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

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

Nuverra Environmental Solutions
11942 Veterans Memorial Highway
Masontown, WV 26542

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

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

Disposal Locations:

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

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

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

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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

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

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

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

33-05930

Cuttings Disposal/Site Water

Cuttings - Haul off Company:

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

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

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

Disposal Locations:

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

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

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

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

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

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

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

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

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

Brooke County Landfill Permit # SWF-103-87 / WV 0109029
Rd 2 Box 410
Collfers, WV 26035
304-748-0014

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

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

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

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

SOS D#1 (SWIW #12)
Permit # 34-059-2-4202-00-00
Silcor Oilfield Services, Inc.
2939 Hubbard Road
Youngstown, PH 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 Bu keye UIC Barnesville 1 & 2
CNX Gas Company, LLC
1000 Consol Energy Drive
Permit # 34-013-2-0609-00-00
Permit # 34-013-2-0614-00-00
304-323-6568

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

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

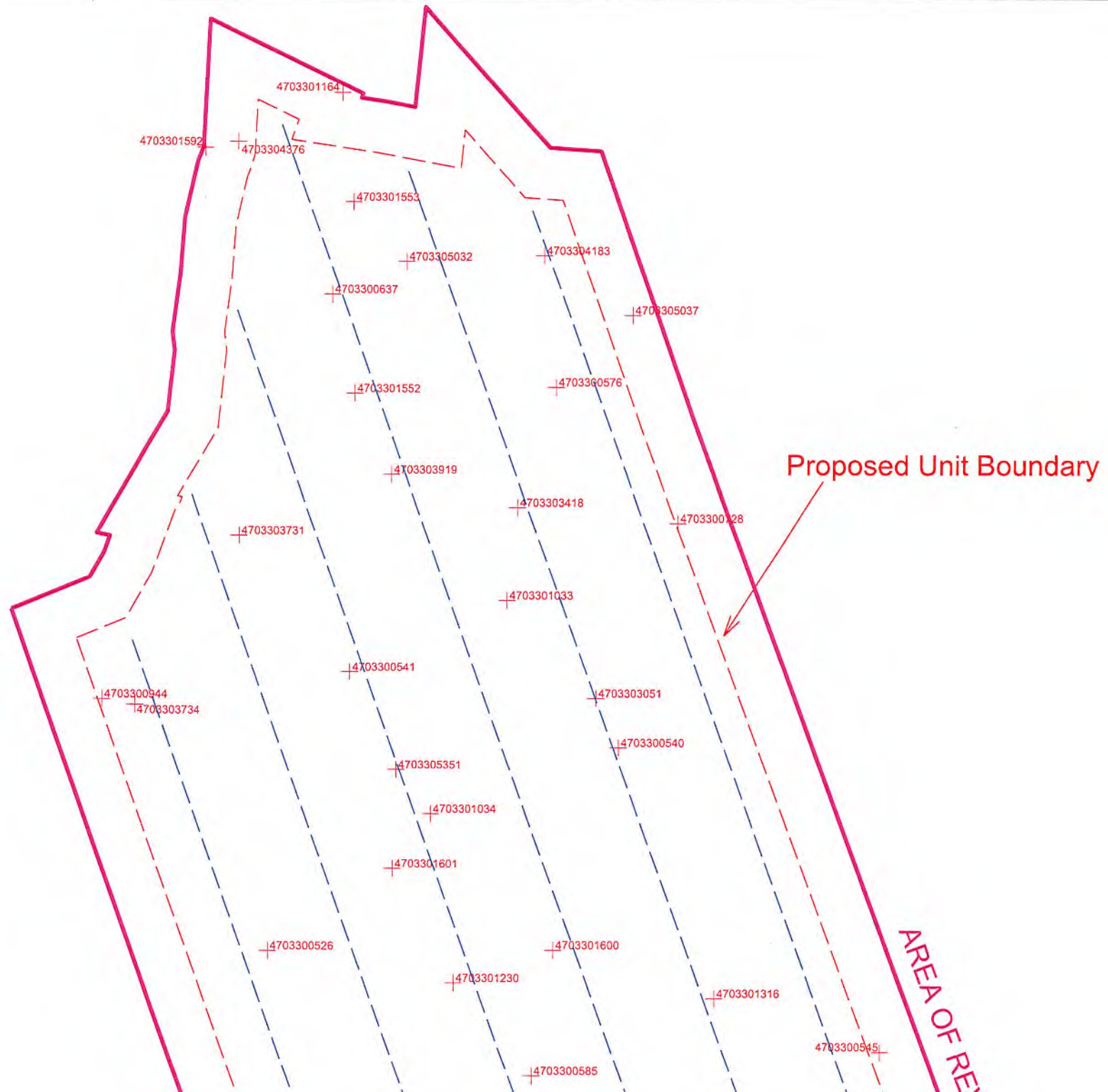
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[Faint handwritten notes and signatures]

33-05930



Proposed Wellbores

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WV Department of
Environmental Protection

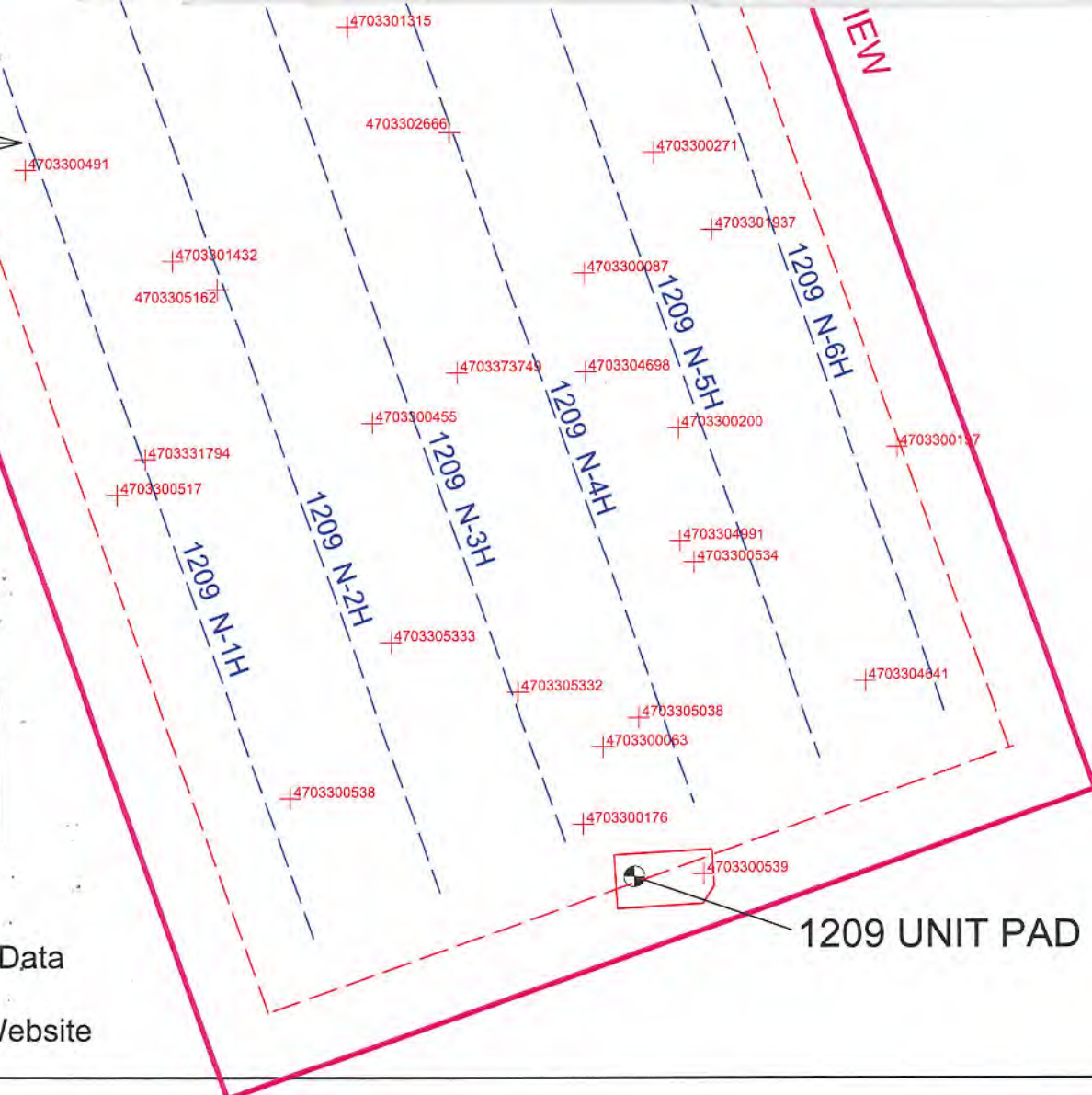
AREA OF REVIEW

IEW

Well Key

- 4703300538 Conventional Vertical Well
- Proposed Horizontal Marcellus Well

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



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



SCALE: 1" = 1,320'

