



 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

Thursday, March 28, 2019
 WELL WORK PERMIT
 Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC
 5260 DUPONT ROAD

PARKERSBURG, WV 26101

Re: Permit approval for 1209 S-8H
 47-033-05944-00-00

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: 1209 S-8H
 Farm Name: HG ENERGY II APPALACHIA⁺
 U.S. WELL NUMBER: 47-033-05944-00-00
 Horizontal 6A New Drill
 Date Issued: 3/28/2019

PERMIT CONDITIONS

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

CONDITIONS

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.



Office of Oil and Gas

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

47038079/2019

DEP Office Use only	
Date Received by Oil & Gas:	2/5/19
Assigned Impoundment ID #:	033-FWA-00102

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Permit Associated Impoundment / Pit Registration

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

Section 1 – Operator Information

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

Section 2 – Engineering / Design Contractor Information

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



Office of Oil and Gas

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Section 3 - Impoundment / Pit Information

Type of Structure. Check one of two choices below:

 Freshwater Impoundment Waste Pit**Note:** Any waste in a pit will make it a waste pit.

Name of Structure (Company Name): HG Energy II Appalachia, LLC. NAYS 1209 Assoc FW
 County: Harrison District: Union Impoundment
 USGS 7.5' Quad Map Name: West Milford
 Farm Name: HG Energy II Appalachia
 Pad Name: 1209
 Surface Owner Name: HG Energy II Appalachia, LLC.
 Physical Description of Location: Less than one mile from the intersection of SR 19 (Milford Street) and CR 35 (Gooseman Road) in Jane Lew, WV

(Note: Give general location, example: 2 miles south of Smalltown, WV on Rt. 22, left on Buffalo Creek)

Watershed (nearest perennial): West Fork RiverDistance (Drainage Distance) to nearest perennial stream: 250 feet

Location Coordinates (NAD83, Decimal Degrees (xx.xxxx, -xx.xxxx))

Latitude: 39.1485383 Longitude (Use negative sign): -80.439546UTM Coordinates: 1799304.835 E 14217195.3 N

Access Road Coordinates (junction of state highway access)

Latitude: 39.14885388 Longitude (Use negative sign): -80.44084851UTM Coordinates: 1798934.9 E 14217307.9 N

Approximate Dimensions

Length: 530 Width: 276 Height: 15

Note: If irregularly shaped, give approximate dimensions of long axis.

Total Capacity – Provide all units of measure below:

Barrels: 287,380 Gallons: 12,069,797 Acre-Feet: 37.041

Capacity with 2' Freeboard – Provide all units of measure below:

Barrels: 234,136 Gallons: 9,833,562 Acre-Feet: 30.178

Incised volume:

Barrels: 195,232 Gallons: 8,199,649 Acre-Feet: 25.164

Net impounded volume: (Total volume less incised volume.)

Barrels: 92,148 Gallons: 3,870,148 Acre-Feet: 11.877

Anticipated Construction Start Date (estimation, non-binding): _____

Note: No construction may begin on **Associated** impoundment until WVDEP issues the drilling permit. At least 7 calendar days prior to confirmed construction start date, notify the Office of Oil & Gas, and the local Oil and Gas inspector of construction start date. Use form IMP-2, "Notification of Impoundment / Pit Construction."

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

Well Number(s):	API Number(s) – If issued:
Nays 1209 N-1H	47-033-05930
Nays 1209 N-2H	Pending
Nays 1209 N-3H	Pending
Nays 1209 N-4H	Pending
Nays 1209 N-5H	Pending
Nays 1209 N-6H	Pending
Nays 1209 S-7H, S-8H, S-9H, S-10H, S-11H, S-12H	Pending

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

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

Section 6 – Dam Standard Qualifying Evaluation

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

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



Section 8 - Application Certification

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

Name: Diane White

Title: Accountant

Signature: _____

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WV Department of
Environmental Protection

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

Notary Public: _____

My commission expires: _____

Notary Seal:

Section 9. Submittal Instructions

Submit original paper copy of application to:

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

Email PDF file format of this application and all related engineering Plans to :

Depimpoundments@wv.gov

03/29/2019

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: Nays 1209 S-9H

Well Operator: HG Energy II Appalachia, LLC

Well Number: Nays 1209 S-9H

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.

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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.

03/29/2019

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: Nays 1209 S-9H

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.

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

- a. Include a No-Action Alternative as to show "the future without the project"
- b. Location Alternatives must be shown
- c. Must demonstrate why a one hundred foot buffer cannot be maintained
- d. Describe how the proposed project is the least environmentally damaging practicable alternative

a. The No-Action Alternative for this site is the HG 1209 well pad not being constructed. This results in HG not utilizing acquired assets, and landowners not receiving anticipated compensation for leased land.

b. See attached Figure 1. Location to North was evaluated, but was determined to be of insufficient size for required HG 1209 well pad sizing.

c. One hundred foot buffer to stream cannot be maintained due to construction limits required to construct the HG 1209 well pad. The site is limited to the North by the DOH permit 30' ROW. The site is limited to the East, South, and West by the historic 100 year floodplain.

d. The proposed HG 1209 well pad is the least environmentally damaging practicable alternative as it avoids all wetlands, does not require any tree removal, and does not disturb any riparian buffers.

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: Nays 1209 S-9H

- 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, staged, 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.

03/29/2019



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Environmental Protection

**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.”

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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.”

WV Department of
Environmental Protection

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.

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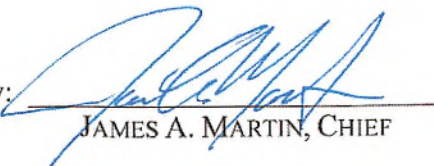
FEB 05 2019

WV Department of
Environmental Protection

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

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Office of Oil and Gas

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Environmental Protection

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: Nays 1209 N-1HWell Operator: HG Energy II Appalachia, LLCWell Number: Nays 1209 N-1HWell Pad Name: Nays 1209 PadCounty, District, Quadrangle of Well Location: Harrison County, Union District, West Milford Quad

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

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

§22-6A-12(b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows:

- (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir.
- (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake.
- (3) For a groundwater source, the distance shall be measured from the wellhead or spring.

The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary.

§22-6A-12(c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section.

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

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

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

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

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

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

- a. Include a No-Action Alternative as to show "the future without the project"
- b. Location Alternatives must be shown
- c. Must demonstrate why a one hundred foot buffer cannot be maintained
- d. Describe how the proposed project is the least environmentally damaging practicable alternative

a. The No-Action Alternative for this site is the HG 1209 well pad not being constructed. This results in HG not utilizing acquired assets, and landowners not receiving anticipated compensation for leased land.

b. See attached Figure 1. Location to North was evaluated, but was determined to be of insufficient size for required HG 1209 well pad sizing.

c. One hundred foot buffer to stream cannot be maintained due to construction limits required to construct the HG 1209 well pad. The site is limited to the North by the DOH permit 30' ROW. The site is limited to the East, South, and West by the historic 100 year floodplain.

d. The proposed HG 1209 well pad is the least environmentally damaging practicable alternative as it avoids all wetlands, does not require any tree removal, and does not disturb any riparian buffers.

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

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

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

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

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

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

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

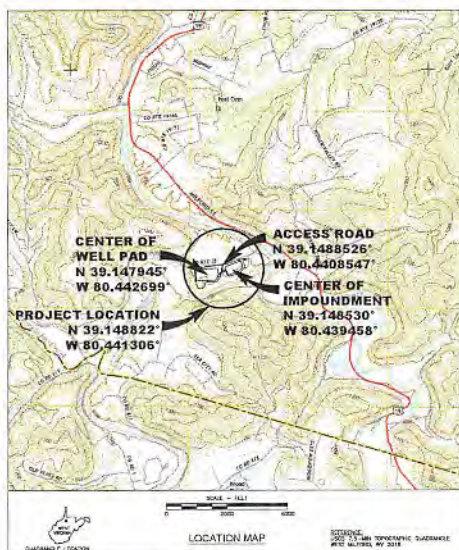
CONSTRUCTION IMPROVEMENT PLANS WITH EROSION AND SEDIMENT CONTROLS HG 1209 PAD & IMPOUNDMENT

UNION DISTRICT
HARRISON COUNTY
WEST VIRGINIA

Estimated Gross Material Balance (CY)			
Final Development - Gravel Cutters			
	Cut	Fill	Spreads
Pad	16,750	61,359	-34,598
Impoundment	47,954	14,737	-33,217
Road	148	364	-816
Totals	64,852	67,040	-2,187
Total Adjustment for Aggregate Import			
Pad		2,338	
Total Site Balance		1st Cut	
Stripped Topsoil (Limit of Disturbance)		14,057	
Est. Swell Factor (25%)		3,611	
Est. Topsoil Stockpile Volume (Process CY)		16,669	
Minimum Total Stockpile Capacity Required (CY)		17,618	
Notes:			
1. Material balance for est. gross earthwork quantities only.			
2. Topsoil est. volume based on 8 inches average depth.			
3. Material balance not aggregate quantities based on estimates and may not be representative of actual quantities.			
4. Estimates do not reflect contractor buy volumes.			
Estimated Gravel Quantities (Process CY)			
	Gravel Pad & Impoundment	Pad	105%
Gravel Quantities	8" Soil Cement	294	8,297
	12" Crushed Stone	2,387	2,387
Top Coat Chip & Seal (Process CY)	1.277 cu yd		3,277 cu yd
Estimated Coarse Filter Soil Length (LF)	2,266	1,320	3,586
Estimated Total Limit of Disturbance (Acres)			17,425
Estimated Impoundment Limit of Disturbance (Acres)			0.549
Estimated Well Pad & Road Limit of Disturbance (Acres)			11,577
Well Pad Peak Pre-Construction Elevation (Ft)			1002.0

CONSTRUCTION SEQUENCE

- 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.
- 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.
- 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.
- Land Clearing and Grading - Implement clearing and grading only after all downslope E&S BMPs have been constructed and stabilized.
- 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.
- 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.
- Upon completion of pad grading, compact the pad to grade and begin placement of pad soil cement.
- Final Stabilization, Topsoiling, Trees and Shrubs - After construction is completed, install stabilization BMPs including permanent seeding, mulching and ntrap, 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

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

RECORD OWNER	RECORD LOT #	RECORD AREA OF LOT	AREA WITHIN LOD
HG ENERGY II APPALACHIA, LLC	20-444-11.2	65.06 AC.	17.426 AC.
TOTAL LIMIT OF DISTURBANCE			17.426 AC.

	LATITUDE	LONGITUDE
1209 PAD & IMPOUNDMENT ENTRANCE	N 39.148526	W 80.4408547

WELL #	LAT.	LONG.
N-1H	N 39.147898	W 80.443466
N-2H	N 39.147939	W 80.443458
N-3H	N 39.147900	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 80.443299
N-8H	N 39.147958	W 80.443298
N-9H	N 39.147946	W 80.443294
N-10H	N 39.148070	W 80.443202
N-11H	N 39.148111	W 80.443205
N-12H	N 39.148152	W 80.443208

THIS DRAWING IS CONSIDERED THE PROPERTY OF PENN ENVIRONMENTAL & REMEDIATION, INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF PENN ENVIRONMENTAL & REMEDIATION, INC. ANY REVISIONS TO THIS DRAWING SHALL BE INDICATED BY A CIRCLE OR SQUARE AND A NUMBER. ANY CHANGES TO THIS DRAWING SHALL BE INDICATED BY A CIRCLE OR SQUARE AND A NUMBER.

REVISION	DATE	DESCRIPTION
1	3/31/15	ADDED PROPERTY AND MEASUREMENTS FOR THE DAMAGE
2	6/28/15	ADD DAMAGE REPORT, WERE EROSION CONTROL, ADDER, STOPPAGES
3	8/12/15	IMPROVEMENTS REVISION, ADJUSTED SITE PLACEMENT AND STOPPAGES
4	7/02/16	MODIFICATIONS FOR SUPPLEMENT
5	10/01/16	ADDED MATERIAL SPECIFIC NOTATION FOR SUPPLEMENT, AND EROSION CONTROL



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

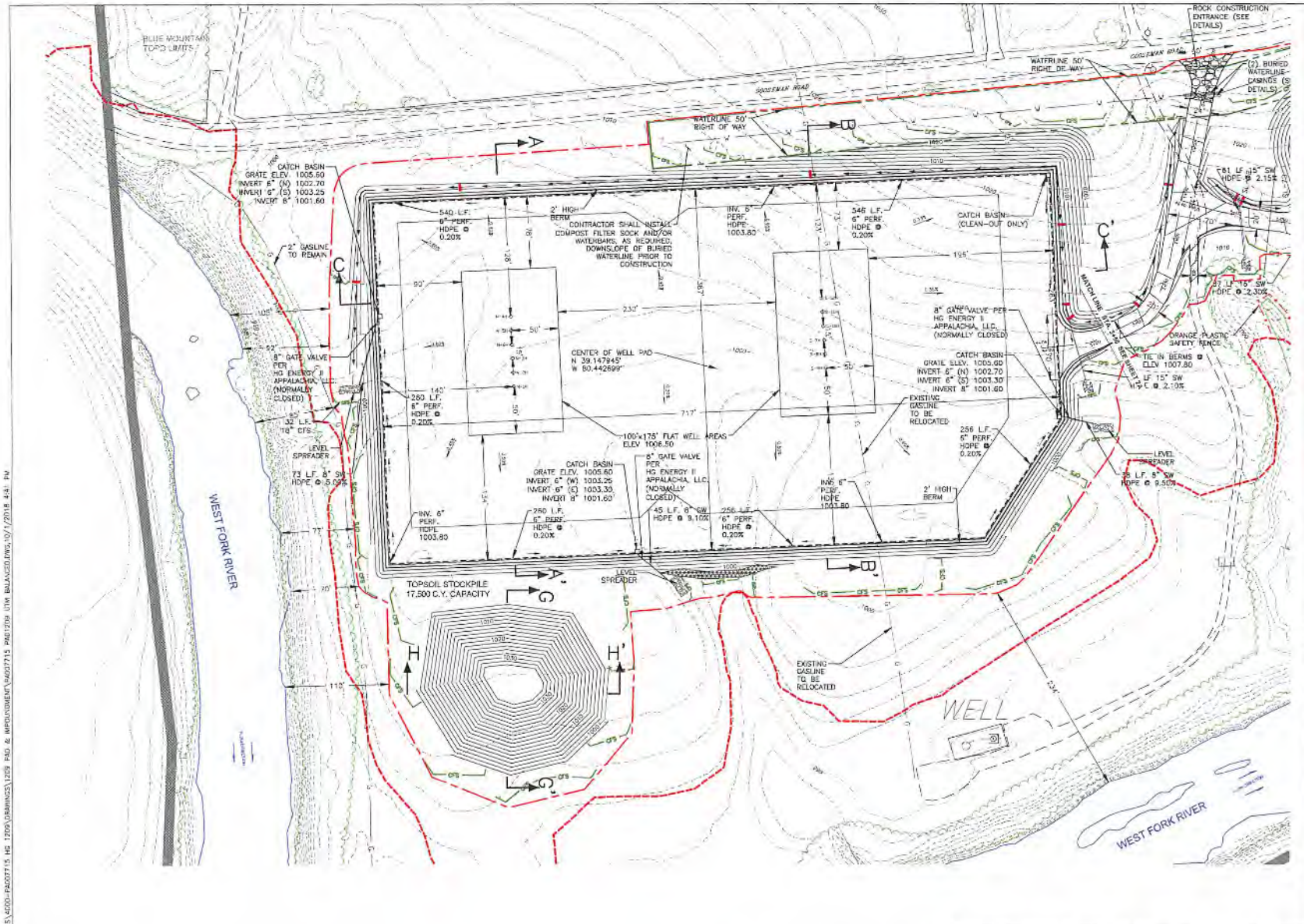
PREPARED FOR
HG ENERGY II APPALACHIA, LLC
PARKERSBURG, WEST VIRGINIA

APPROVED: **MEP 05/23/2016**
CHECKED: **MEP 05/23/2016**
DRAWN: **JJA 05/08/2016**
PROJECT NO.: **4000-19027715**
DRAWING NUMBER: **PA007715-001 SHEET 1**
Penn E&R
Environmental & Remediation, Inc.
111 RYAN COURT, PITTSBURGH, PA 15205
412-722-1222

WEST VIRGINIA **CALL BEFORE YOU DIG!**
Dial 811 or 800.245.4848
www.1call811.org

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.

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LEGEND

- ROCK CHECK DAM
- REPAIR ACTION
- ACCESS ROAD/PAV. CHANNEL
- EXISTING FILTER SOCK 8" UNLESS OTHERWISE NOTED
- 0.2% SLOPE
- SHADDED COMPOST FILTER SOCK 8"
- APPROXIMATE LIMITS OF DISTURBANCE
- APPROXIMATE 50' WATERLINE, RIDE OF WAY
- APPROXIMATE PROPERTY LINE
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED FINAL GRADE INDEX CONTOUR
- PROPOSED FINAL GRADE INTERMEDIATE CONTOUR
- LAINE OF BLUE MOUNTAIN MAPPING
- EXISTING TITLE LINE
- APPROXIMATE 100' IN FLOODPLAIN BOUNDARY
- 8" CHAIN LINK FENCE WITH SECURITY WIRE
- EXISTING CURB LINE

SEE BENCH (SEE DETAIL)

WEST VIRGINIA SECTION

1. CONTRACTOR SHALL VERIFY WITH THE ENGINEERING FIRM AND DETAILS.
2. CONTRACTOR SHALL CONTACT WEST VIRGINIA UTILITIES PROTECTION SERVICES (WVU) AT A MINIMUM OF 14 DAYS PRIOR TO THE START OF CONSTRUCTION TO OBTAIN A PERMIT TO WORK AT THE SITE.
3. THE SITE SHALL BE CONSIDERED AS ADJACENT TO A WATERWAY AND SHALL BE CONSIDERED AS A WATERWAY FOR THE PURPOSES OF THE WEST VIRGINIA WATERWAY ACT AND LOCAL REQUIREMENTS.
4. THE CONTRACTOR SHALL OBTAIN A PERMIT TO WORK FROM THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES (DENR) PRIOR TO THE START OF CONSTRUCTION.
5. THE CONTRACTOR SHALL OBTAIN A PERMIT TO WORK FROM THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES (DENR) PRIOR TO THE START OF CONSTRUCTION.
6. THE CONTRACTOR SHALL OBTAIN A PERMIT TO WORK FROM THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES (DENR) PRIOR TO THE START OF CONSTRUCTION.
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10. THE CONTRACTOR SHALL OBTAIN A PERMIT TO WORK FROM THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES (DENR) PRIOR TO THE START OF CONSTRUCTION.
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13. THE CONTRACTOR SHALL OBTAIN A PERMIT TO WORK FROM THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES (DENR) PRIOR TO THE START OF CONSTRUCTION.
14. THE CONTRACTOR SHALL OBTAIN A PERMIT TO WORK FROM THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES (DENR) PRIOR TO THE START OF CONSTRUCTION.

- REVISIONS**
- | NO. | DATE | DESCRIPTION |
|-----|----------|--|
| 1 | 5/21/18 | ADDED PROPERTY AND IMPROVEMENTS FOR THE COMPANY. |
| 2 | 6/08/18 | FOR FINANCIAL REASONS, ADDED EXISTING DRAINAGE ACCESS ECONOMY. |
| 3 | 5/12/18 | ADDED EXISTING DRAINAGE ACCESS ECONOMY AND ECONOMY. |
| 4 | 7/02/18 | ADDED EXISTING DRAINAGE ACCESS ECONOMY. |
| 5 | 10/01/18 | ADDED EXISTING DRAINAGE ACCESS ECONOMY AND ECONOMY. |

SCALE - FEET

0 50 100 150

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

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

APPROVED: MEP 05/23/2018
 CHECKED: MEP 05/23/2018
 DRAWN: SA 05/08/2018
 PROJECT NO: 4000-1A07715

Penn E&R
 Environmental & Remediation, Inc.

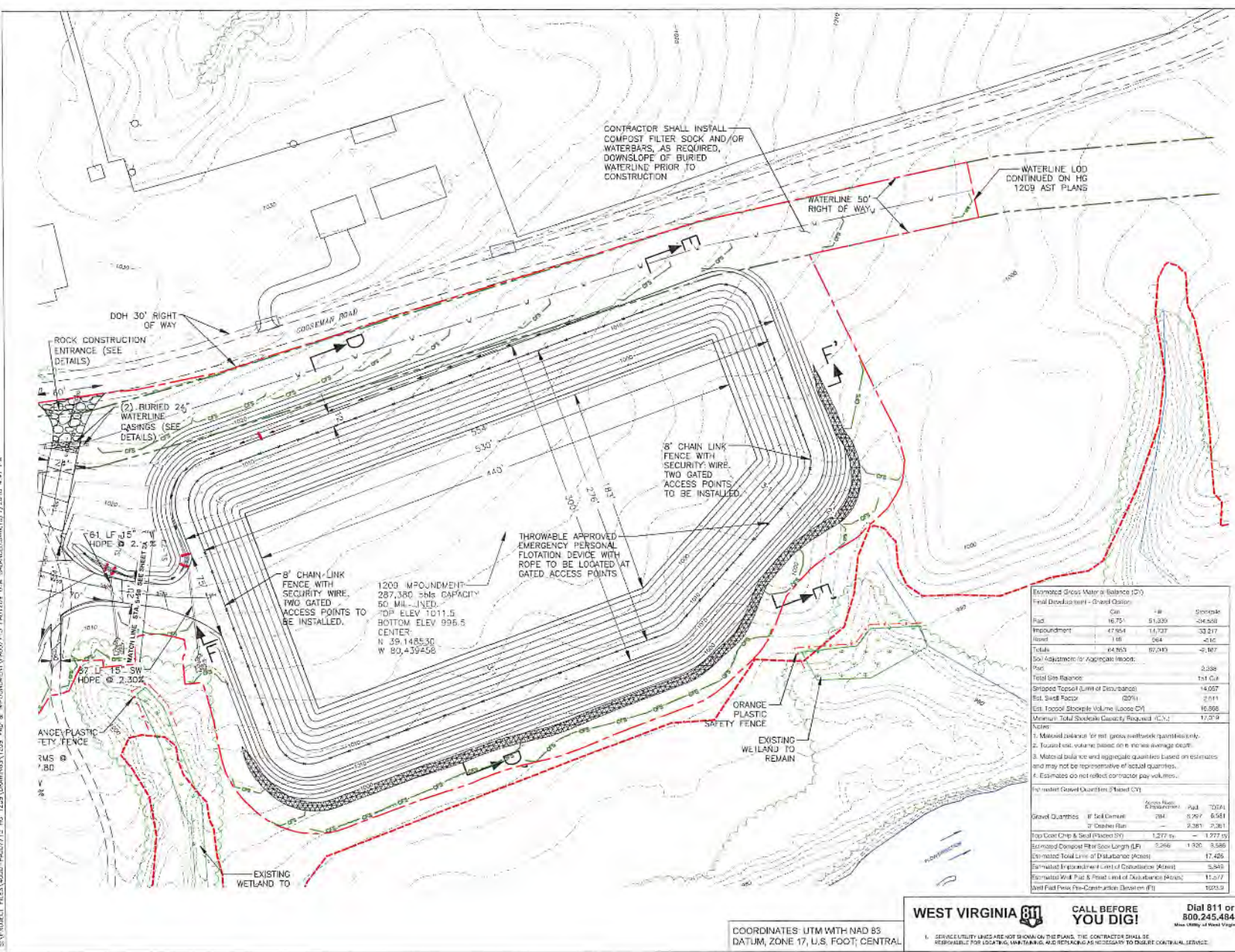
111 WYOMING COURT, PITTSBURGH, PA 15202
 412-722-7222

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

VERIFY UTILITY LINES ARE NOT SHOWN ON THE PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MARKING, AND REPAIRING AS NECESSARY TO ENSURE CONTINUAL SERVICE.

SY:PROJECT:FILE:4303-PA037715-109-PAD-1-IMPONDMENT:PROJ:15-EM1159-VON-BANARZEV:DWG:15/17/2018-4:41 PM



- KEY: VISION GENERAL NOTES:
- CONTRACTOR SHALL VERIFY THE CONSTRUCTION, NOTES AND DETAILS.
 - CONTRACTOR SHALL CONTACT WEST VIRGINIA UTILITIES PROTECTION SERVICE WITH A MINIMUM OF 30-DAYS PRIOR TO EXCAVATION, INSTALLATION OF ANY PIPES AND STRUCTURES.
 - WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS.
 - ALL CONSTRUCTION SHALL BE EXACTLY AS SHOWN FOR THIS SITE. NO CONSTRUCTION SHALL BE PERMITTED UNLESS THE CONTRACTOR HAS BEEN ADVISED BY THE ENGINEER TO MAKE CHANGES TO THE PLAN. ANY CHANGES TO THE PLAN SHALL BE MADE BY THE ENGINEER AND SHALL BE SUBJECT TO THE SIGNATURE OF THE ENGINEER.
 - CONTRACTOR SHALL FOLLOW ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS FOR EROSION CONTROL, SEDIMENTATION CONTROL, SLOPE PROTECTION, AND STABILIZATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
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Estimated Stock Water Balance (CY)

Total Development - Grand Total:

Item	Qty	Unit	Stockpile
Pad	16,751	51,330	(34,568)
Impoundment	47,954	14,737	33,217
Road	1,181	564	-416
Totals	64,963	82,043	-4,767

Soil Adjustments for Aggregate (Inches):

Pad	2,338
Total Soil Balance	141 CuYd

Stockpile Tapped (Limit of Disturbance):

Est. Stockpile Capacity (Loose CV)	14,557
Est. Stockpile Capacity (Compacted CV)	9,241
Minimum Total Stockpile Capacity Required (CV)	16,958
Minimum Total Stockpile Capacity Required (CV)	17,019

Notes:

- Material balance is not given methodically.
- Stockpile volume based on 1.40 average density.
- Material data is used aggregate quantities based on estimates and may not be representative of actual quantities.
- Estimates do not reflect contractor pay volumes.

Estimated Quantities (2' Pad CV)

Item	Quantity	Unit	Volume
Gravel	17,425	cu yd	1,204
Crusher Run	2,381	cu yd	168
Top Layer Chip & Seal (Paved CV)	1,277	cu yd	91
Estimated Compost Filter Sock Length (LF)	2,356	1,100	3,586
Estimated Total Limit of Disturbance (Acres)	17,425		
Estimated Erosion Control Limit of Disturbance (Acres)	9,300		
Estimated Wet Pad & Road Limit of Disturbance (Acres)	112/17		
Wet Pad Paved Pre-Construction (Square Feet)	100,131		

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

WEST VIRGINIA **CALL BEFORE YOU DIG!**

Dial 811 or 800.245.4848

West Virginia Department of Transportation

APPROVED: MFP 05/23/2018

CONTRACT: MFP 05/23/2018

DRAWN: SJA 05/06/2018

PROJECT: HG 1209 PAD & IMPONDMENT

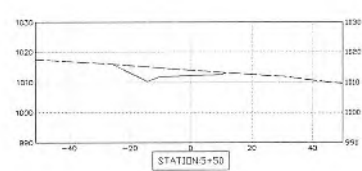
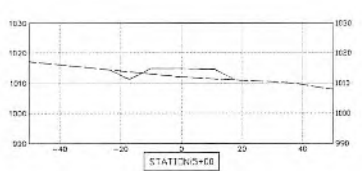
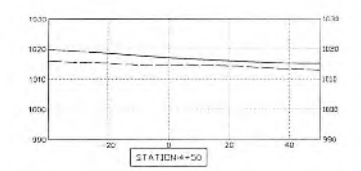
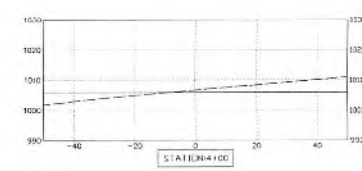
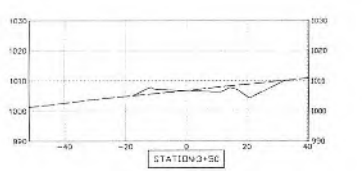
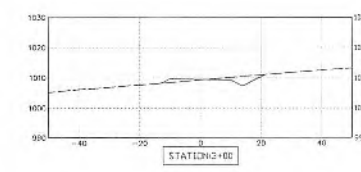
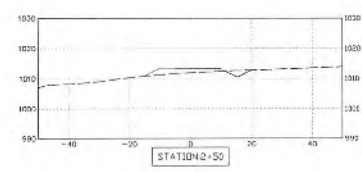
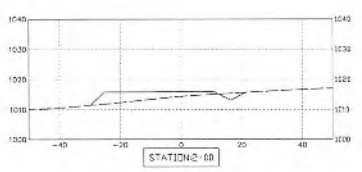
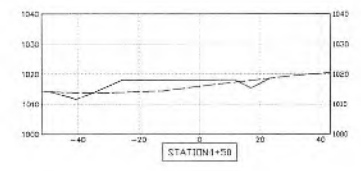
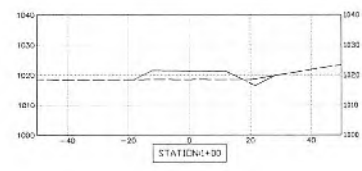
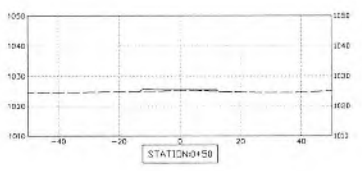
DATE: 05/23/2018

SHEET: 20

Penn E&R
Environmental & Construction, Inc.

111 WYAN COUNTY, WETTERSBURG, PA 15301
412-725-1222

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LEGEND
 - - - - - EXISTING GRADE
 _____ PROPOSED GRADE

THE DRAWING IS CONTRACTED. THE DRAWING IS A FINAL DESIGN AND ONLY INTENDED TO BE USED FOR THE PURPOSES OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF THE DATA AND THE DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.

REVISION	DATE	DESCRIPTION
1	5/21/18	ADDED PROPERTY AND MODIFICATIONS PER OUR COMMENTS
2	6/08/18	PAD DRAINAGE DESIGN, ADDED DITCHES, DRAINAGE, ADDED STORMWATER
3	6/22/18	IMPONDMENT DESIGN, ADDED DITCHES, DRAINAGE, ADDED STORMWATER
4	7/02/18	MODIFICATIONS PER OUR COMMENTS
5	10/17/18	ADDED UTILITY LOCATIONS AND DITCHES PER OUR COMMENTS



ACCESS ROAD SECTIONS
 HG 1209 PAD & IMPONDMENT
 UNION DISTRICT
 HARRISON COUNTY, WEST VIRGINIA

PREPARED BY:
 HG ENERGY II APPALACHIA, LLC
 PARKERSBURG, WEST VIRGINIA

WEST VIRGINIA

CALL BEFORE YOU DIG!

Dial 811 or 800.245.4848

West Utility of West Virginia

AMENDED MFP 05/23/2018
 CHECKED MFP 05/23/2018
 DESIGN BUN 05/23/2018
 PROJECT No. 4000-PA007715

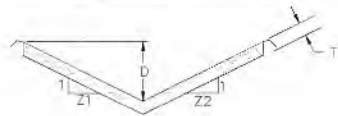
Penn E&R
 Environmental & Restoration, Inc.
 111 RYAN COURT, PITTSBURGH, PA 15206
 412-723-1033

DRAWING NUMBER
 PA007715-001
 SHEET 4

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

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

CHANNEL DETAIL



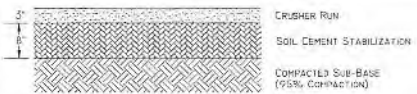
TRAPEZOIDAL RIP-RAP CHANNEL DIMENSIONS

CHANNEL STATION	MIN. DEPTH (FT)	Z1	Z2	T (FT)	RIPRAP SIZE (IN)
GAP-75-75 (RT)	2	2	2	0.75	3
450-540 (LT)	2	2	2	0.75	3
PAU CHANNEL	2	2	2	0.75	3
IMPOUNDMENT CHANNEL	1	2	2	0.75	3

ACCESS ROAD SURFACING DETAIL



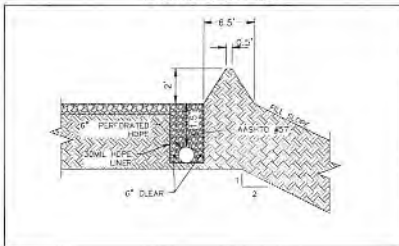
WELL PAD SURFACING DETAIL



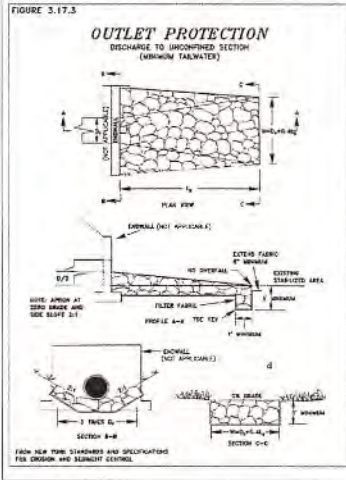
IMPOUNDMENT SURFACING DETAIL



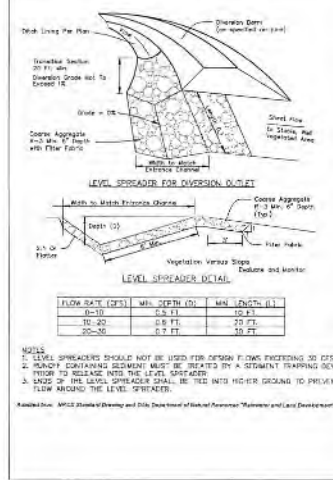
BERM DETAIL



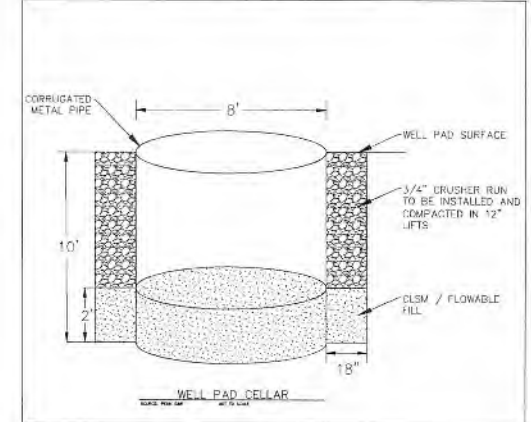
RIPRAP APRON



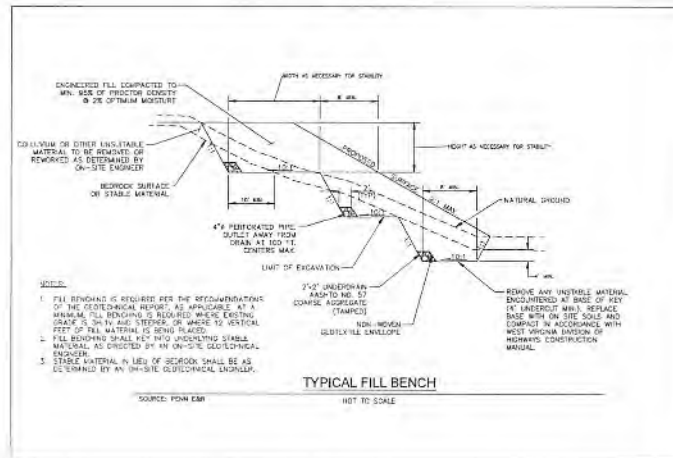
LEVEL SPREADER



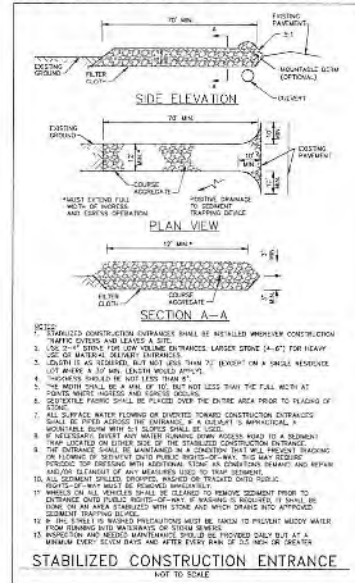
WELL PAD CELLAR



TOE BENCH-BONDING BENCHES DETAIL



ROCK CONSTRUCTION SITE ENTRANCE



REFERENCES:
 1. DETAILS FROM THE OFFICE OF OIL AND GAS, WEST VIRGINIA
 2. WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER AND WASTE MANAGEMENT, EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, EDITION 2008, BY PENN E&R, INC., UNLESS OTHERWISE NOTED.

REVISION	DATE	DESCRIPTION
1	5/21/18	ADDED REVISIONARY MARK NOTATIONS FOR EBP CORRECTIONS
2	6/08/18	PAU DRAINAGE REVISION, ADDED EXISTING UTILITY AND STOCKPILES
3	6/12/18	IMPOUNDMENT REVISION, ADDED EXISTING UTILITY AND STOCKPILES
4	7/02/18	ADDITIONS FOR EBP CORRECTIONS
5	10/01/18	ADDED SPECIAL TYPING, SEE THE BIDDING FOR SPECIALTY OF PAU AND STOCKPILES



CONSTRUCTION DETAILS
 HG 1209 PAD & IMPOUNDMENT
 UNION DISTRICT
 HARRISON COUNTY, WEST VIRGINIA

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

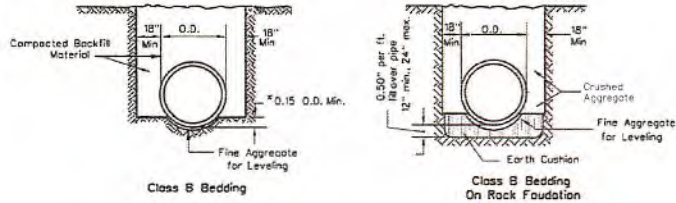
APPROVED: MEP 05/23/2018
 CHECKED: MEP 05/23/2018
 DRAWN: SJA 05/23/2018
 PROJECT NO: 400-2007105
 DRAWING NUMBER: PA07715-001
 SHEET NO: 50



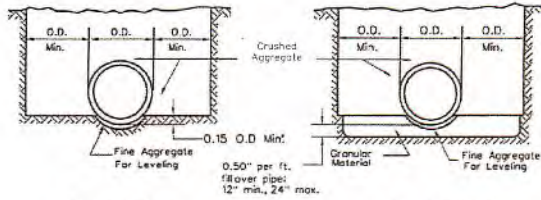
S:\PROJECT FILES\400-PA07715-001\DRAWINGS\CON PAD & IMPOUNDMENT\PA07715-001\07-2018-4-32.dwg

PIPE DETAILS

* Except for structural plate pipe where length of bedding arc need not exceed width of bottom plate. However, if structural plate pipe is first assembled and then placed in the trench, the 0.15 O.D. minimum value will apply.