33-05930

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

33-05938

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	4703331405	HARRISON	Harriet Washburn	Hope Natural Gas Company	Hampshire Grp	Gas	2,567	UNKOWN	39.175913	-80.465601
55	4703331459	HARRISON	Jacob P Post	Hope Natural Gas Company	Hampshire Grp	Gas	2,229	UNKOWN	39.187089	-80.450954
56	4703331461	HARRISON	W M Burnside	Hope Natural Gas Company	Hampshire Grp	Gas	2,189	UNKOWN	39.175043	-80.443686
57	4703331794	HARRISON	W J Law	Hope Natural Gas Company	undetermined unit	not available		UNKOWN	39.156599	-80.456171
58	4703331843	HARRISON	W T Law	Consolidated Gas Supply Corp.	NA	NA	NA	UNKOWN	39.171269	-80.463552
59	4703370044	HARRISON	Burnside, Mary J 1	Manufacturers Light & Heat Co.	NA	NA	NA	UNKOWN	39.168814	-80.443314
60	4703370124	HARRISON	McConkey, Jacob 1	Fisher Oil	NA	NA	NA	UNKOWN	39.185214	-80.457290
61	4703370342	HARRISON	Austin Hardway 1	Hope Natural Gas Company	NA	NA	NA	UNKOWN	39.152099	-80.444245
62	4703373746	HARRISON	W V Brannon	----- unknown -----	NA	NA	NA	UNKOWN	39.144262	-80.452444
63	4703373747	HARRISON	Arthur Rhodes	----- unknown -----	NA	NA	NA	UNKOWN	39.144117	-80.453935
64	4703373748	HARRISON	Edmond Southern	----- unknown -----	NA	NA	NA	UNKOWN	39.153841	-80.439214
65	4703373749	HARRISON	M S Deison	----- unknown -----	NA	NA	NA	UNKOWN	39.158340	-80.447972
66	4703373750	HARRISON	G W Riffle	Hope Natural Gas Company	NA	NA	NA	UNKOWN	39.161678	-80.450022

33-05930

67	4703373751	HARRISON	G W Riffle	----- unknown -----	NA	NA	NA	UNKOWN	39.163275	-80.446295
68	4703373752	HARRISON	G W Washington	Hope Natural Gas Company	NA	NA	NA	UNKOWN	39.168511	-80.455798
69	4703373753	HARRISON	M G Law	----- unknown -----	NA	NA	NA	UNKOWN	39.160227	-80.453376
70	4703373759	HARRISON	George Washburn	----- unknown -----	NA	NA	NA	UNKOWN	39.179252	-80.462061
71										

SOURCE: WVGES DATASET (2017) and WVDEP WEBSITE

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HG Energy II Appalachia, LLC

Site Safety Plan

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WV Department of
Environmental Protection

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

May 2018: Version 1

*SDW
5/29/2018*

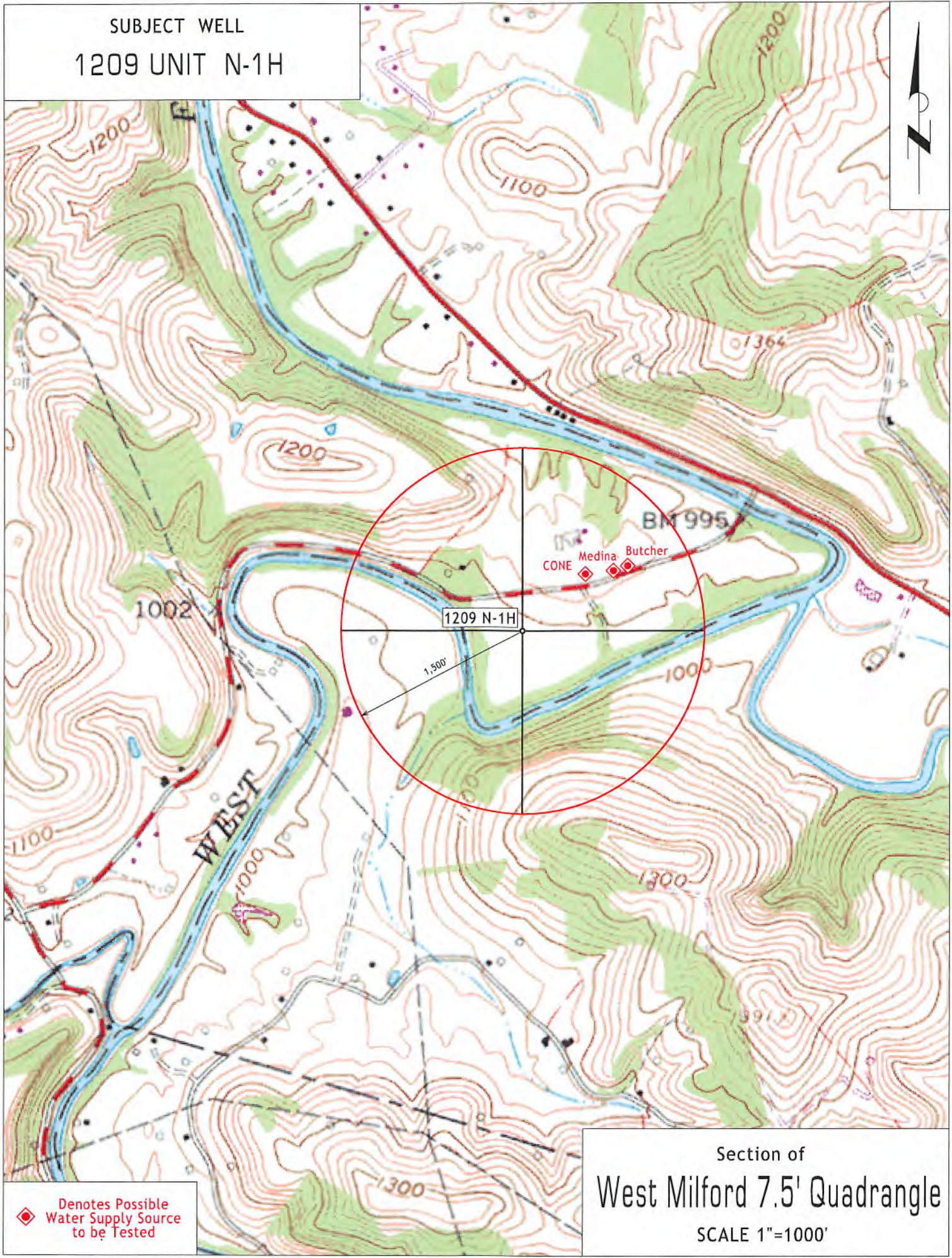
**For Submission to
West Virginia Department of Environmental Protection,
Office of Oil and Gas**