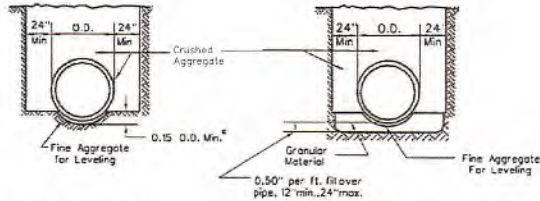
(Trench shown is for 18" thru 54" Pipe)



Class B Bedding

Class B Bedding On Rock Foundation

(Trench shown is for 60" thru 108" flexible pipe in soil cut fill sections)

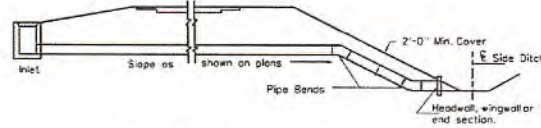


Class B Bedding

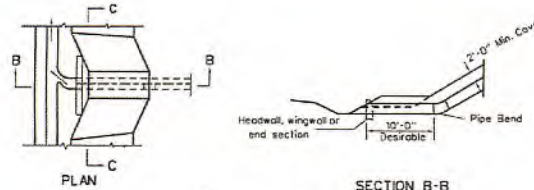
Class B Bedding On Rock Foundation

(Trench shown is for 60" thru 108" rigid pipe in cut sections)

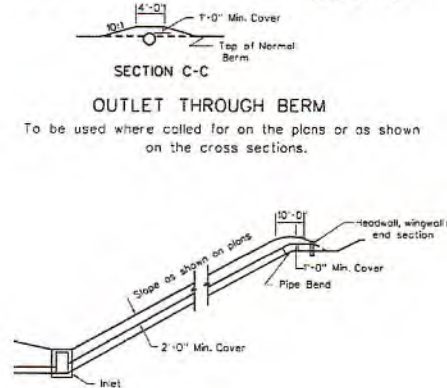
TYPICAL PIPE BEDDING



MEDIAN OUTLET IN HIGH FILL
To be used where called for on the plans or as shown on the cross sections.



OUTLET THROUGH BERM
To be used where called for on the plans or as shown on the cross sections.



PIPE FLUME
Earth Cut or Shallow Rock Cuts

NOTES

For pipe without corrugations, a one inch layer of fine aggregate for leveling will normally be adequate to achieve a uniform bearing surface. For corrugated pipe, layers shall be 1" minimum for 1/2" depth corrugations, 2" minimum for 1" depth corrugations, and 3" minimum for 2" or 2-1/2" depth corrugations.

REFERENCE

1. DETAILS FROM THE OFFICE OF GE. AND GAS, WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012.
2. WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER AND WASTE MANAGEMENT, EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2006, BY PENN E&R, INC. UNLESS OTHERWISE NOTED.

THE DRAWING IS CONTRACTED TO BE DRAWN BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF WEST VIRGINIA. THE ENGINEER'S LICENSE NUMBER IS 10000. THE ENGINEER'S FIRM IS PENN E&R, INC. THE ENGINEER'S FIRM IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS DRAWING. THE ENGINEER'S FIRM IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS DRAWING. THE ENGINEER'S FIRM IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS DRAWING.

REVISION	DATE	DESCRIPTION
1	2/21/18	ADDED PROJECT MAP, ADDITIONAL REV FOR COMMENTS
2	6/20/18	NO CHANGE REVISION, ADD DRAINAGE BASINS, ADD SLOPES
3	6/27/18	REVISIONS TO SLOPES, SLOPES AND SLOPES
4	7/20/18	REVISIONS FOR REV COMMENTS
5	12/01/18	ADDED SHEET TO DRAWING SET FOR THE PROJECT, EROSION AND SEDIMENT CONTROL



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

MISCELLANEOUS DRAINAGE
(sheet 1 of 4)

STANDARD SHEET DR8

CONSTRUCTION DETAILS

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

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

APPROVED: WEP 05/27/2018
CHECKED: WEP 05/23/2018
DRAWN: JLA 05/02/2018
PROJECT: No. 4000-PA007718

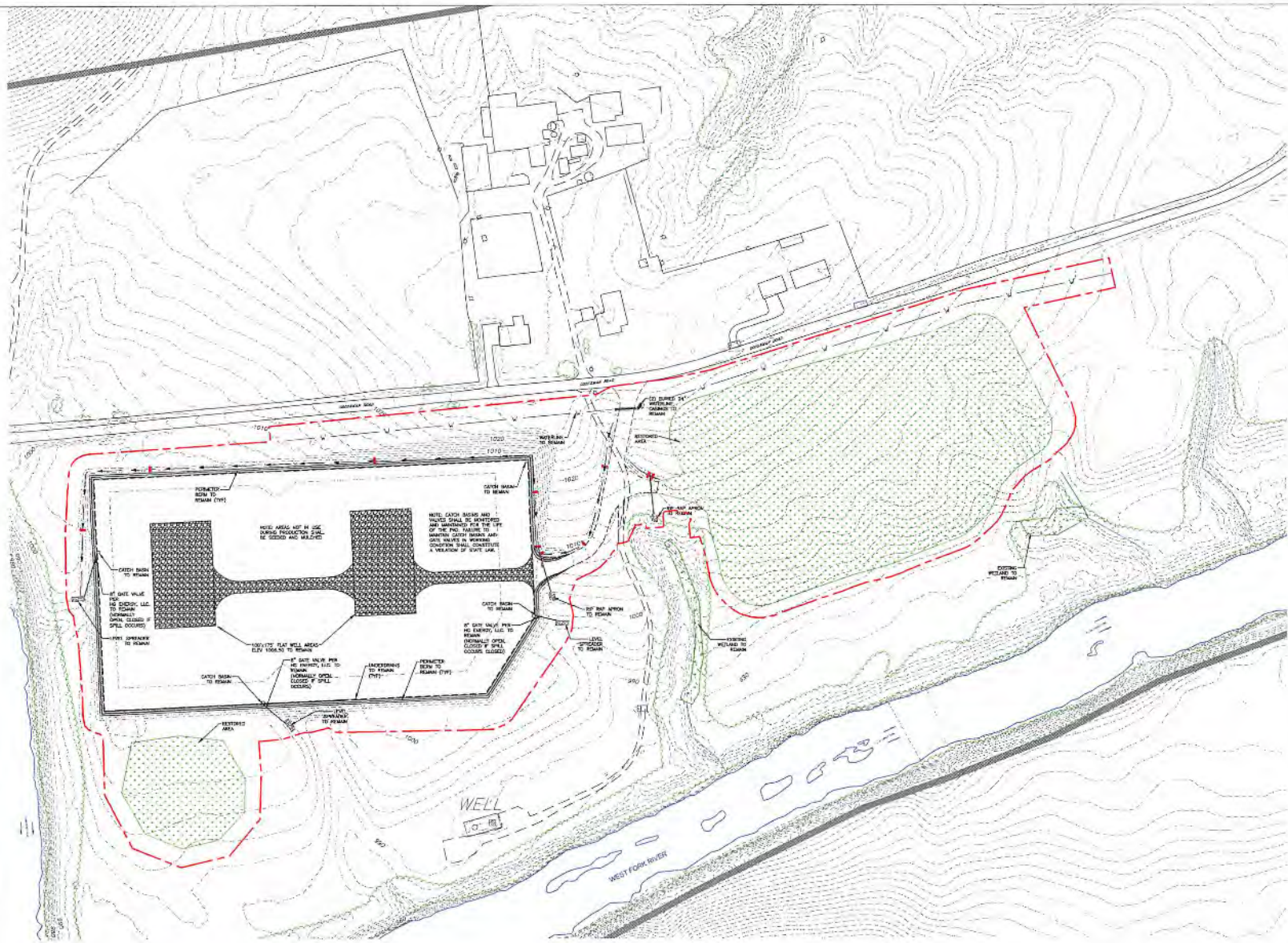
DRAWING NUMBER:
PA007718-001
SHEET 5C

Penn E&R
ENGINEERS & ARCHITECTS, INC.

111 BRAN COLT, PITTSBURGH, PA 15202
412-772-1222

S:\PROJECT FILES\4000-PA007718 MG_1209\ADMIN\1209 PAD & IMPOUNDMENT\PA007718 DETAILS\DWG.10/1/2018 4:02 PM

S:\PROJECT\1453\4000\4007715_HG_1209\DRAWINGS\1209_PAD & IMPOUNDMENT\4007715_940229_000_BALANCED_RESTORATION.DWG, 07/20/18 3:51 PM



- LEGEND**
- ROCK CHECK DAM
 - LEVEL SPREADER
 - ACCESS ROAD/PAD CHANNEL
 - APPROXIMATE LIMITS OF DISTURBANCE
 - EXISTING INDEX CONTOUR
 - EXISTING INTERMEDIATE CONTOUR
 - GRAVEL AREA TO REMAIN
 - RESTORED AREA

GENERAL NOTES:

1. FOR FALL PLACEMENT DURING RESTORATION, USE A MINIMUM LIFT THICKNESS OF 24 INCHES AND A MINIMUM COMPACTED TO TOP OF THE GRAVEL PROTEST COUNTY (DATA 4-2018)

REFERENCE:

1. TOPOGRAPHY OBTAINED FROM GLENN HOLLANDER, INC.
2. FLOODPLAIN BOUNDARIES OBTAINED FROM EARTH NATIONAL, LOCUS HEIGHTS, LA-TEX.
3. WETLAND DELINEATION FILES PROVIDED BY MR. ENGLISH @ APPALACHIA, LLC.

THIS DRAWING IS CONSIDERED THE DRAWING OF A THIRD PARTY AND IS NOT SUBJECT TO THE PROVISIONS OF WEST VIRGINIA REG. CODE, CHAPTER 20, ARTICLE 10, SECTION 10.10. ANY CONTRACTOR OR OWNER WHO WANTS TO CONTRACT FOR THIS PROJECT, MUST FIRST OBTAIN THE SERVICES OF A PROFESSIONAL ENGINEER OR ARCHITECT TO VERIFY THE ACCURACY OF THIS DRAWING AND BE HELD RESPONSIBLE FOR THE RESULTS OF SUCH VERIFICATION.

REVISION	DATE	DESCRIPTION
1	5/21/18	ADDED PROPERTY AND ACQUISITION FOR EDP ELEMENTS
2	6/08/18	PRO DRAINAGE REVISION, ADDED EXISTING GULCHES, ROCKS, STOCKPILES
3	6/12/18	IMPROVEMENT REVISION, ADJUSTED SITE BOUNDARY AND STOCKPILES
4	7/02/18	ADJUSTMENT FOR EDP ELEMENTS
5	10/24/18	ADDED "WELL" TO IMPROVEMENTS, ADJUSTED "WELL" LOCATION, ADDED "WELL" TO IMPROVEMENTS

SCALE - FEET
0 60 120 240

SITE RESTORATION PLAN
HG 1209 PAD & IMPOUNDMENT
UNION DISTRICT
HARRISON COUNTY, WEST VIRGINIA

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

APPROVED: MIP 06/23/2018
CHECKED: MIP 06/23/2018
DRAWN: DAN 02/08/2018
PROJECT NO: 4008-PAD07715

Penn E&R
Environmental & Remediation, LLC

DRAWING NUMBER:
PAD07715-001
SHEET 6

111 IRWAN COURT, HITCHCOCK, VA 24540
434-722-1222

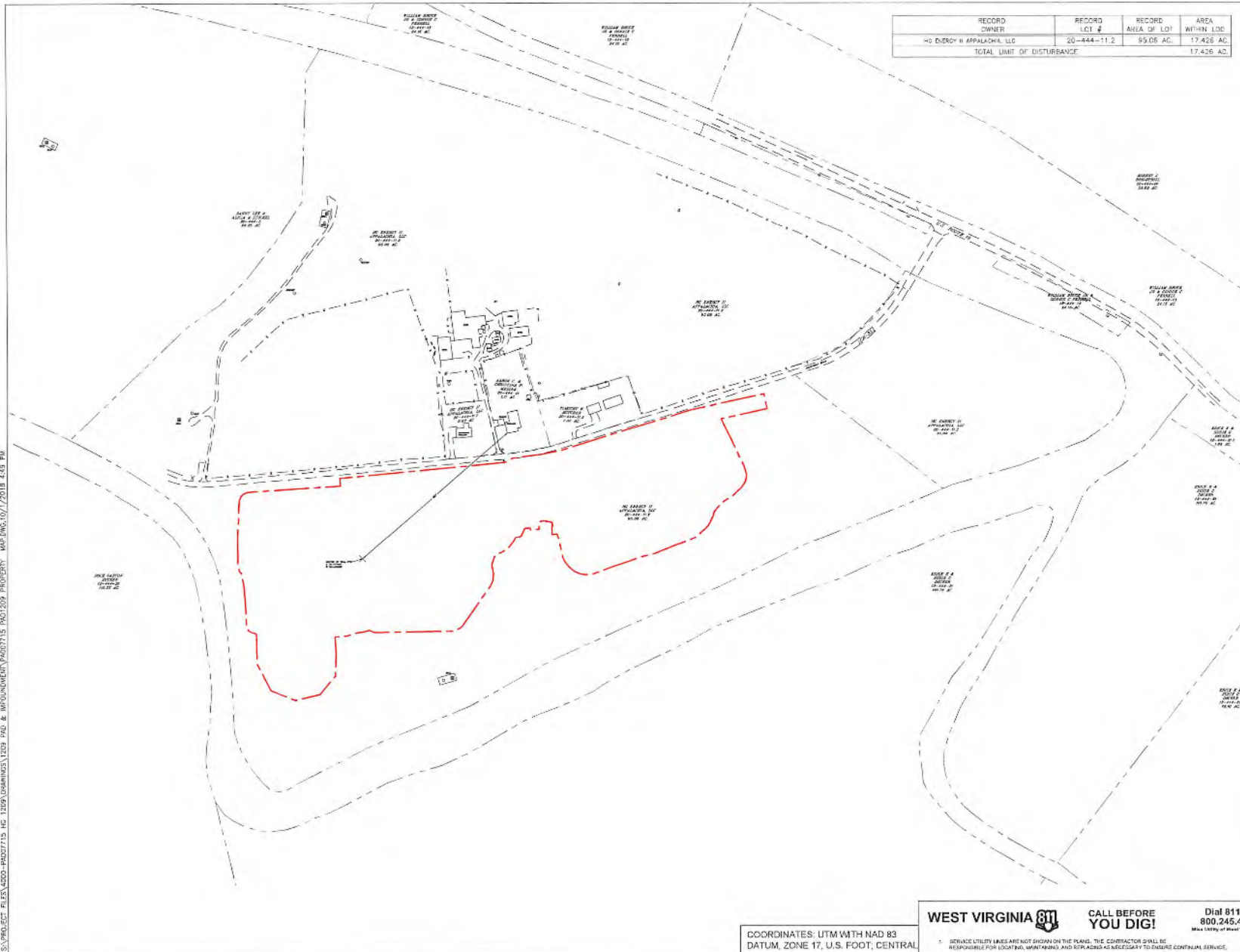
COORDINATES: UTM WITH NAD 83
DATUM, ZONE 17, U.S. FOOT, CENTRAL

WEST VIRGINIA **CALL BEFORE YOU DIG!**

Dial 811 or 800.245.4848
West Virginia's Utility Service

1. SERVICE NOT APPLICABLE TO THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING, AND REPLACING AS NECESSARY TO MAINTAIN COMMERCIAL SERVICE.

S:\PROJECT FILES\4000-PAD0715 HG 1209\ADMIN\1209 PAD & IMPOUNDMENT\PAD0715.Plot209 PROPERTY MAP.DWG,10/17/2018 4:08 PM



RECORD OWNER	RECORD LOT #	RECORD AREA OF LOT	AREA WITHIN LDC
HG ENERGY II APPALACHIA, LLC	20-444-11.2	95.06 AC.	17.426 AC.
TOTAL LIMIT OF DISTURBANCE			17.426 AC.

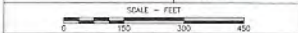
LEGEND

- APPROXIMATE LIMITS OF DISTURBANCE
- APPROXIMATE PROPERTY LINE
- - - EXISTING FENCE LINE
- - - EXISTING UTILITY POLE
- EXISTING STRUCTURE

REFERENCE:

- PROPERTY BOUNDARIES PROVIDED BY HG ENERGY II APPALACHIA, LLC.
- PROPERTY INFORMATION PROVIDED BY HG ENERGY II APPALACHIA, LLC & HG ENERGY II APPALACHIA, LLC.
- EXISTING UTILITY LINES SHOWN ON THIS PLAN ARE ONLY INTENDED TO BE A GUIDE FOR THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNMENT AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNMENT AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNMENT AND UTILITIES.

REVISION	DATE	DESCRIPTION
1	5/31/18	ISSUE PERMITS FOR EIP CONSTRUCTION
2	6/08/18	NO CHANGE REVISION ASSESS EXISTING UTILITIES, ASBESTOS STRUCKIES
3	8/12/18	IMPROVEMENT REVISIONS, AMENDED SITE PLAN AND STRUCKIES
4	7/22/18	REVISIONS FOR EIP COMMENTS
5	10/01/18	ISSUE PERMITS FOR EIP CONSTRUCTION



PROPERTY MAP
 HG 1209 PAD & IMPOUNDMENT
 UNION DISTRICT
 HARRISON COUNTY, WEST VIRGINIA
 PREPARED FOR
 HG ENERGY II APPALACHIA, LLC
 PARKERSBURG, WEST VIRGINIA

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



CALL BEFORE YOU DIG!

Dial 811 or 800.245.4848
 West Virginia 811

APPROVED: SEP 15/23/2018
 DESIGNED: SEP 15/23/2018
 DRAWN: SEP 15/23/2018
 PROJECT NO: 4000-PAD0715

Penn E&R
 Environmental & Remediation, Inc.
 111 RYAN COURT, PITTSBURGH, PA 15206
 412-722-1222

DRAWING NUMBER
 PAD0715-001
 SHEET 7

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



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

4703305944 03/29/2019

January 24, 2019

EnerVest Operating Company
300 Capitol Street, Suite 200
Charleston, WV 25301

RECEIVED
Office of Oil and Gas
FEB 05 2019
WV Department of
Environmental Protection

RE: Area of Review – Nays 1209 Well Pad (S-7H to S-12H)
Hydraulic Fracturing Notice

Dear Sir:

HG Energy II Appalachia, LLC, has developed a Marcellus pad (Nays 1209 well pad) located in Harrison County, WV. As an owner or operator of a conventional natural gas well in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6900' TVD) and existing conventional natural gas wells.

HG Energy anticipates conducting hydraulic fracturing of the Nays 1209 Pad during the fourth quarter of 2019. We have identified conventional natural gas wells operated by your company within 500' of one of the newly planned laterals (Nays 1209 S laterals). A plat for the wells is attached.

We recommend conventional well operators conduct the following activities before, during and after the fracturing operation.

1. Inspect surface equipment prior to fracturing to establish integrity and well conditions.
2. Observe wells closely during and after fracturing and monitor for abnormal increases in gas, water or pressure.
3. Inspect or install master valves rated at 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and HG Energy if any changes in water, gas production, pressure or other anomalies are identified.

Should you have any questions or desire further information, please contact me at 304-420-1119 or dwhite@hgeneryllc.com. You may also contact the WV Office of Oil and Gas at 304-926-0444.

Sincerely,

Diane White

Diane White

Enclosure



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

RECEIVED
Office of Oil and Gas

FEB 05 2019

WV Department of
Environmental Protection

03/29/2019

January 24, 2019

EQT Production Company
115 Professional Place
Bridgeport, WV 26330

RE: Area of Review – Nays 1209 Well Pad (S-7H to S-12H)
Hydraulic Fracturing Notice

Dear Sir:

HG Energy II Appalachia, LLC, has developed a Marcellus pad (Nays 1209 pad) located in Harrison County, WV. As an owner or operator of a conventional natural gas well in this area, we are requesting your assistance in this matter.

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HG Energy anticipates conducting hydraulic fracturing of the Nays 1208 Pad during the fourth quarter of 2019. We have identified conventional natural gas wells operated by your company within 500' of one of the newly planned laterals (Nays 1209 S Well Pad). A plat for the wells is attached.

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2. Observe wells closely during and after fracturing and monitor for abnormal increases in gas, water or pressure.
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4. Notify the OOG and HG Energy if any changes in water, gas production, pressure or other anomalies are identified.

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Sincerely,

Diane White

Diane White

Enclosure



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

RECEIVED 03/29/2019
Office of Oil and Gas
FEB 05 2019
WV Department of
Environmental Protection

January 24, 2019

Alliance Petroleum Corporation
67 Collins Run Road
Glenville, WV 26351

RE: Area of Review – Nays 1209 South Laterals/Well Pad (S-7H to S-12H)
Hydraulic Fracturing Notice

Dear Sir:

HG Energy II Appalachia, LLC, has developed a Marcellus pad (Nays 1209 pad) located in Harrison County, WV. As an owner or operator of a conventional natural gas well in this area, we are requesting your assistance in this matter.

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Sincerely,

Diane White

Diane White

Enclosure



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

03/29/2019

RECEIVED
Office of Oil and Gas
FEB 05 2019
WV Department of
Environmental Protection

January 24, 2019

Ross & Wharton Gas Company
29 Morton Avenue
Buckhannon, WV 26201

RE: Area of Review – Nays 1209 Well Pad (S-7H to S-12H)
Hydraulic Fracturing Notice

Dear Sir:

HG Energy II Appalachia, LLC, has developed a Marcellus pad (Nutter 1208 pad) located in Harrison County, WV. As an owner or operator of a conventional natural gas well in this area, we are requesting your assistance in this matter.

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Sincerely,

Diane White

Diane White

Enclosure



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

03/29/2019

RECEIVED
Office of Oil and Gas
FEB 05 2019
WV Department of
Environmental Protection

January 24, 2019

Dominion Energy Transmission
Attn: Charles Cunningham
2397 Davisson Run Road
Clarksburg, WV 26301

RE: Area of Review – Nays 1209 Well Pad (S-7H to S-12H)
Hydraulic Fracturing Notice

Dear Sir:

HG Energy II Appalachia, LLC, has developed a Marcellus pad (Nays 1209 well pad) located in Harrison County, WV. As an owner or operator of a conventional natural gas well in this area, we are requesting your assistance in this matter.

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Sincerely,

Diane White

Diane White

Enclosure



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

RECEIVED
Office of Oil and Gas
FEB 05 2019
WV Department of
Environmental Protection

03/29/2019

January 24, 2019

Key Oil Company, Inc.
4225 Nashville Road
Franklin, KY 42134

RE: Area of Review – Nays 1209 Well Pad (S-7H to S-12H)
Hydraulic Fracturing Notice

Dear Sir:

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Sincerely,

Diane White

Diane White

Enclosure



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

03/29/2019

RECEIVED
Office of Oil and Gas
FEB 05 2019

WV Department of
Environmental Protection

January 24, 2019

Alliance Petroleum Corporation
67 Collins Run Road
Glennville, WV 26351

RE: Area of Review – Nays 1209 South Laterals/Well Pad (S-7H to S-12H)
Hydraulic Fracturing Notice

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4. Notify the OOG and HG Energy if any changes in water, gas production, pressure or other anomalies are identified.

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Sincerely,

Diane White

Diane White

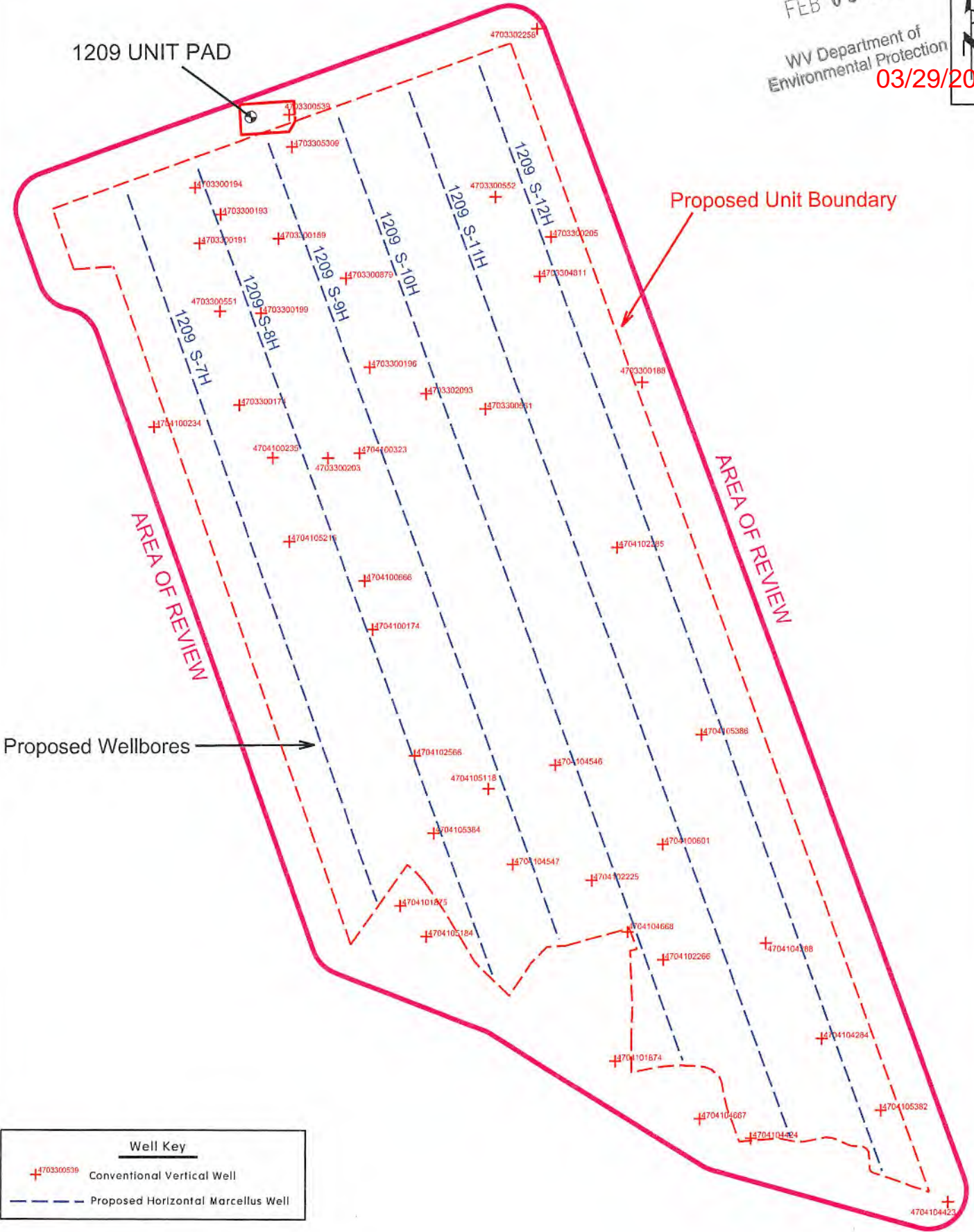
Enclosure

RECEIVED
Office of Oil and Gas

FEB 05 2019

WV Department of
Environmental Protection

03/29/2019



Well Key	
	Conventional Vertical Well
	Proposed Horizontal Marcellus Well

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

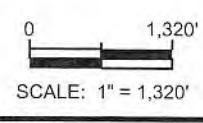
Area of Review for:

1209 UNIT PAD

- Proposed 1209 S-7H
- Proposed 1209 S-8H
- Proposed 1209 S-9H
- Proposed 1209 S-10H
- Proposed 1209 S-11H
- Proposed 1209 S-12H

Union District, Harrison County, W.Va.
Hackers Creek District, Lewis County, W.Va.

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



1/24/2019

EXISTING WELLS 4,500' IN DEPTH OR GREATER:

1209 UNIT SOUTH PAD AND PROPOSED WELLS S-7H, S-8H, S-9H, S-10H, S-11H & S-12H

CT	API	COUNTY	FARM	OPERATOR NAME	FORMATION NAME	WELL TYPE	TVD	STATUS	LATITUDE	LONGITUDE
1	4703304811	Harrison	Elizabeth Layman	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4499	ACTIVE	39.142105	-80.429888
2	4703300879	Harrison	Eric K & Susie G Decker	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4520	ACTIVE	39.142085	-80.439027
3	4704104547	Lewis	Ruth Turner	Alliance Petroleum Corp.	Greenland Gap Fm	Gas	4569	ACTIVE	39.120742	-80.431373
4	4704105382	Lewis	Charles D Cole II	Dominion Energy Transmission, Inc.	Brallier	Gas	4573	ACTIVE	39.111751	-80.414088
5	4704104546	Lewis	Ruth E Turner	Alliance Petroleum Corp.	Greenland Gap Fm	Gas	4609	ACTIVE	39.124367	-80.429326
6	4704104668	Lewis	John H Neely	Key Oil Co.	Elk	Gas w/ Oil Show	4870	ACTIVE	39.118277	-80.425974
7	4704104667	Lewis	James B/C Sumpter	Key Oil Co.	Greenland Gap Fm	Gas w/ Oil Show	4906	ACTIVE	39.111461	-80.422622

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EXISTING WELLS LOCATED WITHIN THE AREA OF REVIEW FOR:

1209 UNIT SOUTH PAD AND PROPOSED WELLS S-7H, S-8H, S-9H, S-10H, S-11H & S-12H

CT	API	COUNTY	FARM	OPERATOR NAME	FORMATION NAME	WELL TYPE	TVD	STATUS	LATITUDE	LONGITUDE
1	4703300063	Harrison	J A Hardway	Dominion Energy Transmission, Inc.	Fifty-foot	Storage	1636	ACTIVE	39.150649	-80.444245
2	4703300174	Harrison	J M Simon	Dominion Energy Transmission, Inc.	Berea Ss	Storage	1635	ACTIVE	39.137511	-80.444118
3	4703300176	Harrison	J B Gusman	Dominion Energy Transmission, Inc.	Gantz	Storage	1542	ACTIVE	39.149066	-80.444789
4	4703300188	Harrison	H Neeley	Dominion Energy Transmission, Inc.	Gordon Stray	Storage	1928	ACTIVE	39.138239	-80.42509
5	4703300189	Harrison	J B Gusman	Dominion Energy Transmission, Inc.	Gordon Stray	Storage	1945	ACTIVE	39.143536	-80.442195
6	4703300191	Harrison	J Q Musser	Dominion Energy Transmission, Inc.	Gordon	Storage	1845	ACTIVE	39.143391	-80.445922
7	4703300193	Harrison	J G Musser	Dominion Energy Transmission, Inc.	Fifty-foot	Storage	1715	PLUGGED	39.144441	-80.444918
8	4703300194	Harrison	J A Hardway	Dominion Energy Transmission, Inc.	Gantz	Storage	1580	ACTIVE	39.145423	-80.446108
9	4703300196	Harrison	L D Reed	Dominion Energy Transmission, Inc.	Thirty-foot	Storage	2070	ACTIVE	39.138853	-80.437952
10	4703300199	Harrison	J K Musser	Dominion Energy Transmission, Inc.	Thirty-foot	Storage	1976	ACTIVE	39.14084	-80.443046
11	4703300203	Harrison	S L Casto 1	Dominion Energy Transmission, Inc.	Fifty-foot	Storage	2057	ACTIVE	39.135554	-80.439959
12	4703300205	Harrison	W L Hughes	Dominion Energy Transmission, Inc.	Hampshire Grp	Storage	1904	ACTIVE	39.143536	-80.429337
13	4703300539	Harrison	J B Gusman	Dominion Energy Transmission, Inc.	Benson	Gas	4115	ACTIVE	39.148035	-80.441636
14	4703300551	Harrison	Bonnie M Detamore	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4170	ACTIVE	39.140924	-80.44499
15	4703300552	Harrison	J B Gusman	Dominion Energy Transmission, Inc.	Benson	Gas	4220	ACTIVE	39.144988	-80.431946
16	4703300561	Harrison	Howard Neeley	Dominion Energy Transmission, Inc.	Benson	Gas	4431	ACTIVE	39.137295	-80.432505
17	4703300879	Harrison	Eric K & Susie G Decker	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4520	ACTIVE	39.142085	-80.439027
18	4703302093	Harrison	Howard Neeley	Dominion Energy Transmission, Inc.	Gordon	Storage	2374	ACTIVE	39.137877	-80.4353
19	4703302258	Harrison	J B Gusman	Dominion Energy Transmission, Inc.	UNKNOWN	Storage	1759	ACTIVE	39.151084	-80.429896
20	4703304641	Harrison	William B Ferrell Jr	Dominion Energy Transmission, Inc.	Benson	Gas	4264	ACTIVE	39.151966	-80.43734
21	4703304811	Harrison	Elizabeth Layman	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4499	ACTIVE	39.142105	-80.429888
22	4703305309	Harrison	Nays Riverbend Farm Inc	Dominion Energy Transmission, Inc.	Weir	Gas	1405	ACTIVE	39.146873	-80.441525
23	4704100174	Lewis	Alba V Hitt 1	Dominion Energy Transmission, Inc.	Up Devonian	Gas	4145	ACTIVE	39.129313	-80.437909
24	4704100234	Lewis	R A Beeghley	Dominion Energy Transmission, Inc.	Gantz	Storage	1742	ACTIVE	39.136739	-80.448136
25	4704100235	Lewis	Rosa Musser	Dominion Energy Transmission, Inc.	Gantz	Storage	4500	ACTIVE	39.135579	-80.442549
26	4704100323	Lewis	S G Hall	Dominion Energy Transmission, Inc.	Gantz	Storage	1760	ACTIVE	39.135724	-80.438452
27	4704100601	Lewis	Isaac Jackson	Dominion Energy Transmission, Inc.	Benson	Gas	4357	ACTIVE	39.121463	-80.424285
28	4704100666	Lewis	Nora Walker	UNKNOWN	Gantz	Storage	1589	ABANDONED	39.131084	-80.438265
29	4704101874	Lewis	M D Walker 5	Alliance Petroleum Corp.	Benson	Gas	4305	ACTIVE	39.113583	-80.426591
30	4704101875	Lewis	M D Walker 6	EQT Production Co.	Benson	Gas	4262	ACTIVE	39.119259	-80.436687
31	4704102225	Lewis	Howard Neely	Alliance Petroleum Corp.	Hampshire Grp	Gas	2484	ACTIVE	39.120162	-80.427649
32	4704102266	Lewis	F Colvin	Alliance Petroleum Corp.	Fifth Sand	Gas	2286	ACTIVE	39.117262	-80.424298

33	4704102285	Lewis	H Bailey	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4140	ACTIVE	39.132244	-80.426348
34	4704102566	Lewis	J H Bailey	Enervest Operating, LLC	Benson	Gas	4254	ACTIVE	39.12472	-80.435962
35	4704104284	Lewis	Charles D Cole 1	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4322	ACTIVE	39.114361	-80.416852
36	4704104288	Lewis	Charles D Cole II 2	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4473	ACTIVE	39.117842	-80.419458
37	4704104423	Lewis	James Winemiller	Ross & Wharton Gas Co.	UNKNOWN	UNKNOWN	-	PLUGGED	39.108416	-80.410922
38	4704104424	Lewis	Roy C Bargerhuff	Ross & Wharton Gas Co.	UNKNOWN	UNKNOWN	4085	PLUGGED	39.110736	-80.420202
39	4704104546	Lewis	Ruth E Turner	Alliance Petroleum Corp.	Greenland Gap Fm	Gas	4609	ACTIVE	39.124367	-80.429326
40	4704104547	Lewis	Ruth Turner	Alliance Petroleum Corp.	Greenland Gap Fm	Gas	4569	ACTIVE	39.120742	-80.431373
41	4704104667	Lewis	James B/C Sumpter	Key Oil Co.	Greenland Gap Fm	Gas w/ Oil Show	4906	ACTIVE	39.111461	-80.422622
42	4704104668	Lewis	John H Neely	Key Oil Co.	Elk	Gas w/ Oil Show	4870	ACTIVE	39.118277	-80.425974
43	4704105118	Lewis	Kevin B/Sherri K Jerden	Berry Energy, Inc.	Benson	Gas	4389	ACTIVE	39.123497	-80.432491
44	4704105184	Lewis	Donald E & Glenna Linger	Berry Energy, Inc.	Greenland Gap Fm	Gas	4409	ACTIVE	39.118132	-80.435468
45	4704105215	Lewis	Lee Stalaker	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4309	ACTIVE	39.132534	-80.441803
46	4704105382	Lewis	Charles D Cole II	Dominion Energy Transmission, Inc.	Brallier	Gas	4573	ACTIVE	39.111751	-80.414088
47	4704105384	Lewis	Kevin B & Sherri K Jerden	Berry Energy, Inc.	Benson	Gas	4390	ACTIVE	39.121902	-80.435097
48	4704105386	Lewis	Walter Neely Jr Trust	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	3442	ACTIVE	39.125428	-80.422437

PROPOSAL TO DRILL WITHIN DOMINION TRANSMISSION STORAGE FIELD

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Environmental Protection

03/29/2019

FIELD/ZONES: **DOMINION FINK/KENNEDY/LOST CREEK -GANTZ SAND**

WELL NAME: **Nays 1209 S-8H**

Well # **Nays 1209 S-8H**

DISTRICT/COUNTY/STATE: **Union, Harrison, WV**

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Submitted

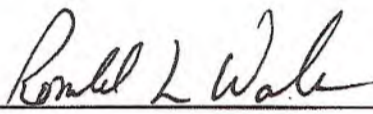


JOSH HINTON
HG ENERGY, LLC

DATE

1-28-19

Approved




DATE

1/30/2019

Dominion Energy Transmission

Approved



DATE

1/31/2019

Dominion Energy Transmission

Comments:

HG Energy has submitted this Casing & Cementing diagram and Drilling Plan to Dominion Transmission for Review. This signed document acknowledges that Dominion has reviewed the proposed casing program and the well's location within the Fink/Kennedy/Lost Creek storage field. This acknowledgement also confirms the proposed casing program is accurate to the proper storage zone as provided by HG Energy, LLC

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

03/29/2019

1) Well Operator: HG Energy II Appalachia, L 494519932 Harrison Union West Milford 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Nays 1209 S-8H 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 _____

S DW
1/28/2019

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: 18,806'

11) Proposed Horizontal Leg Length: 11373'

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

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

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14) Approximate Saltwater Depths: None noted in offsets

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

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

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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- _____
OPERATOR WELL NO. Nays 1209 S-8H
Well Pad Name: Nays 1209

18)

CASING AND TUBING PROGRAM

03/29/2019

STORAGE
SIN

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	68	1735'	1735'	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	NEW	J-55	40	2500'	2500'	40% excess yield = 1.20, CTS
Production	5 1/2"	NEW	P-110	23	18806'	18806'	20% excess yield = 1.19, tail yield = 1.19
Tubing							
Liners							

STORAGE
SIN

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"	.480	3450		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 = 1.20, CTS
Production	5 1/2"	8 1/2"	.415	14520	12500	Type 1/Class A	20% excess yield = 1.19, tail yield = 1.19
Tubing							
Liners							

PACKERS

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Kind:				FEB 05 2019
Sizes:				WV Department of Environmental Protection
Depths Set:				

19) Describe proposed well work, including the drilling and plugging back of any pilot hole: 03/29/2019

Drill the vertical depth to the Marcellus at an estimated total vertical depth of approximately 6900 feet. Drill horizontal leg to estimated 11,373 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. Slitwater 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.
Packer- Run 1 packer every 3 joints to surface.
Casing - Run Spacing on every joint.
Intermediate - Run Spacing on first 2 joints then every third joint to 100' from surface.
Production - Run 1 centralizer every 3 joints from the top of the curve to surface. Run 1 split centralizer every 3 joints from the top of the curve to the top of the curve.