HG Energy II Appalachia, LLC

5260 Dupont Road

Parkersburg, WV 26101

SUBJECT WELL
1209 UNIT N-1H



◆ Denotes Possible
Water Supply Source
to be Tested

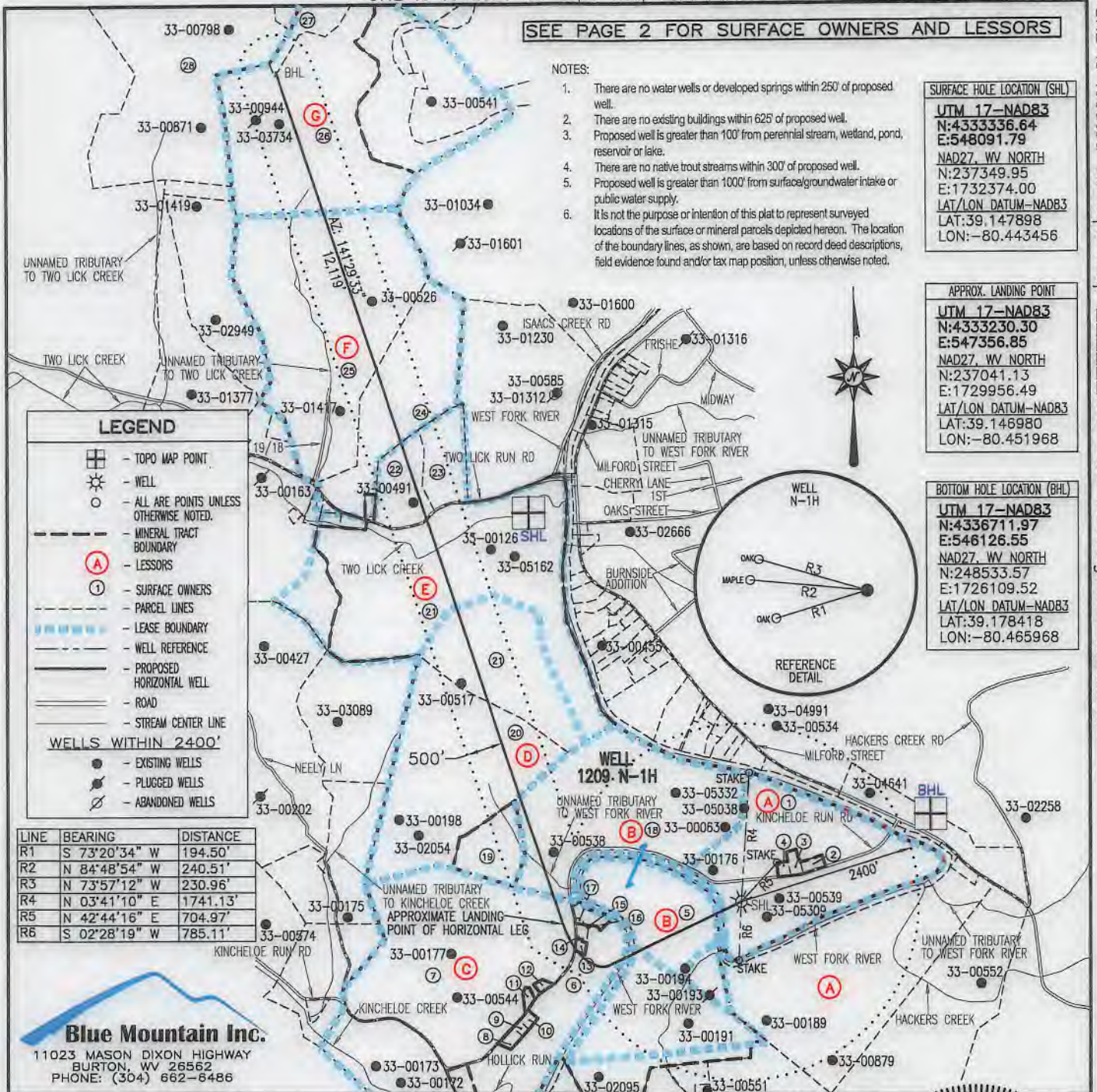
Section of
West Milford 7.5' Quadrangle

SCALE 1"=1000'

BHL is located on topo map 10,896 feet south of Latitude: 39° 12' 30"
 SHL is located on topo map 6,836 feet south of Latitude: 39° 10' 00"

BHL is located on topo map 2,164 feet west of Longitude: 80° 27' 30"
 SHL is located on topo map 7,598 feet west of Longitude: 80° 25' 00"

SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS



FILE #: 1209 N-1H
 DRAWING #: 1209 N-1H
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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: George D. Six
 R.P.E.: _____ L.L.S.: P.S. No. 2000

GEORGE D. SIX
 LICENSED
 No. 2000
 STATE OF
 WEST VIRGINIA
 PROFESSIONAL SURVEYOR

PLACE SEAL HERE

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

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

DATE: MAY 30, 2018
 OPERATOR'S WELL #: 1209 N-1H
 API WELL #: 47 33 05930 H6A
 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: 1175.764±

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: 6,760'± TMD: 20,031'±

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

City PARKERSBURG State WV Zip Code 26101
 Address 5280 DUPONT ROAD
 WELL OPERATOR HG ENERGY II APALACHIA, LLC
 DESIGNATED AGENT DIANE C. WHITE
 TARGET FORMATION: MARCELLUS
 ESTIMATED DEPTH: TMD: 50,031'±
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY):
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE

OIL & GAS ROYALTY OWNER: ANN COVINGTON, ET AL ACREAGE: 1175.784±
 SURFACE OWNER: HG ENERGY II APALACHIA, LLC ACREAGE: 92.08±
 COUNTY/DISTRICT: HARRISON / UNION QUADRANGLE: WEST MILFORD, WV 72'
 WATERSHED: MIDDLE WEST FORK CREEK

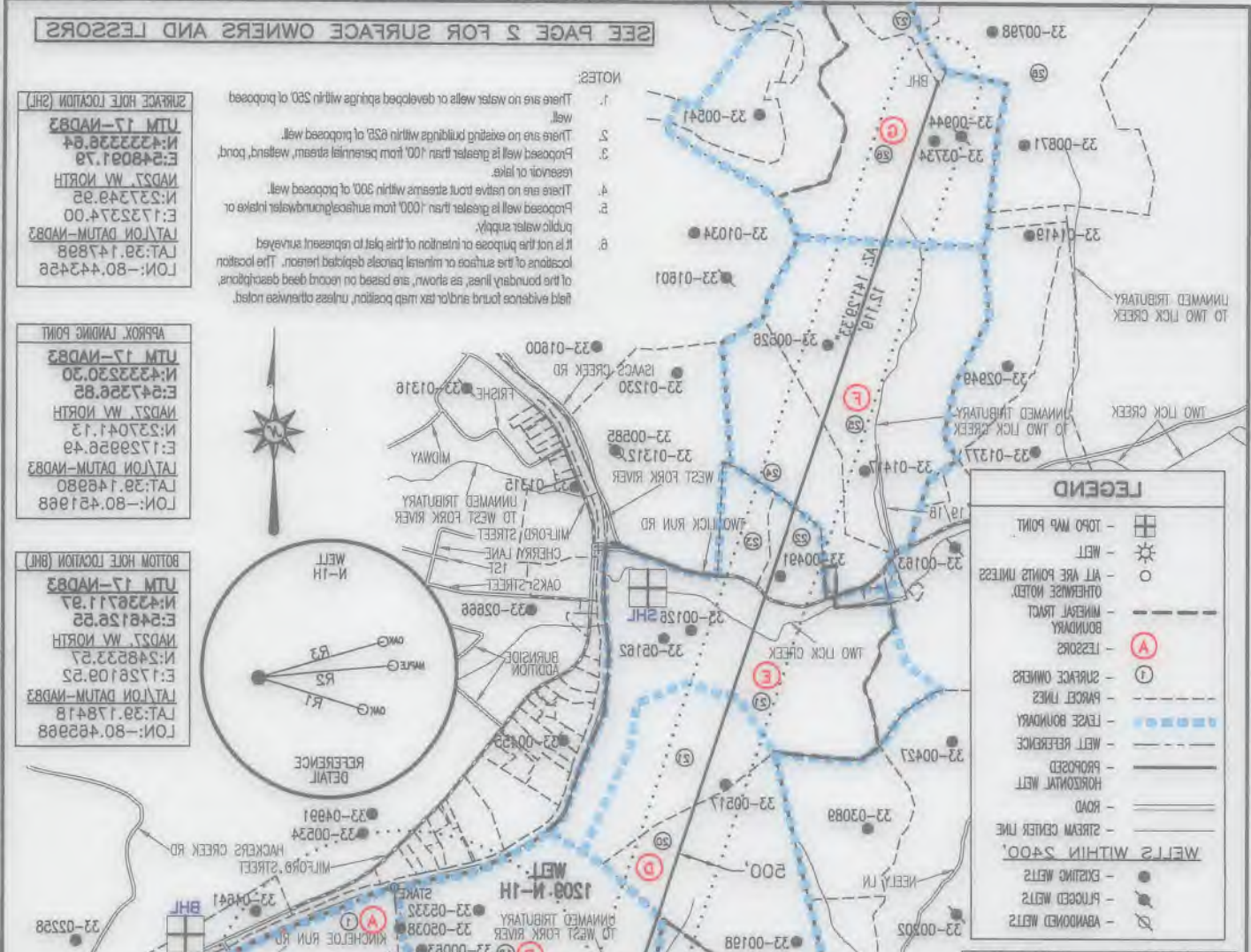
Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

CHARLESTON, WV 25304
 601 57TH STREET
 OFFICE OF OIL & GAS
 WADep
 UNITED STATES TOPOGRAPHIC MAPS
 (+) DENOTES LOCATION OF WELL ON
 OF ELEVATION: THOMAS 1488.81
 PROVEN SOURCE: U.S.G.S. MONUMENT
 OF ACCURACY: 1/2500
 MINIMUM DEGREE
 SCALE: 1" = 2000'
 DRAWING #: 1209 N-1H
 FILE #: 1209 N-1H

R.P.E.: _____ Signed: *George D Six*
 L.L.S.: P.S. No. 2000
 THE DEPARTMENT OF ENVIRONMENTAL PROTECTION,
 LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY
 BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY
 PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND
 THE UNDERSIGNED, HEREBY CERTIFY THAT THIS