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

Conductor-NA, Casing to be drilled in w/ Dual Rotary Rig.
Fresh Water - 14.8 ppg PNE-1 + 3% Isom CaCl₂ 40% Slurry Yield = 1.25, CTS
Casing - Lead 14.8 ppg PNE-1 + 2.5% Isom CaCl₂ 40% Slurry Yield 14.8 ppg PNE-1 + 0.5% Isom CaCl₂ 40% Slurry Yield, CTS
Intermediate - Lead 14.8 ppg PNE-1 + 2.5% Isom CaCl₂ 40% Slurry Yield, Tail 14.8 ppg PNE-1 + 0.5% Isom CaCl₂ 40% Slurry Yield, CTS
Production - Lead 14.8 ppg PNE-1 + 0.5% Isom CaCl₂ 40% Slurry Yield + 0.2% Isom CaCl₂ 40% Slurry Yield, Tail 14.8 ppg PNE-1 + 0.5% Isom CaCl₂ 40% Slurry Yield + 0.2% Isom CaCl₂ 40% Slurry Yield, CTS

25) Proposed borehole conditioning procedures:

Conductor - Clean the hole to clean at TD.
Fresh Water - Once casing is installed depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.
Casing - Once casing is at setting depth, circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.
Intermediate - Once casing is at setting depth, circulate and condition 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 24 hours up, or until returns and pump pressures indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping cement.

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*Note: Attach additional sheets as needed.



1209 S-8H
Marcellus Shale Horizontal
Harrison County, WV

				1209 S-8H SHL				237379.28N 1732703.34E		
Ground Elevation		1007'		1209 S-8H LP				236703.88N 1731656.4E		
Azm		160.751°		1209 S-8H BHL				225966.98N 1735405.59E		
WELLBORE DIAGRAM	HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS
	30"	30" 157.5# LS	Conductor	0	100	AIR	N/A, Casing to be drilled in w/ Dual Rotary Rig	N/A	Ensure the hole is clean at TD.	Conductor casing = 0.5" wall thickness
	24"	20" 94# J-55	Fresh Water	0	135	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" 68# 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 <i>will also be running ECP for isolating storage zone*</i>	Once casing is at setting depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.480" wall thickness Burst=3450 psi
			Little/Big Lime	1126 / 1167	1151 / 1243					
			Injun / Gantz (Storage)	1243 / 1535	1349 / 1585					
			Intermediate 1	0	1735					
	12.25'	9-5/8" 40# J-55 BTC	Fifty / Thirty Foot	1650 / 1730	1697 / 1742	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
			Gordon Stray / Gordon	1785 / 1850	1850 / 1940					
			5th Sand	2035	2070					
			Bayard Sand	2125	2160					
	8.5" Vertical	5-1/2" 23# P-110 HC CDC HTQ	Speechley	2745	2763	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=1.04 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
			Balltown	2965	3005					
Benson			4050	4083						
8.5" Curve	Rhinestreet		5865	6140	11.5ppg-12.5ppg SOBM	Run 1 spiral centralizer every 3 joints from the 1st 5.5" long joint to the top of the curve.				
	Cashaqua		6140	6341						
	Middlesex		6341	6421						
	West River		6421	6514						
	Burkett		6514	6540						
	Tully Limestone		6540	6644						
	Hamilton		6644	6863						
8.5" Lateral	Marcellus		6863	6914	11.5ppg-12.5ppg SOBM	Run 1 spiral centralizer every 3 joints from the 1st 5.5" long joint to the top of the curve.				
	TMD / TVD (Production)		18806	6900						
	Onondaga		6914							

LP @ 6900' TVD / 7433' MD

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

+/-11373' ft Lateral

TD @ +/-6900' TVD
+/-18806' MD

X=centralizers

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BHL is located on topo map 3,011 feet south of Latitude: 39°07'30"
 SHL is located on topo map 6,803 feet south of Latitude: 39°10'00"

BHL is located on topo map 4,450 feet west of Longitude: 80°25'00"
 SHL is located on topo map 7,269 feet west of Longitude: 80°25'00"

03/29/2019

SEE PAGE 2 FOR PLAT DUE TO LENGTH OF LATERAL

SEE PAGE 3 FOR SURFACE OWNERS & LESSORS



SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4333347.25
 E:548191.97
 UTM 17-NAD83(FT)
 N:14216990.10
 E:1798526.50
 LAT/LON DATUM-NAD83
 LAT:39.147988
 LON:-80.442296

APPROX. LANDING POINT
 UTM 17-NAD83
 N:4333136.18
 E:547876.44
 UTM 17-NAD83(FT)
 N:14216297.60
 E:1797491.30
 LAT/LON DATUM-NAD83
 LAT:39.146103
 LON:-80.445962

BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4329884.18
 E:549073.10
 UTM 17-NAD83(FT)
 N:14205628.36
 E:1801417.32
 LAT/LON DATUM-NAD83
 LAT:39.116734
 LON:-80.432350

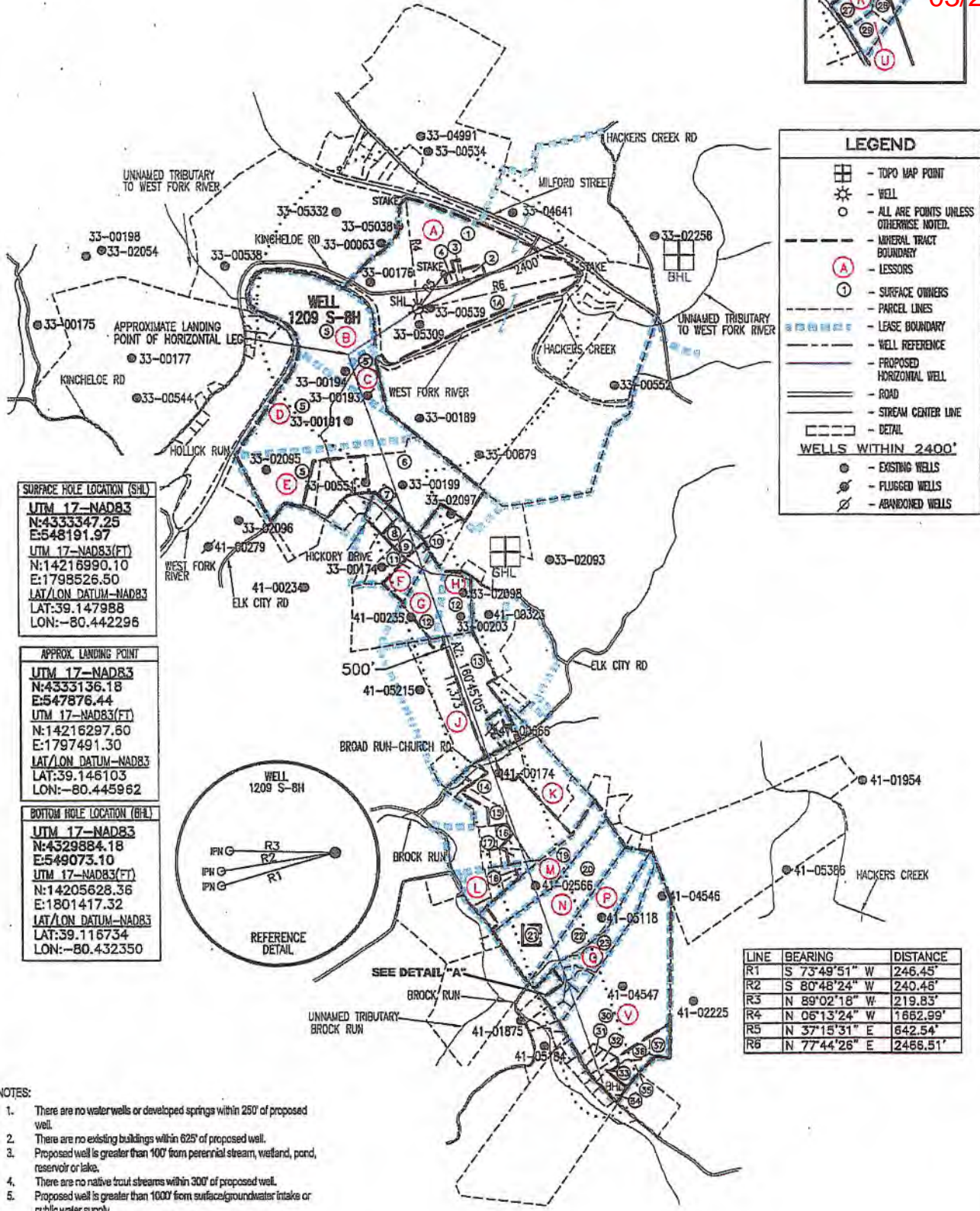
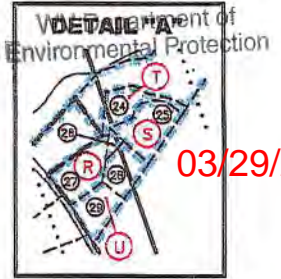
Blue Mountain
 11023 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486

FILE #: <u>1209 S-8H</u>	I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION. Signed: <i>George D. Six</i> R.P.E.: _____ L.L.S.: P.S. No. 2000	 PLACE SEAL HERE
DRAWING #: <u>1209 S-8H</u>		
SCALE: <u>1" = 2000'</u>		
MINIMUM DEGREE OF ACCURACY: <u>1/2500</u>		
PROVEN SOURCE OF ELEVATION: <u>U.S.G.S. MONUMENT THOMAS 1498.81'</u>	DATE: <u>JANUARY 25, 2019</u>	OPERATOR'S WELL #: <u>1209 S-8H</u>
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25304		API WELL #: <u>47</u> <u>33</u> STATE COUNTY PERMIT
Well Type: <input type="checkbox"/> Oil <input type="checkbox"/> Waste Disposal <input checked="" type="checkbox"/> Production <input type="checkbox"/> Deep <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Liquid Injection <input type="checkbox"/> Storage <input checked="" type="checkbox"/> Shallow	WATERSHED: <u>MIDDLE WEST FORK CREEK</u> ELEVATION: <u>1,007'±</u>	
COUNTY/DISTRICT: <u>HARRISON / UNION</u> QUADRANGLE: <u>WEST MILFORD, WV 7.5'</u>		
SURFACE OWNER: <u>HG ENERGY II APPALACHIA, LLC</u> ACREAGE: <u>95.06±</u>		
OIL & GAS ROYALTY OWNER: <u>ANN COVINGTON, ET AL</u> ACREAGE: <u>474.816±</u>		
DRILL <input checked="" type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input type="checkbox"/> (SPECIFY): _____		
TARGET FORMATION: <u>MARCELLUS</u> ESTIMATED DEPTH: <u>TVD: 6,900'± TMD: 18,806'±</u>		
WELL OPERATOR <u>HG ENERGY II APPALACHIA, LLC</u> DESIGNATED AGENT <u>DIANE C. WHITE</u> Address <u>5260 DUPONT ROAD</u> Address <u>5260 DUPONT ROAD</u> City <u>PARKERSBURG</u> State <u>WV</u> Zip Code <u>26101</u> City <u>PARKERSBURG</u> State <u>WV</u> Zip Code <u>26101</u>		

FEB 05 2019

1209 S-8H

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SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83
N:4333347.25
E:548191.97
UTM 17-NAD83(FT)
N:14216990.10
E:1798526.50
LAT/LON DATUM-NAD83
LAT:39.147988
LON:-80.442296

APPROX. LANDING POINT
UTM 17-NAD83
N:4333136.18
E:547876.44
UTM 17-NAD83(FT)
N:14216297.50
E:1797491.30
LAT/LON DATUM-NAD83
LAT:39.146103
LON:-80.445962

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83
N:4329884.18
E:549073.10
UTM 17-NAD83(FT)
N:14205628.36
E:1801417.32
LAT/LON DATUM-NAD83
LAT:39.116734
LON:-80.432350

LINE	BEARING	DISTANCE
R1	S 73°49'51" W	246.45'
R2	S 80°48'24" W	240.48'
R3	N 89°02'18" W	219.83'
R4	N 06°13'24" W	1662.99'
R5	N 37°15'31" E	642.54'
R6	N 77°44'26" E	2466.51'

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

API WELL #: 47 33
STATE COUNTY PERMIT



JANUARY 25, 2019



George D. Six

1209 S-8H

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03/29/2019

WV Department of
Environmental Protection

	SURFACE OWNER	DIST-TM/PAR
1	DANNY LEE & ALICIA A. STICKEL	P/O 20-444/11.2
1A	HG ENERGY II APPALACHIA, LLC	P/O 20-444/11.2
2	HG ENERGY II APPALACHIA, LLC	20-444/11.3
3	AARON C. & CHRISTINA P. MEDINA	20-444/11
4	HG ENERGY II APPALACHIA, LLC	20-444/11.1
5	ROCK GARTON	12-444/26
6	ROBERT D. & GEORGINA STARKEY	12-444/29
7	*MARK A. & KIMBERLY S. LINGER	12-444/29.1
8	STEVEN L. & JOYCE M. CLIFTON	12-444/37.7
9	GARY & MARCIA ROGERS	12-444/37.6
10	WILLIAM J. HOGAN JR.	12-444/37.5
11	*DONALD EARL HONAKER	12-444/37.4
12	ROBERT SCOTT STARKEY	4-7B/60
13	JOHN AUBREY LAMB	4-7B/5.3
14	STEPHEN E. & DONNA D. SMITH	4-7B/29.3
15	*BROAD RUN CEMETERY	4-7B/26
16	CHARLES E. BYRNE	4-7C/86
17	ALLEN C. & LILLY M. JACKSON	4-7C/73
18	FRANK L. & MARY ELLEN BRAGG	4-7C/68
19	ROBERT G. & ALISA G. GUM	4-7C/30.2
20	ROBERT G. & ALISA G. GUM	4-7C/31
21	ROBERT G. & ALISA G. GUM	4-7C/31.1
22	KEVIN B. & SHERI K. JERDEN	4-8C/1.1
23	KEVIN B. & SHERI K. JERDEN	4-8C/1.4
24	M. STEVEN & TRICIA A. JERDEN	4-8C/1.8
25	GREGORY C. & DEBRA L. ALDERSON	4-8C/1.6
26	JOHN L. BREEN	4-8C/1.3
27	JOHN L. BREEN	4-8C/1.5
28	ROGER G. RUSSELL	4-8C/1.7
29	ROGER G. RUSSELL	4-8C/1.2
30	WILLIAM H. TURNER	4-8C/2
31	WILLIAM R. & ESTYLEEN KINNEY (LIFE)	4-8C/2.2
32	WILLIAM H. TURNER	4-8C/2.1
33	WILLIAM H. TURNER	4-8C/6.4
34	JANICE L. OLDAKER	4-8C/6.2
35	LESTER B. & WINFRED M. BLEVINS	4-8C/6.3
36	LESTER B. & WINFRED M. BLEVINS	4-8C/6.1
37	HENRY A. & PATRICIA E. STRADER	4-8C/6

* - DENOTES PARCEL WITHIN 30 FEET OF PLANNED WELL BORE

	LESSOR	LEASE NO.	DIST-TM/PAR
A	J. B. GUSMAN ET AL	FK020606	20-444/11.2
B	J. A. HARDWAY ET AL	FK004424	12-444/26
C	J. Q. MUSSER	FK061781	
D	W. W. BRANNON ET UX	FK032708	
E	J. K. MUSSER ET UX	FK002243	12-444/26 12-444/29 12-444/29.1
F	KENNETH R. SIMONS ET AL O.B. FRASHUER ET UX	FK064201 FK064208	12-444/37.7 12-444/37.6 12-444/37.5 12-444/37.4
G	J. Q. MUSSER ET UX	FK002249	4-7B/60
H	GENE GLADDEN ET UX (FEE) J. C. CASTO ET AL	FK094174 FK064200	
J	S. G. HALL ET UX	FK014031	4-7B/5.3
K	ALDA V. HITT	FK077958	4-7B/29.3 4-7B/26 4-7C/86 4-7C/73
L	C. A. BAILY	CNX26831600	4-7C/68
M	J. H. BAILEY ET AL	Q102176000	4-7C/30.2
N	ALISA G. GUM LORI LEE CALDWELL GERALD W. RAMSBURG KARRIE DIANE SIMS DENISE C. CARSON KAREN K. HOBBS KATRINA L. WEST DAVID C. GARVIN	Q102118000 Q102123000 Q098757000 Q102112000 Q102117000 Q102122000 Q102121000 Q102119000	4-7C/31
P	KEVIN B. JERDEN ET UX	Q102115000	4-8C/1.1
Q	KEVIN B. JERDEN ET UX	Q097844000	4-8C/1.4
R	JOHN L. BREEN	HG11051	4-8C/1.5 4-8C/1.3
S	GREGORY ALDERSON ET UX	HG11100	4-8C/1.6
T	STEVEN M. JERDEN ET UX	HG11073	4-8C/1.8
U	MELISSA SIGLEY	HG11050	4-8C/1.2 4-8C/1.7
V	HUGH RAMSBURG	FK068456	4-8C/2 4-8C/2.2 4-8C/2.1 4-8C/6.4 4-8C/6.2 4-8C/6 4-8C/6.1 4-8C/6.3

SURFACE HOLE LOCATION (SHL)

UTM 17-NAD83
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E:548191.97
UTM 17-NAD83(FT)
N:14216990.10
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UTM 17-NAD83(FT)
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LAT/LON DATUM-NAD83
LAT:39.146103
LON:-80.445962

BOTTOM HOLE LOCATION (BHL)

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E:549073.10
UTM 17-NAD83(FT)
N:14205628.36
E:1801417.32
LAT/LON DATUM-NAD83
LAT:39.116734
LON:-80.432350

JANUARY 25, 2019

API WELL #: 47 33
STATE COUNTY PERMIT



WW-6B
(04/15)

API NO. 47- _____ - 03/29/2019

OPERATOR WELL NO. Nays 1209 S-8H

Well Pad Name: Nays 1209

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

1) Well Operator: HG Energy II Appalachia, L.P.

<u>494519932</u>	<u>Harrison</u>	<u>Union</u>	<u>West Milford 7.5'</u>
------------------	-----------------	--------------	--------------------------

Operator ID County District Quadrangle

2) Operator's Well Number: Nays 1209 S-8H Well Pad Name: Nays 1209

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

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

5) Well Type (a) Gas Oil Underground Storage

Other _____

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No No

S DW
1/28/2019

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: 18,806'

11) Proposed Horizontal Leg Length: 11373'

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

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

14) Approximate Saltwater Depths: None noted in offsets

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

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

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

(a) If Yes, provide Mine Info: Name: _____

Depth: _____

Seam: _____

Owner: _____

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WW-6B
(04/15)

API NO. 47- _____
 OPERATOR WELL NO. Nays 1209 S-8H
 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	68	1735'	1735'	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	NEW	J-55	40	2500'	2500'	40% excess yield Lead/ 8% Excess Yield
Production	5 1/2"	NEW	P-110	23	18806'	18806'	20% excess yield + 1.19, tail yield = 1.20
Tubing							
Liners							

SDW
2/1/2019

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"	.480	3450		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 + 8% Excess Lead
Production	5 1/2"	8 1/2"	.415	14520	12500	Type 1/Class A	20% excess yield + 1.19, tail yield = 1.20
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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4703805944

API NO. 47- - 03/29/2019

OPERATOR WELL NO. Nays 1209 S-8H

Well Pad Name: Nays 1209

WW-6B
(10/14)

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 11,373 TMD, stimulate and be capable of producing from the Marcellus Formation. Should we encounter an unanticipated void in the coal, we will install a minimum of 20' of casing below the void but not more than 100' below the void, set a basket and grout to surface.

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

The stimulation will be completed with multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals. See attached list. Maximum pressure not to exceed 12,500 psi.

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

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

23) Describe centralizer placement for each casing string:

No centralizers will be used with conductor casing.
Freshwater - centralized every 3 joints to surface.
Coal - Bow Spring on every joint.
Intermediate - Bow Spring on first 2 joints then every third joint to 100' from surface.
Production - Run 1 spiral centralizer every 5 joints from the top of the curve to surface. Run 1 spiral centralizer every 3 joints from the 1st 5.5' long joint to the top of the curve.

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

Conductor - N/A. Casing to be drilled in w/ Dual Rotary Rig.
Fresh Water - 15.6 ppg PNE-1 + 3% bwoc 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 zero% Excess, CTS
Intermediate - Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl₂ 40% Excess, Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl₂ zero% Excess, CTS
Production - Lead: 14.5 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MPA170, Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA17020% Excess/Lead Yield=1.19/Tail Yield=1.94, CTS

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25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.



1209 S-8H
Marcellus Shale Horizontal
Harrison County, WV

		1209 S-8H SHL			237379.28N 1732703.34E				
Ground Elevation	1007'			1209 S-8H LP			236703.88N 1731656.4E		
Azm	160.751°			1209 S-8H BHL			225966.98N 1735405.59E		

WELLBORE DIAGRAM	HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS
	30"	30" 157.5# LS	Conductor	0	100	AIR	N/A, Casing to be drilled in w/ Dual Rotary Rig	N/A	Ensure the hole is clean at TD.	Conductor casing = 0.5" wall thickness
	24"	20" 94# J-55	Fresh Water	0	135	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" 68# 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 <i>*will also be running ECP for isolating storage zone*</i>	Once casing is at setting depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.480" wall thickness Burst=3450 psi
			Little/Big Lime	1126 / 1167	1151 / 1243					
			Injun / Gantz (Storage)	1243 / 1535	1349 / 1585					
	12.25"	9-5/8" 40# J-55 BTC	Fifty / Thirty Foot	1650 / 1730	1697 / 1742	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
			Gordon Stray / Gordon	1785 / 1850	1850 / 1940					
			5th Sand	2035	2070					
			Bayard Sand	2125	2160					
	8.5" Vertical	5-1/2" 23# P-110 HC CDC HTQ	Speechley	2745	2763	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
			Balltown	2965	3005					
			Benson	4050	4083					
			West Falls	4620	5865	11.5ppg-12.5ppg SOBM				
			Rhinestreet	5865	6140					
Cashaqua			6140	6341						
Middlesex			6341	6421						
8.5" Curve			5-1/2" 23# P-110 HC CDC HTQ	West River	6421	6514		11.5ppg-12.5ppg SOBM		
Burkett				6514	6540					
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					
		TMD / TVD (Production)	18806	6900						
			Onondaga	6914						

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LP @ 6900' TVD / 7433' MD
 8.5" Hole - Cemented Long String
 5-1/2" 23# P-110 HC CDC HTQ
 +/-11373' ft Lateral
 TD @ +/-6900' TVD
 +/-18806' MD

47089905944

X=centralizers

HG ENERGY

Location: Harrison County, WV
 Field: Harrison (NAD27 SP Northern Zone 4701)
 Facility: 1209 Pad

Slot: Slot #08
 Well: 1209 S-8H
 Wellbore: 1209 S-8H PWB



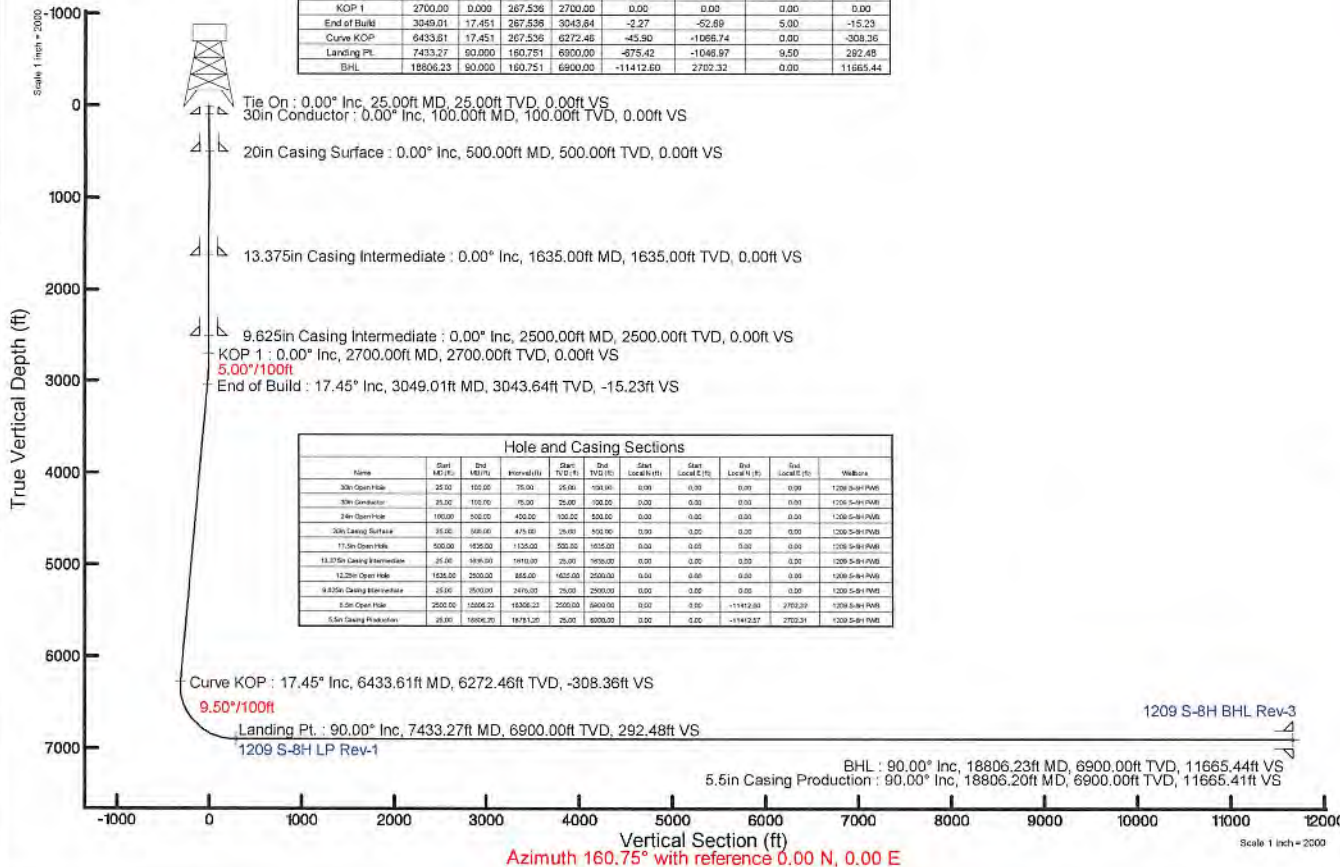
Plot reference wellbore: 1209 S-8H PWB Ev-01	Grid System: NAD27 Lambert West Virginia SP Northern Zone 4701, US Feet
True vertical depths are referenced to Patterson 347 (RKB)	North Reference: Grid North
Measured depths are referenced to Patterson 347 (RKB)	Scale: True distance
Patterson 347 (RKB) to Mean Sea Level: 1032 feet	Depth in feet
Mean Sea Level to Mean Line (At Slot #08): -1007 feet	Created by: bsls on 2019-01-15
Color tables are not referenced to Slot	Database: WA_MPL_EasternUS_Data

Location Information					
Facility Name	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude	
1209 Pad	1732374.000	237349.950	39°08'52.102"N	80°26'37.112"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude
Slot #08	29.33	329.35	1732703.340	237379.280	39°08'52.426"N
Patterson 347 (RKB) to Mud line (At Slot #08)					25ft
Mean Sea Level to Mud line (At Slot #08)					-1007ft
Patterson 347 (RKB) to Mean Sea Level					1032ft

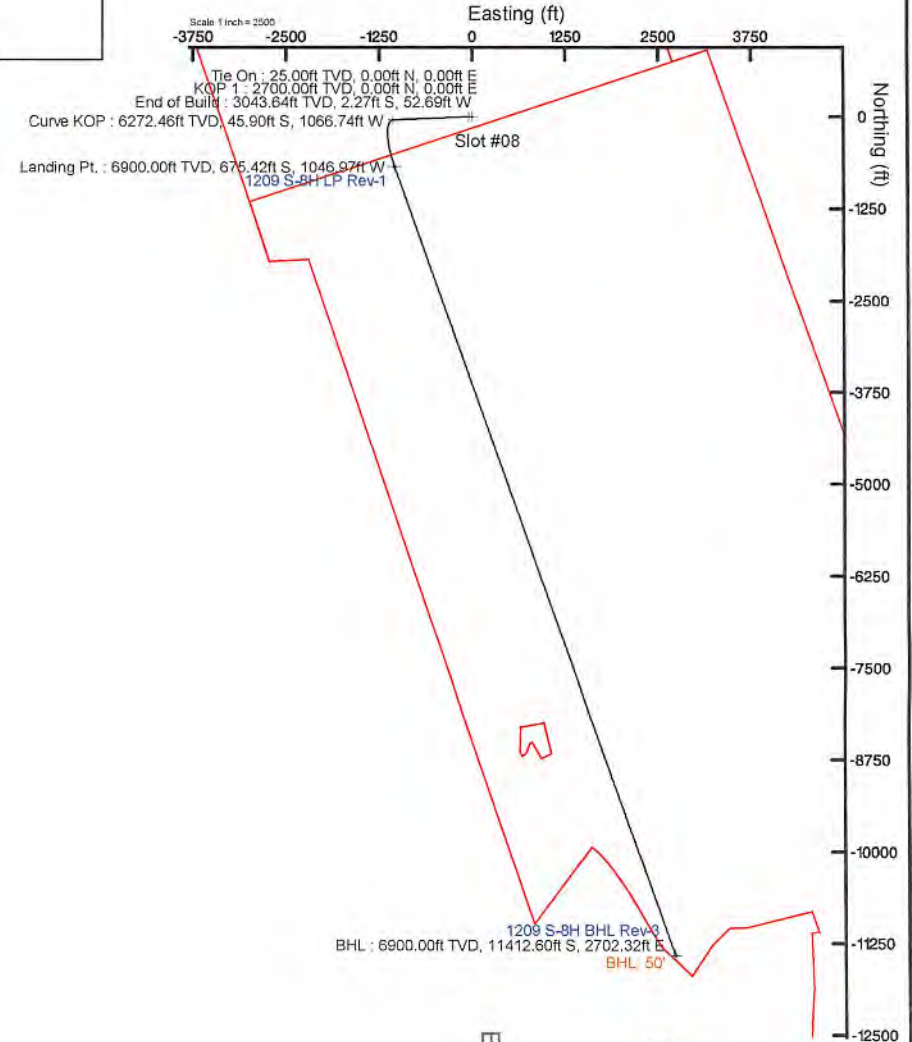
Survey Program					
Start MD (ft)	End MD (ft)	Tool	WELL	Log Name/Comment	Wellbore
31.57	204.00	3946000 gpm - northwing	BH (Swamp, gpm - northwing) (Swamp)		1209 S-8H PWB
200.00	1806.23	BH (Swamp) Curve	BH (Swamp) Curve (Spot)		1209 S-8H PWB

Targets							
Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude
1209 S-8H BHL Rev-3	18806.23	6900.00	-1142.60	2702.32	1731658.69	238061.00	39°08'53.007"N
1209 S-8H LP Rev-1	7433.27	6900.00	-675.42	-1048.97	1731658.69	238061.00	39°08'53.007"N

Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	25.00	0.00	267.536	25.00	0.00	0.00	0.00
KOP 1	2700.00	0.00	267.536	2700.00	0.00	0.00	0.00
End of Build	3043.61	17.45	267.536	3043.64	-2.27	-52.69	5.00
Curve KOP	6433.61	17.45	267.536	6272.46	-45.90	-1068.74	0.00
Landing Pt.	7433.27	90.00	160.751	6900.00	-675.42	-1048.97	9.50
BHL	18806.23	90.00	160.751	6900.00	-1142.60	2702.32	0.00



Hole and Casing Sections										
Name	Start MD (ft)	End MD (ft)	Start TVD (ft)	End TVD (ft)	Start Local N (ft)	End Local N (ft)	Start Local E (ft)	End Local E (ft)	Wellbore	
30in Open Hole	25.00	100.00	75.00	25.00	0.00	0.00	0.00	0.00	1209 S-8H PWB	
9in Conductor	100.00	110.70	75.00	25.00	0.00	0.00	0.00	0.00	1209 S-8H PWB	
2 1/2in Open Hole	110.70	400.00	130.00	500.00	0.00	0.00	0.00	0.00	1209 S-8H PWB	
30in Casing Surface	400.00	500.00	475.00	25.00	0.00	0.00	0.00	0.00	1209 S-8H PWB	
17 1/2in Open Hole	500.00	1435.00	1135.00	500.00	0.00	0.00	0.00	0.00	1209 S-8H PWB	
13.375in Casing Intermediate	1435.00	1635.00	1410.00	20.00	0.00	0.00	0.00	0.00	1209 S-8H PWB	
12.25in Open Hole	1635.00	2500.00	1610.00	2000.00	0.00	0.00	0.00	0.00	1209 S-8H PWB	
9.625in Casing Intermediate	2500.00	2700.00	2475.00	20.00	0.00	0.00	0.00	0.00	1209 S-8H PWB	
5.0in Open Hole	2700.00	3043.61	2700.00	3043.61	0.00	0.00	0.00	0.00	1209 S-8H PWB	
5.5in Casing Production	3043.61	18806.23	3043.61	18806.23	0.00	0.00	-1142.60	2702.32	1209 S-8H PWB	



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8:58M (1900.0 to 2020.0) Dip: 68.20° Field: 51667.2 nT
 Magnetic North is 8.78 degrees West of True North (at 10/8/2018)
 Grid North is 0.60 degrees West of True North
 To correct azimuth from True to Grid add 0.60 degrees
 To correct azimuth from Magnetic to Grid subtract 8.18 degrees

4703305944

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

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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Magnesium oxide	1 - 5	1309-48-4																			
Crystalline silica: Quartz (SiO2)	0.1 - 1	14808-60-7																			
Bentonite	Extender	Commonly called gel, it is a clay material used as a cement extender and to control excessive free water.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>bentonite</td> <td>90 - 100</td> <td>1302-78-9</td> </tr> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>5 - 10</td> <td>14808-60-7</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	bentonite	90 - 100	1302-78-9	Crystalline silica: Quartz (SiO2)	5 - 10	14808-60-7									
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Crystalline silica: Quartz (SiO2)	5 - 10	14808-60-7																			
Calcium Chloride	Accelerator	A powdered, flaked or pelletized material used to decrease thickening time and increase the rate of strength development	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Calcium chloride</td> <td>90 - 100</td> <td>10043-52-4</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Calcium chloride	90 - 100	10043-52-4												
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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			<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Calcium magnesium oxide</td> <td>90 - 100</td> <td>37247-91-9</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Calcium magnesium oxide	90 - 100	37247-91-9												
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MPA-170	Gas Migration	Multi-purpose polymer additive used to control free fluid, fluid loss, rheology, and gas migration.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>No hazardous ingredient</td> <td></td> <td></td> </tr> </tbody> </table>	Ingredient name	%	CAS number	No hazardous ingredient														
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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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List of Frac Additives by Chemical Name and CAS #**Nays 1209 Well Pad (N-1H to N-6H, S-7H to S-12H)**

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

WW-9
(4/16)

API Number 47 - _____ - _____
Operator's Well No. Nays 1209 S-8H

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 _____)

*SOW
1/28/2019*

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

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

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

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

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

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

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

WV Department of
Environmental Protection

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

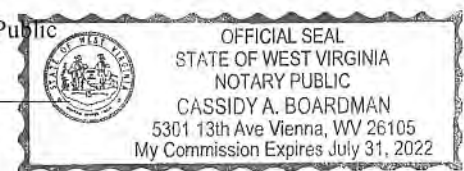
Company Official (Typed Name) Diane White

Company Official Title Agent

Subscribed and sworn before me this 23rd day of January, 20 19

Cassidy A. Boardman Notary Public

My commission expires 7/31/2022



HG Energy II Appalachia, LLC

Proposed Revegetation Treatment: Acres Disturbed 16.148 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch Hay 2 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5

Maintain E&S controls through the drilling and completion process

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: S. D. Warrick

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

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

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Environmental Protection

Title: Harrison County DEP Oil & Gas Inspector

Date: 1/28/2019

Field Reviewed? () Yes () No

Cuttings Disposal/Site Water

Cuttings -Haul off Company:

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

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

Environmental Coordination Services & Recycling (ECS&R)
8287 US Highway 19
Cochranston, PA 16314
814-425-7773

Disposal Locations:

Apex Environmental, LLC Permit # 06-08488
11 County Road 78
Amsterdam, OH 43908
740-548-4889

Westmoreland Waste, LLC Permit # 100277
111 Conner Lane
Belle Vernon, PA 15012
724-828-7684

Sycamore Landfill Inc, Permit #R80-079001 05-2010
4301 Sycamore Ridge Road
Hurricane, WV 25526
304-562-2511

Max Environmental Technologies, Inc. Facility Permit # PAD004895146 / 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 # 100553
1801 Park Side Drive
Elizabeth, PA 15037
412-384-7569

Waste Management South Hills (Arnoni) Permit # 100582
3100 Hill Road
Liberty, PA 15129
724-348-7013
412-384-7569

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

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

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

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Wetzel County Landfill Permit # SWP-1021-97 / WV 0109186
Rt 1, Box 158A
New Martinsville, WV 26035
304-455-3800

03/29/2019

Energy Solutions, LLC Permit # UT 2300249
428 West 800 South
Suite 200
Salt Lake City, UT 84101

Energy Solutions Services, Inc. Permit # R-79006-L24
1560 Bear Creek Road
Oak Ridge, TN 37830