Blue Mountain Inc.
 11023 MASON DIXON HIGHWAY
 BURTON, WV 26222
 PHONE: (304) 682-8488



BHL is located on topo map 10,898 feet south of Latitude: 39° 12' 30"
 SHL is located on topo map 6,836 feet south of Latitude: 39° 10' 00"

BHL is located on topo map 7,988 feet west of Longitude: 80° 22' 00"
 SHL is located on topo map 5,164 feet west of Longitude: 80° 27' 30"

1209 N-1H

PAGE 2 OF 2

	SURFACE OWNER	DIST-TM/PAR
1	HG ENERGY II APPALACHIA, LLC	20-444/11.2
2	TIMOTHY W. BUTCHER	20-444/11.3
3	AARON C. & CHRISTINA P. MEDINA	20-444/11
4	CONE GATHERING LLC & CONE MIDSTREAM DEVCO II LP	20-444/11.1
5	ROCK GARTON	20-444/26
6	DANNY LEE STICKEL	20-444/19.3
7	DANNY LEE STICKEL	20-444/19.11
8	NANCY C. LESHO	20-444/19.5
9	ERVIN W. & MARGARET SUTTON	20-444/19.4
10	BETTY WILLIAMS (LE) & MARGARET E. SUTTON ET AL	20-444/19.6
11	NATHANIEL A. NAY	20-444/19.13
12	LEONARD R. & PATRICIA G. WILLIAMS	20-444/19.1
13	BERTIS MCCARTHY	20-444/19.9
14	BERTIS MCCARTHY	20-444/19.8
15	DANNY LEE STICKEL	20-444/19.7
16	DANNY LEE STICKEL	20-444/19.12
17	BERTIS MCCARTHY	20-444/19.10
18	DANNY LEE & ALICIA A. STICKEL	20-444/5
19	DANNY LEE STICKEL	20-444/4
20	BRADLEY S. & TERRI L. STUTLER	20-444/3
21	SHARON S. MCDONALD	20-424/47
22	JAMES R. & LULU L. MCDUGAL REVOCABLE TRUST	20-424/35
23	BRENDA L. & MICHAEL TUCKWILLER	20-424/15
24	JAMES IVAN MCDONALD	20-424/14
25	JAMES IVAN MCDONALD	20-424/1
26	AL-N-EL FARMS LLC	20-404/30.1
27	VERONICA M. & JESSE RAY CUNNINGHAM, JR.	20-404/40.3
28	RONALD C. FRAGMIN	20-404/39

	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	A. W. & MARY RHODES	20-444/19.3
		20-444/19.11
		20-444/19.8
D	W. J. LAW ET UX	20-444/3
E	M. G. LAW & ET AL	20-424/47
		20-424/35
F	W. T. LAW ET UX	20-424/14
		20-424/1
G	GEORGE WASHBURN ET AL	20-404/30.1
		20-404/40.3

SURFACE HOLE LOCATION (SHL)	
<u>UTM 17-NAD83</u>	
N:4333336.64	
E:548091.79	
<u>NAD27, WV NORTH</u>	
N:237349.95	
E:1732374.00	
<u>LAT/LON DATUM-NAD83</u>	
LAT:39.147898	
LON:-80.443456	

APPROX. LANDING POINT	
<u>UTM 17-NAD83</u>	
N:4333230.30	
E:547356.85	
<u>NAD27, WV NORTH</u>	
N:237041.13	
E:1729956.49	
<u>LAT/LON DATUM-NAD83</u>	
LAT:39.146980	
LON:-80.451968	

BOTTOM HOLE LOCATION (BHL)	
<u>UTM 17-NAD83</u>	
N:4336711.97	
E:546126.55	
<u>NAD27, WV NORTH</u>	
N:248533.57	
E:1726109.52	
<u>LAT/LON DATUM-NAD83</u>	
LAT:39.178418	
LON:-80.465968	

47-033-05930 H6A

MAY 30, 2018

WW-6A1
(5/13)

Operator's Well No. Nays 1209 N-1H

**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"

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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

Tract #	GRANTOR/LESSOR	GRANTEE/LESSEE	DEED BOOK	PAGE
2	W T LAW AND B.C. LAW	HOPE NATURAL GAS COMPANY	248	52
	HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPERATION	903	179
	CONSOLIDATED GAS SUPPLY CORPERATION	CONSOLIDATED GAS TRANSMISSION CORPERATION	1136	250
	CONSOLIDATED GAS TRANSMISSION CORPERATION	CNG GAS TRANSMISSION CORPERATION	51	795
	CNG GAS TRANSMISSION CORPERATION	DOMINION TRANSMISSION, INC	58	362
	DOMINION TRANSMISSION, INC	CNX GAS COMPANY, LLC	1522	33
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1543	1235
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1584	942
	NOBLE ENERGY, INC	HG ENERGY II APPALACHIA, LLC	TBD	TBD
3	M. G. LAW AND I.L. LAW	HOPE NATURAL GAS COMPANY		
	HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPERATION	903	179
	CONSOLIDATED GAS SUPPLY CORPERATION	CONSOLIDATED GAS TRANSMISSION CORPERATION	1136	250
	CONSOLIDATED GAS TRANSMISSION CORPERATION	CNG GAS TRANSMISSION CORPERATION	51	795
	CNG GAS TRANSMISSION CORPERATION	DOMINION TRANSMISSION, INC	58	362
	DOMINION TRANSMISSION, INC	CNX GAS COMPANY, LLC	1522	33
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1543	1235
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1584	942
	NOBLE ENERGY, INC	HG ENERGY II APPALACHIA, LLC	TBD	TBD
6	A W RHODES AND MARY RHODES	HOPE NATURAL GAS COMPANY	175	162
	HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPERATION	903	179
	CONSOLIDATED GAS SUPPLY CORPERATION	CONSOLIDATED GAS TRANSMISSION CORPERATION	1136	250
	CONSOLIDATED GAS TRANSMISSION CORPERATION	CNG GAS TRANSMISSION CORPERATION	51	795
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	DOMINION TRANSMISSION, INC	CNX GAS COMPANY, LLC	1522	33
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1543	1235
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1584	942
	NOBLE ENERGY, INC	HG ENERGY II APPALACHIA, LLC	TBD	TBD
4	W J LAW AND LUCY A. LAW, HIS WIFE	HOPE NATURAL GAS COMPANY	175	168
	HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPERATION	903	179
	CONSOLIDATED GAS SUPPLY CORPERATION	CONSOLIDATED GAS TRANSMISSION CORPERATION	1136	250
	CONSOLIDATED GAS TRANSMISSION CORPERATION	CNG GAS TRANSMISSION CORPERATION	51	795
	CNG GAS TRANSMISSION CORPERATION	DOMINION TRANSMISSION, INC	58	362
	DOMINION TRANSMISSION, INC	CNX GAS COMPANY, LLC	1522	33
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1543	1235
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1584	942
	NOBLE ENERGY, INC	HG ENERGY II APPALACHIA, LLC	TBD	TBD
1	George W. Washburn and Harriet A. Washburn	Reserve Gas Company	193	449
	Reserve Gas Company	Hope Natural Gas	508	573
	Hope Natural Gas	Consolidated Gas Supply Corporation	903	179
	Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	1136	250
	Consolidated Gas Transmission Corporation	CNG Transmission Corporation	51	795
	CNG GAS TRANSMISSION CORPERATION	DOMINION TRANSMISSION, INC	58	362
	DOMINION TRANSMISSION, INC	CNX GAS COMPANY, LLC	1522	33
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1543	1235
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1584	942
	NOBLE ENERGY, INC	HG ENERGY II APPALACHIA, LLC	TBD	TBD
5	J. A. Hardway and Jane Hardway	South Penn Oil Company	113	440
	South Penn Oil Company	Hope Natural Gas Company	240	210
	Hope Natural Gas	Consolidated Gas Supply Corporation	903	179
	Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	1136	250
	Consolidated Gas Transmission Corporation	CNG Transmission Corporation	51	795
	CNG GAS TRANSMISSION CORPERATION	DOMINION TRANSMISSION, INC	58	362
	DOMINION TRANSMISSION, INC	CNX GAS COMPANY, LLC	1522	33
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1543	1235
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1584	942
	NOBLE ENERGY, INC	HG ENERGY II APPALACHIA, LLC	TBD	TBD
7	J. B. Gusman and Adaline Gusman	Treat & Crawford	158	8
	Treat & Crawford	United Fuel Gas Company	226	359
	United Fuel Gas Company	Fayette County Gas Company	unrecorded	unrecorded
	Fayette County Gas Company	Hope Natural Gas	201	3
	Hope Natural Gas	Consolidated Gas Supply Corporation	903	179
	Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	1136	250
	Consolidated Gas Transmission Corporation	CNG Transmission Corporation	51	795
	CNG GAS TRANSMISSION CORPERATION	DOMINION TRANSMISSION, INC	58	362
	DOMINION TRANSMISSION, INC	CNX GAS COMPANY, LLC	1522	33
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1543	1235
	CNX GAS COMPANY, LLC	NOBLE ENERGY, INC	1584	942
	NOBLE ENERGY, INC	HG ENERGY II APPALACHIA, LLC	TBD	TBD



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

33-05930

May 29, 2018

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

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WV Department of
Environmental Protection

RE: Drilling Under Roads – Nays 1209 N-1H
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 or 304-420-1119.

Very truly yours,

Diane White

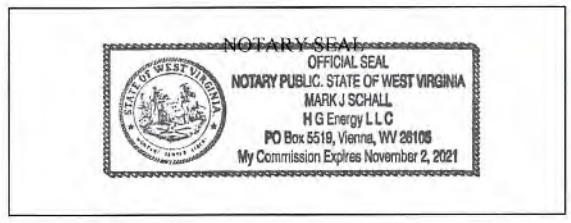
Diane C. White

Enclosures

Certification of Notice is hereby given:

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

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



Subscribed and sworn before me this 29th day of May, 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.

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WW-6A
(9-13)

API NO. 47- -
OPERATOR WELL NO. Nays 1209 N-1H
Well Pad Name: Nays 1209

**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: 5/31/18 **Date Permit Application Filed:** 6/01/18

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:

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WV Department of
Environmental Protection

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

COAL OWNER OR LESSEE
Name: NA
Address: _____

Name: _____
Address: _____

COAL OPERATOR
Name: NA
Address: _____

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

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

Name: _____
Address: _____

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

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

*Please attach additional forms if necessary

* Property, surface, roads, impoundment designation are all owned by H.G. Energy II Appalachia LLC. No Notices were sent. Notices were sent to the two water well - surface owners. See next page.

WW-6A
(8-13)

Page 1 Continued

Nays 1209 N-1H

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

Timothy Butcher
244 Gooseman Road
Jane Lew, WV 26378

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

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WV Department of
Environmental Protection

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Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

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-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

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

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Environmental Protection

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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WV Department of
Environmental Protection

WW-6A
(8-13)

API NO. 47- 33 - 05930
OPERATOR WELL NO. Nays 1209 N-1H
Well Pad Name: Nays 1209

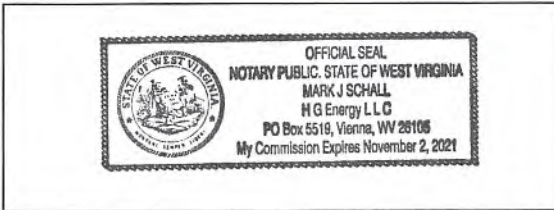
Notice is hereby given by:

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.



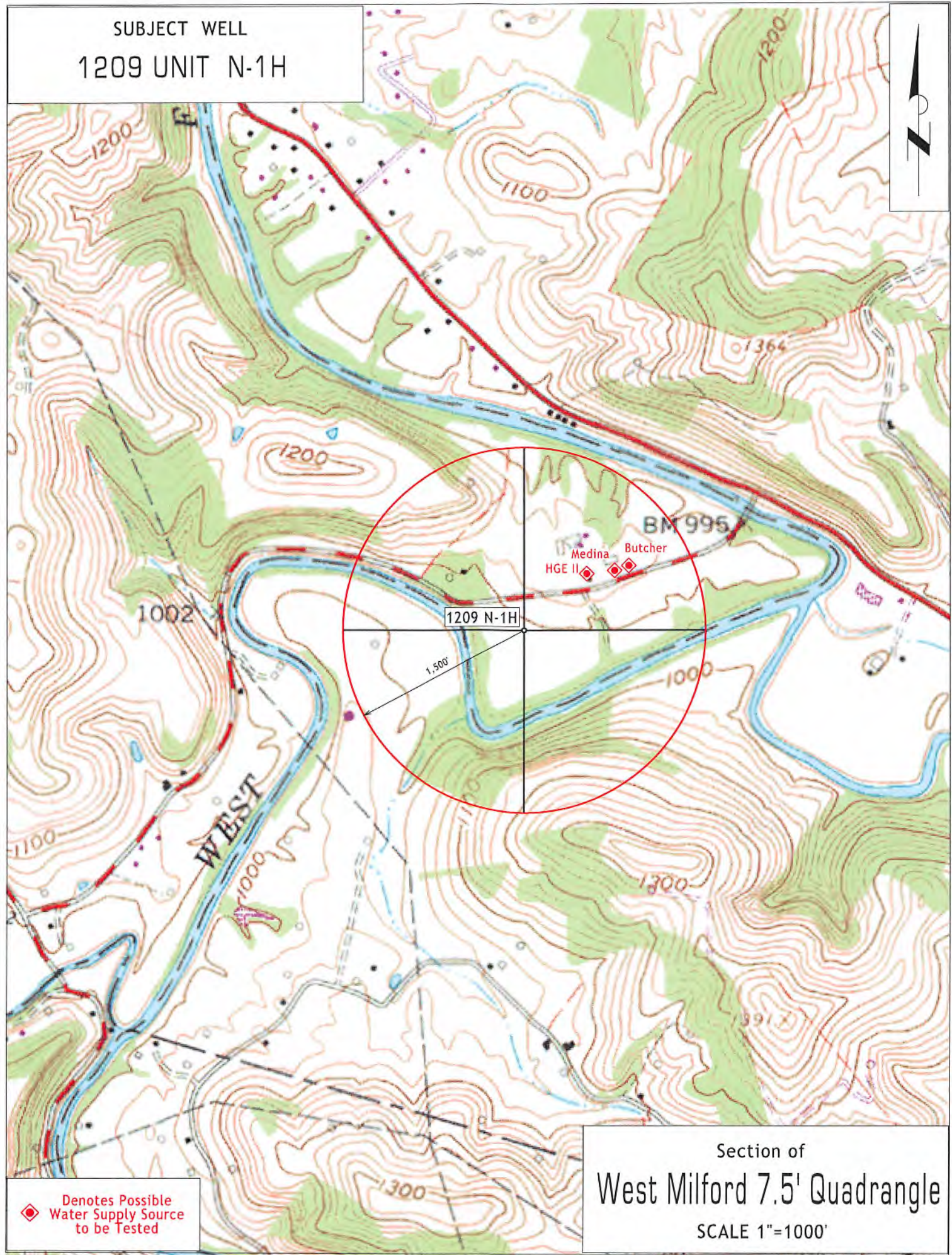
Subscribed and sworn before me this 30th day of May, 2018.

[Signature] Notary Public

My Commission Expires 11/2/2021

RECEIVED
Office of Oil and Gas
JUN 18 2018
WV Department of
Environmental Protection

SUBJECT WELL
1209 UNIT N-1H



◆ 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 INTENT TO DRILL

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

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 05/29/2018 **Date Permit Application Filed:** 06/01/2018

RECEIVED
Office of Oil and Gas

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

JUN 18 2018

HAND DELIVERY CERTIFIED MAIL *
RETURN RECEIPT REQUESTED

WV Department of
Environmental Protection

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

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

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

Name: _____
Address: _____

Notice is hereby given:

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

State: West Virginia UTM NAD 83 Easting: 548091.8
County: Harrison Northing: 4333336.6
District: Union Public Road Access: Kincheloe Road/ SR35
Quadrangle: West Milford 7.5' Generally used farm name: Cone
Watershed: West Fork

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

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

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

* 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.

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: 05/29/2018 **Date Permit Application Filed:** 06/01/2018

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.

RECEIVED
Office of Oil and Gas

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: _____

JUN 18 2018
WV Department of
Environmental Protection

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>548091.8</u>
County:	<u>Harrison</u>		Northing:	<u>4333336.6</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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

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

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.