Northern A-1 Environmental Services Permit ID MIP020908814
8947 US 131 North, PO Box 1030
Kalkaska, MI 49646
231-258-9961

Water Haul off Companies:

Dynamic Structures, Clear Creek DOT # 720488
3780 State Route 7
New Waterford, OH 44445
330-892-0184

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

Select Energy Services, LLC
PO Box 208997
Dallas, TX 75320-8997

Nuverra Environmental Solutions
11942 Veterans Memorial Highway
Masontown, WV 26542

Mustang Oilfield Services LLC
PO Box 789
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 44486
330-586-6825

Adams #1 (Buckeye Brine, LLC)
Permit # 34-031-2-7177
22986 Airport Road
Coshocton, OH 43812
740-575-4484
512-478-6545

CMS of Delaware Inc. DBA ~~CMS of Delaware~~ ^{WV Department of} Environmental Protection
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

Burna Drilling & Excavating
618 Crabapple Road P.O. Box
Wind Ridge, PA 15880

Nichols 1-A (SWIW #18)
Permit # 3862
300 Cherrington Pkwy, Suite 200
Coraopolis, PA 15108
412-829-7275

Grosella (SWIW #34)
Permit # 4096
Rt. 88
Garrettsville, OH
718-275-4816

Kernble 1-D Well
Permit # 8780
7575 East Pike
Norwich, Oh 43767
614-648-8898
740-786-6485

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Adams #2 (Buckeye Brine, LLC)
2205 Westover Road
Austin Tx 78703
Permit # 34-031-2-7178
740-575-4454
512-478-6545

Adams #3 (Buckeye Brine, LLC)
Permit #34-031-2-7241-00-00
2580 Exposition, Suite 117
Austin, TX 78703
512-478-6545

Mozana #1 Well (SWIW # 13)
Permit # 34-157-2-5511-00-00
5357 E. State Street
Newcomerstown, OH 43882
740-763-3966

Goff SWD #1 (SWIW # 27)
Permit # 34-119-2-8776-000
300 Cherrington Pkwy, Suite 200
Coraopolis, PA 15108
412-828-7275

SCS D#1 (SWIW #12)
Permit # 34-059-2-4202-00-00
Silcor Oilfield Services, Inc.
2999 Hubbard Road
Youngstown, OH 44505

Dudley #1 UIC (SWIW #1)
Permit # 34-121-2-2458-00-00
Select Energy Services, LLC
7994 S. Pleasants Hwy
St. Marys, WV 26170
304-665-2652

OH UIC #1 Buckeye UIC Barneville 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

Chapln #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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4703903941 03/29/2019

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Site Safety Plan

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

May 2018: Version 2

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

HG Energy II Appalachia, LLC

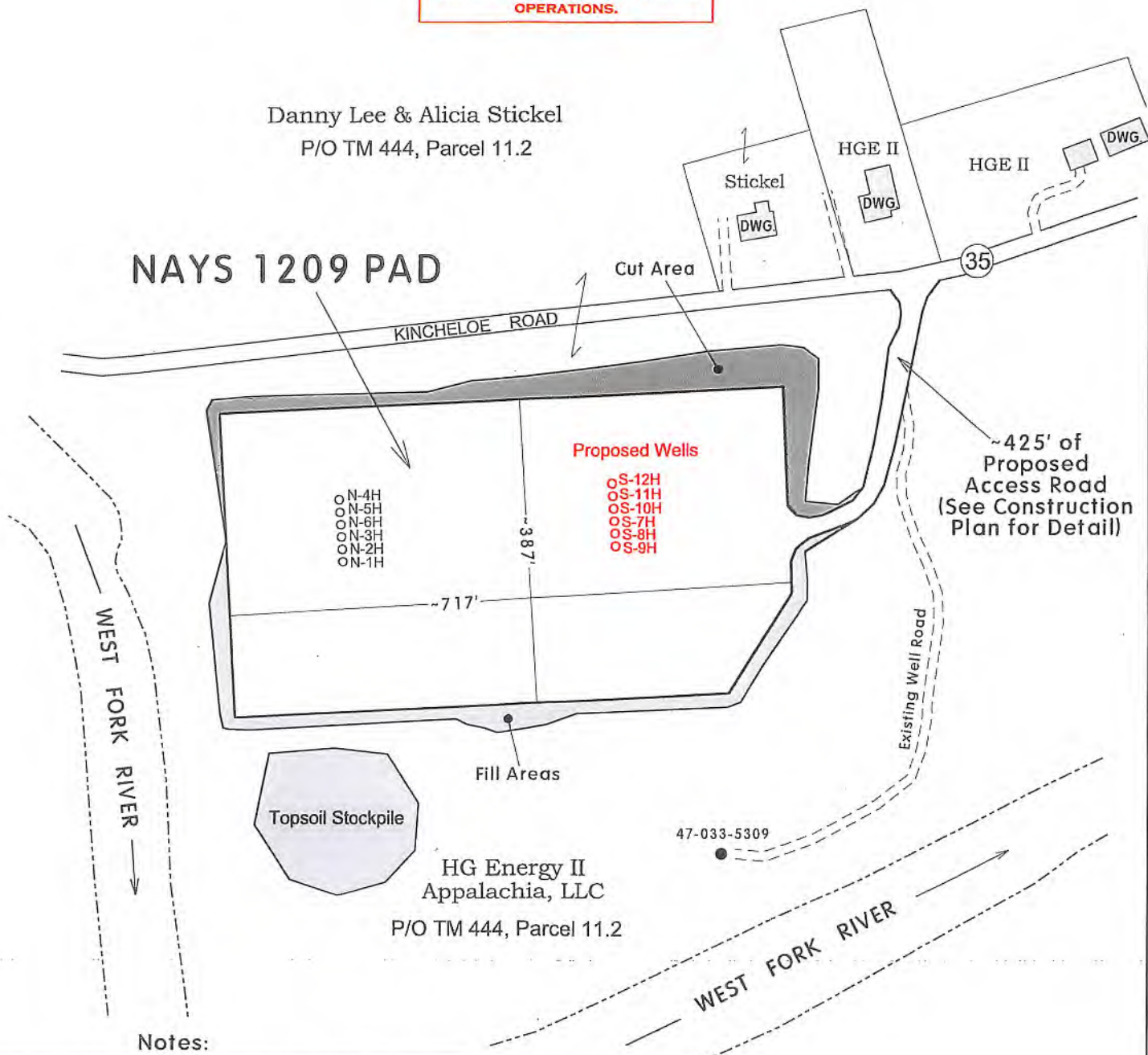
5260 Dupont Road

Parkersburg, WV 26101

*S. Dew
1/28/2019*

Reclamation Plan For:
NAYS 1209 PAD

NOTE
 REFER TO THE WVDEP
 EROSION AND SEDIMENT CONTROL
 FIELD MANUAL VER. MAY 2012 FOR
 BMPs CONTROLLING EROSION AND
 SEDIMENT FROM SOIL-DISTURBING
 OPERATIONS.

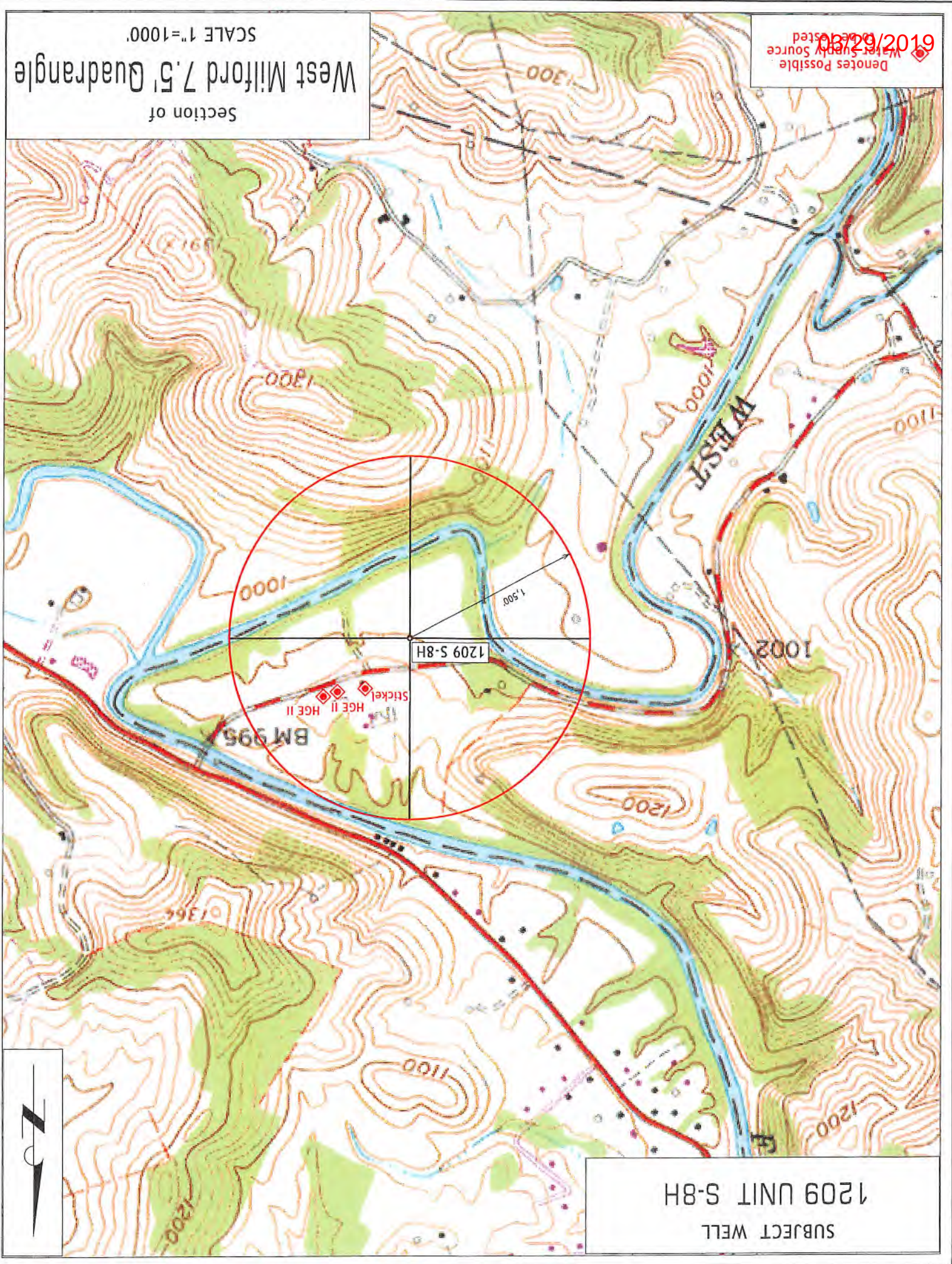


Notes:

- REQUESTED PERMIT IS FOR DRILLING NEW HORIZONTAL WELL.
- LOCATION AND ACCESS ROADS WILL BE CONSTRUCTED AS SHOWN ON THE ENGINEERED DRAWINGS WHICH ACCOMPANY THIS PERMIT APPLICATION. REFERENCE IS HEREBY MADE TO THOSE PLANS FOR MORE DETAIL ON E&S MEASURES TO BE TAKEN TO ENSURE COMPLIANCE WITH WVDEP RECLAMATION STANDARDS.
- ALL DISTURBED AREAS WILL BE RE-VEGETATED AS OUTLINED ON FORM WW-9.
- MAINTAIN SEDIMENT BARRIERS AND DRAINAGE STRUCTURES.
- NO DRILL PIT WILL BE CONSTRUCTED AND A CLOSED LOOP SYSTEM WILL BE UTILIZED TO HANDLE DRILL CUTTINGS.
- DRAWING NOT TO SCALE.

Denotes Possible
Water Supply Source
as of 6/29/2019

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



SUBJECT WELL
1209 UNIT S-8H



HG ENERGY

Location: Harrison County, WV Slot: Slot #07
 Field: Hamson (NAD27 SP Northern Zone 4701) Well: 1209 S-7H
 Facility: 1209 Pad Wellbore: 1209 S-7H PWB

Pad reference wellbore to 1201 S-7H PWB Ex-01	Grid System: NAD27 (Least West Virginia SP, Northern Zone 4701), UTM feet
True vertical depth (measured to Patterson 347 RWB)	North Reference Grid zone
Measured depth in reference to Patterson 347 RWB	Public User Notice
Patterson 347 RWB Mean Sea Level: 1031 feet	Depth unit: feet
Mean Sea Level to Mean Sea Level (MSL) offset: +1031 feet	Created by: pdelost on 2/18/2019
Coordinates are in feet referenced to GCS	Checked by: WJ, MFL, Evgentsev, DTH

Location Information

Facility Name	Grid East (US B)	Grid North (US B)	Latitude	Longitude		
1209 Pad	1732974.000	237345.950	39°08'52.102"N	80°26'37.112"W		
Slot Name	Local N (ft)	Local E (ft)	Grid East (US B)	Grid North (US B)	Latitude	Longitude
Slot #07	-44.25	328.50	1732929.750	237390.200	39°08'52.573"N	80°26'33.947"W
Slot #01	0.00	0.00	1732974.000	237345.950	39°08'52.102"N	80°26'37.112"W
Slot #02	15.02	-9.45	1732979.550	237340.500	39°08'52.250"N	80°26'37.419"W
Slot #03	28.93	-1.11	1732975.890	237379.880	39°08'52.387"N	80°26'37.130"W
Slot #04	74.79	-3.15	1732970.840	237424.740	39°08'52.847"N	80°26'37.182"W
Slot #05	58.77	-2.51	1732971.490	237409.720	39°08'52.682"N	80°26'37.152"W
Slot #06	44.85	-1.78	1732972.540	237394.900	39°08'52.645"N	80°26'37.140"W
Slot #08	28.33	328.35	1732974.340	237379.520	39°08'52.426"N	80°26'32.833"W
Slot #09	14.00	328.70	1732973.690	237383.070	39°08'52.574"N	80°26'32.823"W
Slot #10	38.27	327.95	1732970.940	237409.220	39°08'52.721"N	80°26'32.857"W
Slot #11	74.19	327.20	1732971.190	237424.140	39°08'52.869"N	80°26'32.869"W
Slot #12	88.11	326.55	1732970.540	237439.060	39°08'53.016"N	80°26'32.919"W

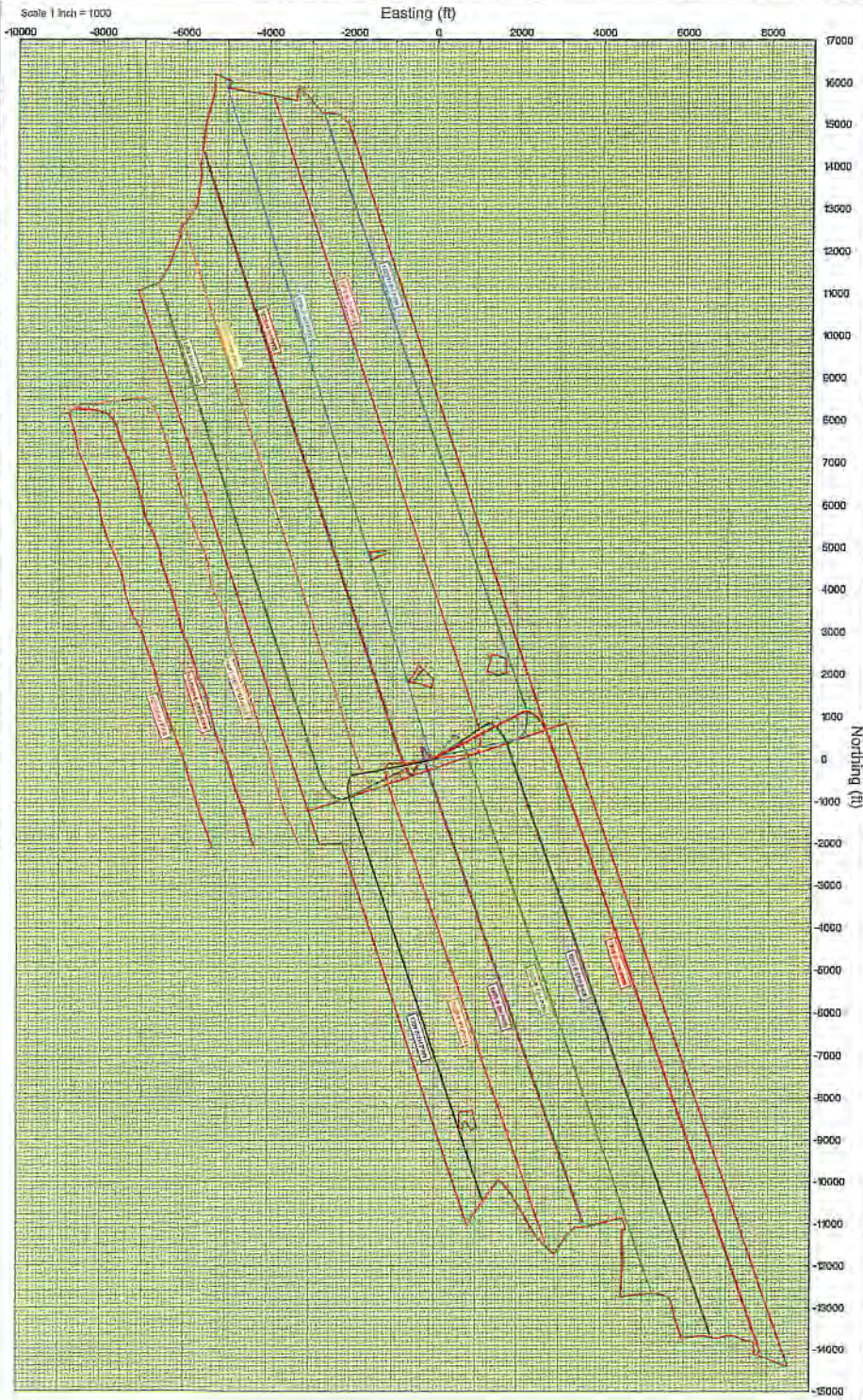
Patterson 347 (RWB) to Mud line (Facility - 1209 Pad) 25R
 Mean Sea Level to Mud line (Facility - 1209 Pad) -1007ft

Facility Name	Grid East (US B)	Grid North (US B)	Latitude	Longitude		
KST9 Pad	1724065.000	245700.600	39°10'13.760"N	80°26'23.720"W		
Slot Name	Local N (ft)	Local E (ft)	Grid East (US B)	Grid North (US B)	Latitude	Longitude
Slot #01	73.60	25.60	1724090.600	245776.200	39°10'14.512"N	80°26'23.405"W
Comment	KST9AHS					
Slot #04	19.00	6.40	1724071.600	245719.600	39°10'13.849"N	80°26'23.841"W
Comment	KST9EHS					
Slot #05	90.90	19.20	1724084.400	245757.200	39°10'14.325"N	80°26'23.484"W
Comment	KST9SHS					

Patterson 347 (RWB) to Mud line (Facility - KST9 Pad) 25R
 Mean Sea Level to Mud line (Facility - KST9 Pad) -1134ft
 Patterson 347 (RWB) to Mean Sea Level 1032ft

Well Data

Slot	Well	Wellbore	Wellbore
Slot #01	1209 N-1H	1209 N-1H PWB	1209 N-1H PWB Ex-01
Slot #01	KST9AHS ST01	KST9AHS ST01 AWB	KST9AHS ST01 AWB Prod: 10211'
Slot #02	1209 N-2H	1209 N-2H PWB	1209 N-2H PWB Ex-01
Slot #03	1209 N-3H	1209 N-3H PWB	1209 N-3H PWB Ex-01
Slot #04	1209 N-4H	1209 N-4H PWB	1209 N-4H PWB Ex-03
Slot #04	KST9DHS	KST9DHS ST01 AWB	KST9DHS ST01 AWB Prod: 18206'
Slot #05	1209 N-5H	1209 N-5H PWB	1209 N-5H PWB Ex-01
Slot #05	KST9EHS	KST9EHS AWB	KST9EHS AWB Prod: 17540'
Slot #08	1209 N-8H	1209 N-8H PWB	1209 N-8H PWB Ex-01
Slot #07	1209 S-7H	1209 S-7H PWB	1209 S-7H PWB Ex-01
Slot #08	1209 S-8H	1209 S-8H PWB	1209 S-8H PWB Ex-01
Slot #09	1209 S-9H	1209 S-9H PWB	1209 S-9H PWB Ex-01
Slot #10	1209 S-10H	1209 S-10H PWB	1209 S-10H PWB Ex-01
Slot #11	1209 S-11H	1209 S-11H PWB	1209 S-11H PWB Ex-02
Slot #12	1209 S-12H	1209 S-12H PWB	1209 S-12H PWB Ex-02



North arrow is oriented to true north. Scale bar is in feet. All dimensions are in feet unless otherwise noted. The information on this drawing is the property of Baker Hughes Services Company. It is intended for use only in connection with the project for which it was prepared. It is not to be used for any other purpose without the written consent of Baker Hughes Services Company.