* 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

May 30, 2018 ✓

Jill M. Newman
Deputy Commissioner

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

Subject: DOH Permit for the Cone 1209 Well Pad, Harrison County
N-1H Well Site ✓

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

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Office of Oil and Gas

JUN 18 2018

WV Department of
Environmental Protection

List of Frac Additives by Chemical Name and CAS #**Nays 1209 Well Pad (N-1H)**

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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Office of Oil and Gas

JUN 18 2018

WV Department of
Environmental Protection

4703305930

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

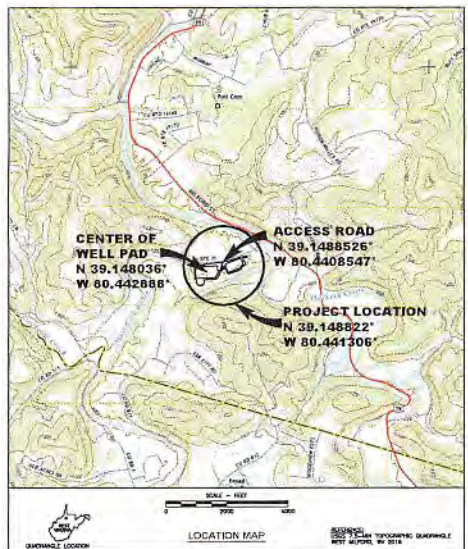
UNION DISTRICT
HARRISON COUNTY
WEST VIRGINIA

Estimated Gross Material Balance (CY)			
Final Development - Gravel Option			
	Cur	Fill	Stockpile
Pad	16,721	51,205	-34,586
Impoundment	47,261	14,727	32,534
Other	148	963	-815
Totals	64,130	80,200	-27,867
Soil Adjustment by Aggregate Inset:			
Pad	2,939		
Top Soil Release:			151 Out
Shipped Topsoil (Limit of Disturbance)			14,007
Est. Soil Factor		27%	2,811
Est. Topsoil Stockpile Volume (Inset Only)			16,882
Minimum Total Stockpile Capacity Required (CY)			17,219

Estimated Gravel Quantities (Placed CY)			
	Asphalt Road	Gravel	Total
Gravel Quantities	1" Soil Demand	294	6,297
	3" Gravel Run	2,361	3,361
Top Coat (Chp & Saw) (Placed CY)	1.2/12 sq.	1,277	1,277
Estimated Composite Filter Soil Length (LF)	2,209	1,370	3,579
Estimated Total Limit of Disturbance (Acres)			17,426
Estimated Impoundment Limit of Disturbance (Acres)			5,849
Estimated Well Cur & Road Limit of Disturbance (Acres)			11,617
Well Pad Prep. Pre-Construction Elevation (Ft)			1022.9

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.



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
COKE GATHERING LLC & COKE MIDDLEBROW DEVELOP L LP	20-444-11.2	95.06 AC.	17.426 AC.
TOTAL LIMIT OF DISTURBANCE			17.426 AC.

	LATITUDE	LONGITUDE
1209 PAD & IMPOUNDMENT ENTRANCE	N 39.148826	W 80.440854

WELL #	LAT.	LONG.
N-1H	N 39.147898	W 80.443456
N-2H	N 39.147939	W 80.443456
N-3H	N 39.147980	W 80.443461
N-4H	N 39.148103	W 80.443470
N-5H	N 39.149062	W 80.443467
N-6H	N 39.148921	W 80.443464
N-7H	N 39.148020	W 80.442259
N-8H	N 39.147988	W 80.442256
N-9H	N 39.147940	W 80.442294
N-10H	N 39.148670	W 80.442302
N-11H	N 39.148111	W 80.442305
N-12H	N 39.148152	W 80.442300

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

*SDW
5/29/2018*

RECEIVED
Office of Oil and Gas

JUN 18 2018

WV Department of
Environmental Protection

THIS DRAWING IS UNOFFICIAL. THE DRAWING IS A PRELIMINARY AND NOT BE USED FOR CONSTRUCTION. THE DRAWING IS FOR INFORMATION ONLY. THE DRAWING IS NOT TO BE USED FOR ANY PURPOSES OTHER THAN THAT FOR WHICH IT WAS PREPARED. THE DRAWING IS NOT TO BE USED FOR ANY PURPOSES OTHER THAN THAT FOR WHICH IT WAS PREPARED. THE DRAWING IS NOT TO BE USED FOR ANY PURPOSES OTHER THAN THAT FOR WHICH IT WAS PREPARED.

REVISION	DATE	DESCRIPTION
1	5/31/18	ADDED PROPERTY MAP, MODIFICATIONS FOR LOT CORNERS
2	6/08/18	PER GRANTEE REQUEST, ADDED CENTER CORNER, ADDED STOCKPILE
3	5/12/18	IMPOUNDMENT REMOVAL, CHANGED THE BEARING AND DISTANCE



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

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

WEST VIRGINIA **CALL BEFORE YOU DIG!**

Dial 811 or 800.245.4848
www.811wv.com

APPROVED: MEP 05/23/2018
CHECKED: MEP 05/23/2018
DRAWN: CLM 05/09/2018
PROJECT NO.: 4000-PAD07715
DRAWING NUMBER: PAD07715-001
SHEET 1

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

S:\PROJECT FILES\4000-PAD07715 HG 1209 VERMINES 1209 PAD & IMPOUNDMENT\PAD07715 TITLE SHEET.DWG, 6/13/2018 10:35 AM

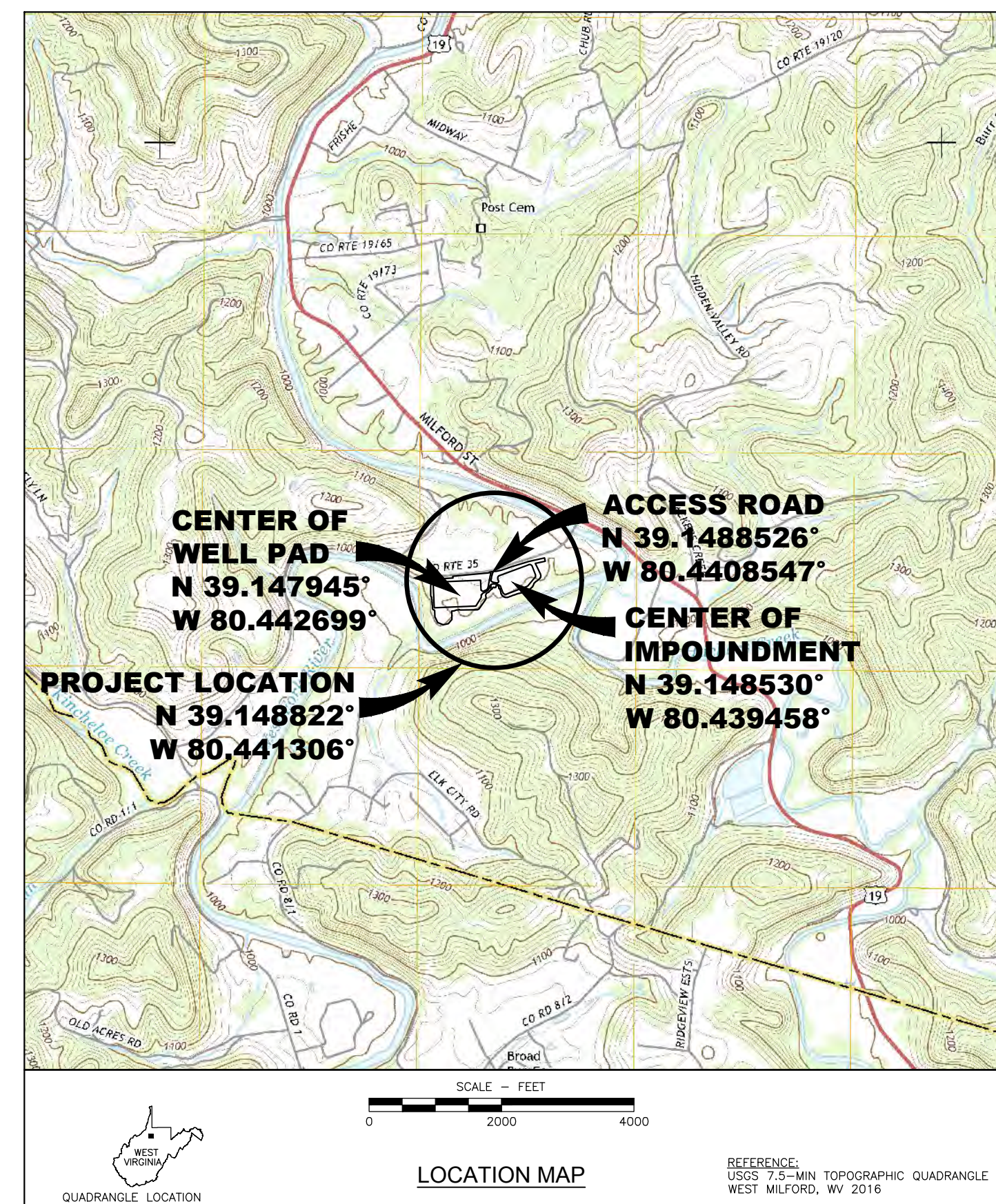
CONSTRUCTION IMPROVEMENT PLANS WITH EROSION AND SEDIMENT CONTROLS HG 1209 PAD & IMPOUNDMENT



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			
	Cut	Fill	Stockpile
Pad	16,751	51,339	-34,588
Impoundment	47,954	14,737	33,217
Road	148	964	-816
Totals	64,853	67,040	-2,187
Soil Adjustment for Aggregate Import:			
Pad			2,338
Total Site Balance:			151 Cut
Stripped Topsoil (Limit of Disturbance)			
Est. Swell Factor (20%)			2,811
Est. Topsoil Stockpile Volume (Loose CY)			16,868
Minimum Total Stockpile Capacity Required (C.Y.)			17,019
Notes:			
1. Material balance for est. gross earthwork quantities only.			
2. Topsoil est. 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 (Placed CY)			
	Access Road & Impoundment	Pad	TOTAL
Gravel Quantities	8" Soil Cement	284	6,297
	3" Crusher Run	--	2,361
Top Coat Chip & Seal (Placed SY)	1,277 sy.	--	1,277 sy.
Estimated Compost Filter Sock Length (LF)	3,462	1,320	4,782
Estimated Total Limit of Disturbance (Acres)			17.426
Estimated Impoundment Limit of Disturbance (Acres)			5.849
Estimated Well Pad & Road Limit of Disturbance (Acres)			11.577
Well Pad Peak Pre-Construction Elevation (Ft)			1023.9

SHT. NO.	SHEET TITLE
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2A-2C	SITE LAYOUT PLANS
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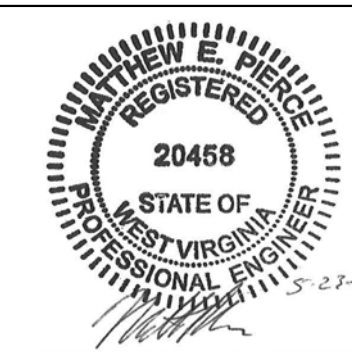
RECORD OWNER	RECORD LOT #	RECORD AREA OF LOT	AREA WITHIN LOD
HG ENERGY II APPALACHIA, LLC	20-444-11.2	95.06 AC.	17.426 AC.
TOTAL LIMIT OF DISTURBANCE			17.426 AC.

	LATITUDE	LONGITUDE
1209 PAD & IMPOUNDMENT ENTRANCE	N 39.1488526	W 80.4408547

WELL #	LAT.	LONG.
N-1H	N 39.147898	W 80.443456
N-2H	N 39.147939	W 80.443458
N-3H	N 39.147980	W 80.443461
N-4H	N 39.148103	W 80.443470
N-5H	N 39.148062	W 80.443467
N-6H	N 39.148021	W 80.443464
N-7H	N 39.148029	W 80.442299
N-8H	N 39.147988	W 80.442296
N-9H	N 39.147946	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

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REVISION	DATE	DESCRIPTION
1	5/31/18	ADDED PROPERTY MAP. MODIFICATIONS PER DEP COMMENTS.
2	6/08/18	PAD DRAINAGE REVISION. ADDED EXISTING GASLINES. ADDED STOCKPILES.
3	6/12/18	IMPOUNDMENT REVISIONS. ADJUSTED SITE BALANCE AND STOCKPILES.
4	7/02/18	MODIFICATIONS PER DEP COMMENTS.
5	10/01/18	ADDED WETLAND LOCATIONS. WEST FORK RIVER FLOW DIRECTION AND PUBLIC INFAE INFORMATION.
6	10/12/18	MODIFICATIONS TO BMP'S PER DEP COMMENTS. ADDED WETLAND LABELS.



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

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

APPROVED	MEP 05/23/2018	 Penn E&R Environmental & Remediation, Inc. 111 RYAN COURT, PITTSBURGH, PA 15205; 412-722-1222
CHECKED	MEP 05/23/2018	
DRAWN	DJA 05/08/2018	
PROJECT No.	4000-PA007715	
DRAWING NUMBER PA007715-001 SHEET 1		

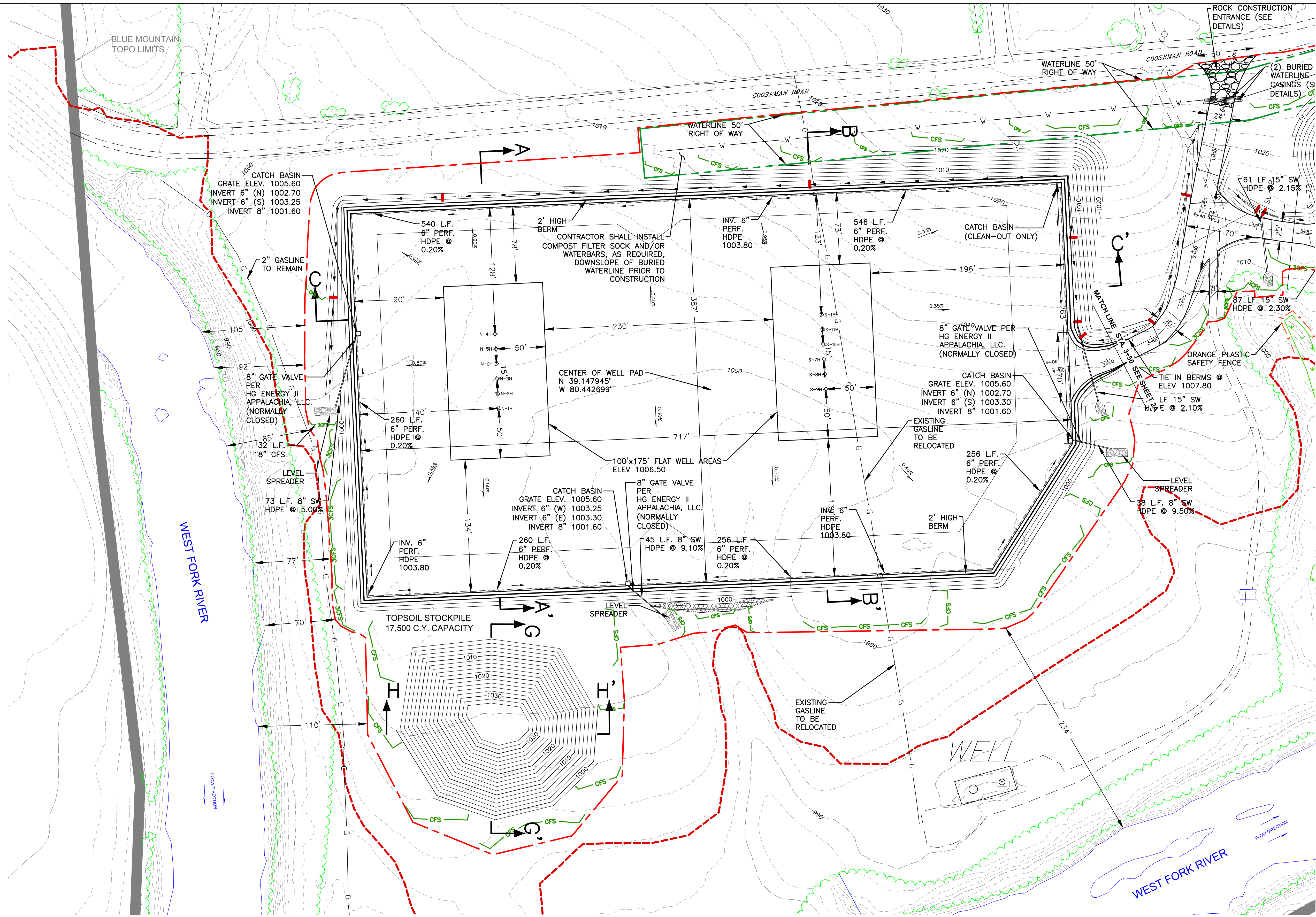


CALL BEFORE
YOU DIG!

Dial 811 or
800.245.4848
Miss Utility of West Virginia

1. SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING, AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE.

S:\PROJECT FILES\4000-PA007715 HG 1209 DRAWINGS\1209 PAD & IMPOUNDMENT\PA007715 PAD1209 UTM BALANCED.DWG,10/12/2018 2:13 PM



LEGEND

- ROCK CHECK DAM
- RIPRAP APRON
- ACCESS ROAD/PAD CHANNEL
- CFS COMPOST FILTER SOCK 8" UNLESS OTHERWISE NOTED
- 3CFS STACKED COMPOST FILTER SOCK 8"
- APPROXIMATE LIMITS OF DISTURBANCE
- APPROXIMATE 50' WATERLINE RIGHT OF WAY
- APPROXIMATE PROPERTY LINE
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED FINAL GRADE INDEX CONTOUR
- PROPOSED FINAL GRADE INTERMEDIATE CONTOUR
- LIMITS OF BLUE MOUNTAIN MAPPING
- EXISTING TREE LINE
- APPROXIMATE 100 YR FLOODPLAIN BOUNDARY
- 8" CHAIN LINK FENCE WITH SECURITY WIRE
- EXISTING GASLINE

SECTION
 A-A SECTION (SEE SHEET 5)
 A-A SECTION (SEE SHEET 5)

TOE BENCH (SEE DETAIL)

- WEST VIRGINIA GENERAL NOTES:**
1. REFERENCE THIS SHEET WITH THE CONSTRUCTION NOTES AND DETAILS.
 2. CONTRACTOR SHALL CONTACT WEST VIRGINIA UTILITIES PROTECTION SERVICES (811) A MINIMUM OF 3 DAYS PRIOR TO EXCAVATION WORK. UTILITIES MUST BE IDENTIFIED AND EITHER RELOCATED OR PROTECTED BY CONTRACTOR PRIOR TO BEGINNING WORK AT THE SITE.
 3. SITE SHALL BE CONSTRUCTED IN ACCORDANCE WITH WELL DRILLING PERMIT. CONTRACTOR RESPONSIBLE TO OBTAIN ALL OTHER ANCILLARY PERMITS/APPROVALS REQUIRED TO CONSTRUCT SITE INCLUDING BUT NOT LIMITED TO FEDERAL, STATE, AND LOCAL REQUIREMENTS.
 4. NO GEOTECHNICAL OR SLOPE STABILITY ANALYSIS WAS PERFORMED FOR THIS SITE. CONTRACTOR IS RESPONSIBLE TO CONSTRUCT PROPER TOE AND BONDING BENCHES BY FIELD CONDITIONS TO PREPARE SURFACES FOR FILL PLACEMENT ON STEEP SLOPES. PENN E&R IS NOT RESPONSIBLE FOR SLIPS, SLIDES, OR EARTH MOVEMENT RESULTING FROM CONSTRUCTION.
 5. EROSION AND SEDIMENTATION CONTROL BMPs PRIOR TO EARTHWORK. SITE CONSTRUCTION SHALL FOLLOW WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL DATED MAY 2012.
 6. CLEAR AND GRUB WORK AREA, REMOVE AND STOCKPILE AVAILABLE TOPSOIL FROM LIMIT OF DISTURBANCE TO A LOCATION DESIGNATED BY HG ENERGY, LLC.
 7. NO EMBANKMENT FILL SHALL BE PLACED ON FROZEN MATERIAL. FILL MATERIAL SHALL BE FREE OF ORGANICS, LARGE ROCKS, FROZEN SOIL OR OTHER OBJECTIONABLE MATERIAL.
 8. CUT/FILL SLOPES SHALL BE CONSTRUCTED TO A MAXIMUM SLOPE OF 2H:1V UNLESS NOTED OTHERWISE.
 9. FILL MATERIAL SHALL BE PLACED IN LIFTS OR LAYERS OVER THE LENGTH OF THE FILL. LIFT THICKNESS OF THE SOIL SHALL BE AS THIN AS THE SUITABLE RANDOM EXCAVATED MATERIAL WILL PERMIT, TYPICALLY 6-12 INCHES THICK. THE SIZE OF ROCK LIFTS SHALL NOT EXCEED 36 INCHES. THE ROCK SHALL NOT BE GREATER IN ANY DIMENSION THAN 36 INCHES. COMPACTION SHALL BE OBTAINED BY COMPACTION EQUIPMENT, SHEEP'S FOOT OR PAD ROLLER, DEPENDING ON MATERIAL, WITH COMPACTION TO VISIBLY NON-MOVEMENT OF THE EMBANKMENT MATERIAL. COMPACTION EFFORT SHALL NOT EXCEED OPTIMUM MOISTURE LIMITS. EACH LIFT SHALL BE COMPACTED TO A STANDARD PROCTOR DENSITY OF AT LEAST 95% BEFORE BEGINNING THE NEXT LIFT. QC TESTING SHALL BE PERFORMED AT A RATE OF 2 TESTS/ACRE/LIFT.
 10. CONTRACTOR SHALL CONSTRUCT ACCESS ROAD IN ACCORDANCE WITH DETAILS PROVIDED. ADDITIONAL COVER MATERIAL PLACEMENT REQUIRED IN AREA OF UTILITY LINES.
 11. CONTRACTOR SHALL COORDINATE MATERIAL MANAGEMENT (EXCESS CUT/FILL, TOPSOIL STOCKPILES, GRAVEL SOURCING) WITH HG ENERGY II APPALACHIA, LLC PRIOR TO MOBILIZATION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER EROSION AND SEDIMENTATION CONTROLS, BOTH ON SITE AND OFF SITE.
 12. ALL SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS ARE STABILIZED AND THE VEGETATIVE GROUND COVER HAS ACHIEVED A UNIFORM 70% GROWTH. ANY AREAS NOT ACHIEVING A 70% VEGETATIVE COVER SHALL BE RESEDED AND MULCHED WITHIN 24 HOURS OF DETECTION.
 13. SECONDARY CONTAINMENT SHALL BE PROVIDED DURING DRILLING PROCESS. A LINER AND MAT SYSTEM WITH BERM SHALL BE INSTALLED PRIOR TO DRILLING AND WATER INSIDE SECONDARY CONTAINMENT SHALL BE DISPOSED OFFSITE IN ACCORDANCE WITH WY REGULATIONS.
 14. THE CLOSEST WATER INTAKE IS LOCATED APPROXIMATELY 15.3 MILES UPSTREAM OF THE 1209 WELL PAD AND IMPOUNDMENT. THE PUBLIC WATER INTAKE FACILITY NAME IS WEST VIRGINIA AMERICAN WATER WESTON WTP. THE FACILITY ADDRESS IS 1243 US HIGHWAY 19S, WESTON, WV 26452.

- REFERENCE:**
1. TOPOGRAPHY OBTAINED FROM BLUE MOUNTAIN, INC.
 2. FLOODPLAIN BOUNDARIES OBTAINED FROM FEMA NATIONAL FLOOD HAZARD LAYER.
 3. EXISTING GASLINES OBTAINED FROM PENN E&R FIELD LOCATIONS 6/4/18.
 4. PUBLIC WATER INTAKE FACILITIES PER TAGS.DEP.WV.GOV/WWATERPLAN
 5. WETLAND DELINEATION FILES PROVIDED BY HG ENERGY II APPALACHIA, LLC.
- THIS DRAWING IS COPYRIGHTED. THIS DRAWING IS A TRADE SECRET AND ONLY ENTRUSTED TO THE RECEIVER FOR HIS PERSONAL USE. WITHOUT THE SIGNED WRITTEN CONSENT OF PENN ENVIRONMENTAL & REMEDIATION, INC. IT MUST NOT BE COPIED NOR MADE AVAILABLE TO THIRD PARTIES, INCLUDING COMPETITORS, NOR MADE ACCESSIBLE TO THIRD PARTIES. ANY ILLEGAL USE BY THE RECEIVER OR THIRD PARTIES FOR WHICH HE IS RESPONSIBLE CAN CONSTITUTE A CAUSE FOR LEGAL ACTION. THIS DRAWING MUST BE RETURNED ON REQUEST OF THE COMPANY.

REVISION	DATE	DESCRIPTION
1	5/31/18	ADDED PROPERTY MAP. MODIFICATIONS PER DEP COMMENTS.
2	6/08/18	PAD DRAINAGE REVISION. ADDED EXISTING GASLINES. ADDED STOCKPILES.
3	6/12/18	IMPOUNDMENT REVISIONS. ADJUSTED SITE BALANCE AND STOCKPILES.
4	7/02/18	MODIFICATIONS PER DEP COMMENTS.
5	10/01/18	ADDED WETLAND LOCATIONS. WEST FORK RIVER FLOW DIRECTION AND PUBLIC INTAKE INFORMATION.
6	10/12/18	MODIFICATIONS TO BMP'S PER DEP COMMENTS. ADDED WETLAND LABELS.

SCALE - FEET
 0 50 100 150

REGISTERED PROFESSIONAL ENGINEER
 STATE OF WEST VIRGINIA
 20458
 5-27-18

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	MEP 05/23/2018
CHECKED	MEP 05/23/2018
DRAWN	DJA 05/08/2018
PROJECT No.	4000-PA007715
DRAWING NUMBER	PA007715-001
SHEET	2B

APPROVED WVDEP OOG
 10/16/2018

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

WEST VIRGINIA

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Dial 811 or 800.245.4848
 Miss Utility of West Virginia

1. SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING, AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE.

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