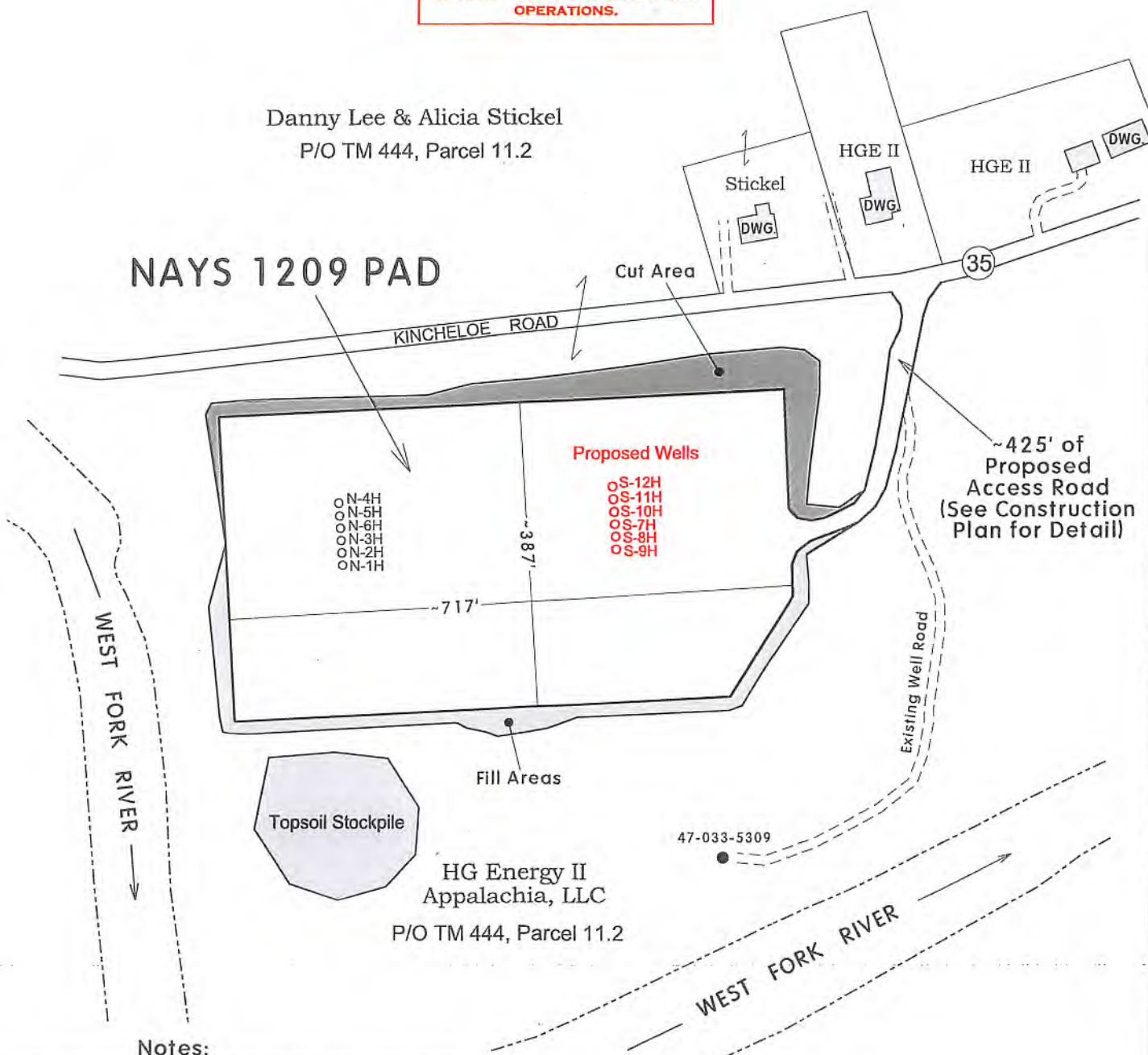
Reclamation Plan For:
NAYS 1209 PAD

NOTE
 REFER TO THE WVDEP
 EROSION AND SEDIMENT CONTROL
 FIELD MANUAL VER. MAY 2012 FOR
 BMPs CONTROLLING EROSION AND
 SEDIMENT FROM SOIL-DISTURBING
 OPERATIONS.



Danny Lee & Alicia Stickel
 P/O TM 444, Parcel 11.2

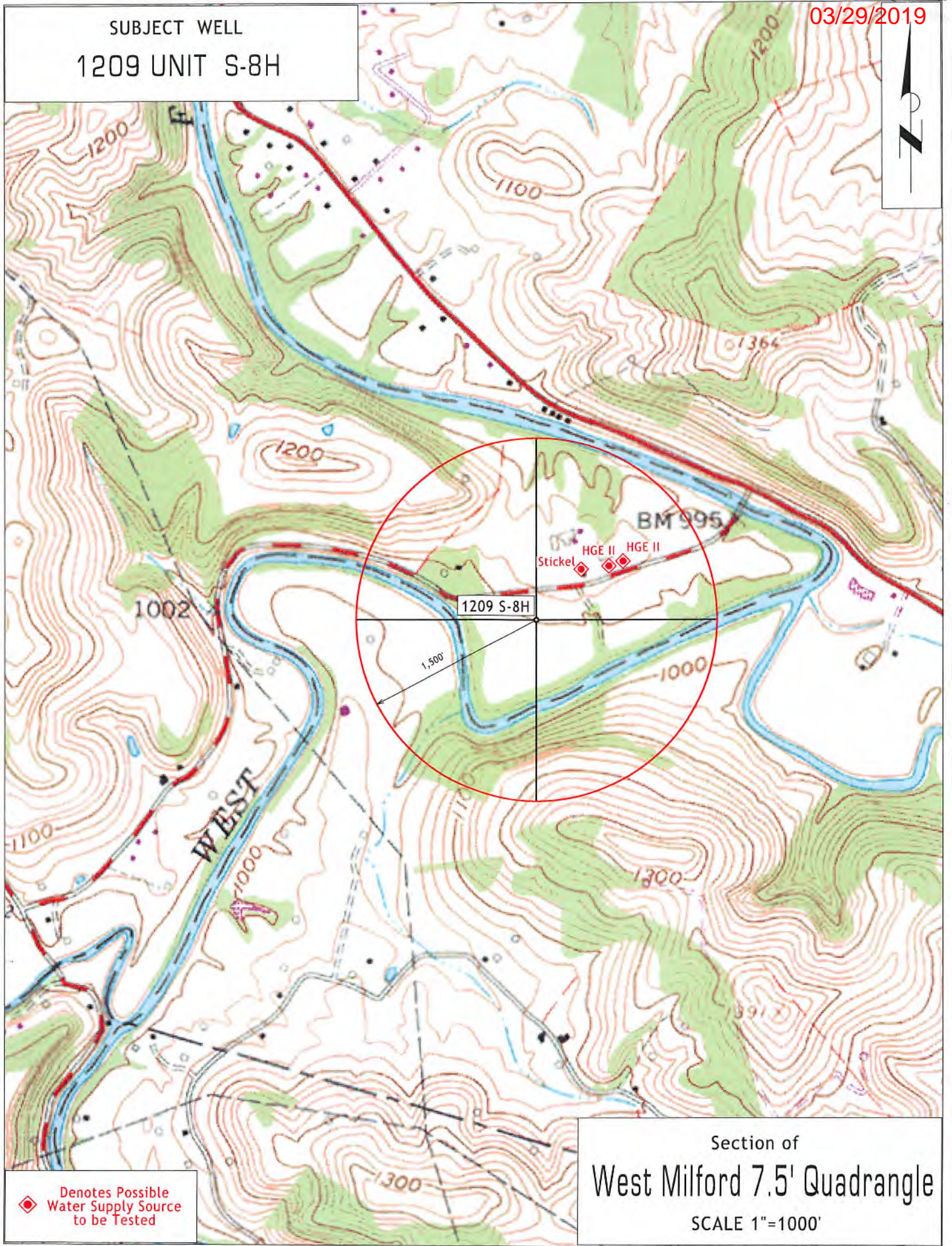
NAYS 1209 PAD



Notes:

- REQUESTED PERMIT IS FOR DRILLING NEW HORIZONTAL WELL.
- LOCATION AND ACCESS ROADS WILL BE CONSTRUCTED AS SHOWN ON THE ENGINEERED DRAWINGS WHICH ACCOMPANY THIS PERMIT APPLICATION. REFERENCE IS HEREBY MADE TO THOSE PLANS FOR MORE DETAIL ON E&S MEASURES TO BE TAKEN TO ENSURE COMPLIANCE WITH WVDEP RECLAMATION STANDARDS.
- ALL DISTURBED AREAS WILL BE RE-VEGETATED AS OUTLINED ON FORM WW-9.
- MAINTAIN SEDIMENT BARRIERS AND DRAINAGE STRUCTURES.
- NO DRILL PIT WILL BE CONSTRUCTED AND A CLOSED LOOP SYSTEM WILL BE UTILIZED TO HANDLE DRILL CUTTINGS.
- DRAWING NOT TO SCALE.

SUBJECT WELL
1209 UNIT S-8H



◆ Denotes Possible
Water Supply Source
to be Tested

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

BHL is located on topo map 3,011 feet south of Latitude: 39° 07' 30"
 SHL is located on topo map 6,803 feet south of Latitude: 39° 10' 00"

BHL is located on topo map 4,450 feet west of Longitude: 80° 25' 00"
 SHL is located on topo map 7,269 feet west of Longitude: 80° 25' 00"

SEE PAGE 2 FOR PLAT DUE TO LENGTH OF LATERAL

SEE PAGE 3 FOR SURFACE OWNERS & LESSORS



03/29/2019

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83
 N:4333347.25
 E:548191.97
 UTM 17-NAD83(FT)
 N:14216990.10
 E:1798526.50
 LAT/LON DATUM-NAD83
 LAT:39.147988
 LON:-80.442296



APPROX. LANDING POINT
UTM 17-NAD83
 N:4333136.18
 E:547876.44
 UTM 17-NAD83(FT)
 N:14216297.60
 E:1797491.30
 LAT/LON DATUM-NAD83
 LAT:39.146103
 LON:-80.445962

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83
 N:4329884.18
 E:549073.10
 UTM 17-NAD83(FT)
 N:14205628.36
 E:1801417.32
 LAT/LON DATUM-NAD83
 LAT:39.116734
 LON:-80.432350

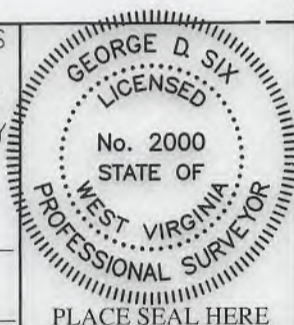


FILE #: 1209 S-8H
 DRAWING #: 1209 S-8H
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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



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



DATE: JANUARY 25, 2019
 OPERATOR'S WELL #: 1209 S-8H
 API WELL #: 47 33 05944
 STATE COUNTY PERMIT

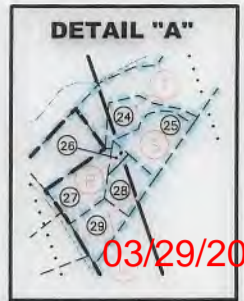
Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

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: 474.816±

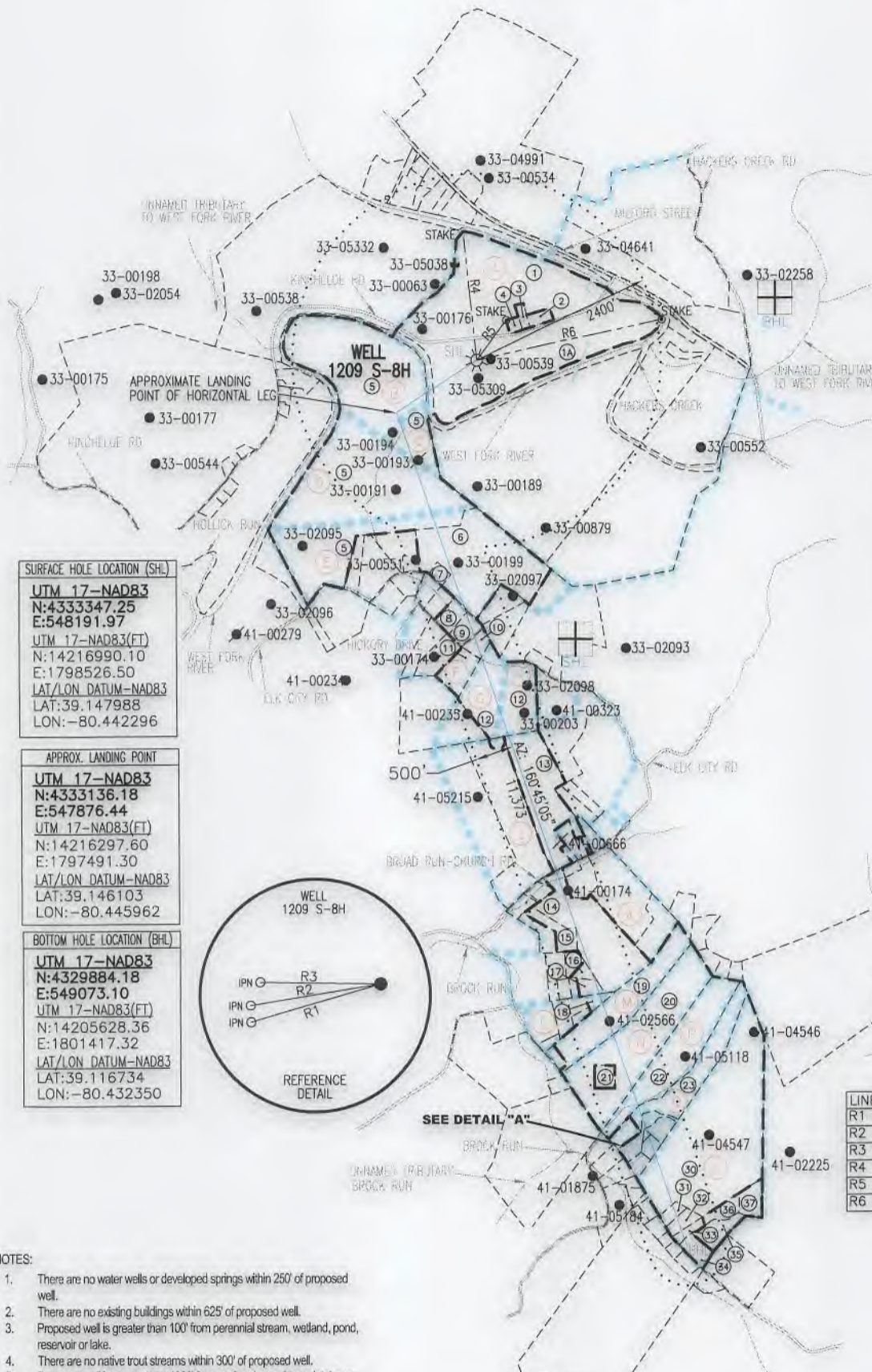
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,900'± TMD: 18,806'±
 WELL OPERATOR HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT DIANE C. WHITE
 Address 5260 DUPONT ROAD Address 5260 DUPONT ROAD
 City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

1209 S-8H PAGE 2 OF 3



03/29/2019

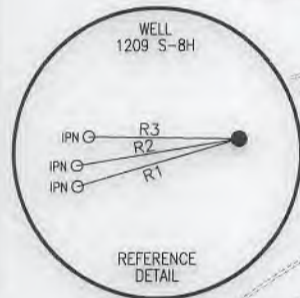


LEGEND	
	- TOPO MAP POINT
	- WELL
	- ALL ARE POINTS UNLESS OTHERWISE NOTED.
	- MINERAL TRACT BOUNDARY
	- LESSORS
	- SURFACE OWNERS
	- PARCEL LINES
	- LEASE BOUNDARY
	- WELL REFERENCE
	- PROPOSED HORIZONTAL WELL
	- ROAD
	- STREAM CENTER LINE
	- DETAIL
WELLS WITHIN 2400'	
	- EXISTING WELLS
	- PLUGGED WELLS
	- ABANDONED WELLS

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 UTM 17-NAD83
 N:4333347.25
 E:548191.97
 UTM 17-NAD83(FT)
 N:14216990.10
 E:1798526.50
 LAT/LON DATUM-NAD83
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 N:4329884.18
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 UTM 17-NAD83(FT)
 N:14205628.36
 E:1801417.32
 LAT/LON DATUM-NAD83
 LAT:39.116734
 LON:-80.432350



LINE	BEARING	DISTANCE
R1	S 73°49'51" W	246.45'
R2	S 80°48'24" W	240.46'
R3	N 89°02'18" W	219.83'
R4	N 06°13'24" W	1662.99'
R5	N 37°15'31" E	642.54'
R6	N 77°44'26" E	2466.51'

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

API WELL #: 47 33 059644
 STATE COUNTY PERMIT



JANUARY 25, 2019

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

George D. Six

1209 S-8H

PAGE 3 OF 3

03/29/2019

	SURFACE OWNER	DIST-TM/PAR
1	DANNY LEE & ALICIA A. STICKEL	P/O 20-444/11.2
1A	HG ENERGY II APPALACHIA, LLC	P/O 20-444/11.2
2	HG ENERGY II APPALACHIA, LLC	20-444/11.3
3	AARON C. & CHRISTINA P. MEDINA	20-444/11
4	HG ENERGY II APPALACHIA, LLC	20-444/11.1
5	ROCK GARTON	12-444/26
6	ROBERT D. & GEORGANNA STARKEY	12-444/29
7	*MARK A. & KIMBERLY S. LINGER	12-444/29.1
8	STEVEN L. & JOYCE M. CLIFTON	12-444/37.7
9	GARY & MARCIA ROGERS	12-444/37.6
10	WILLIAM J. HOGAN JR.	12-444/37.5
11	*DONALD EARL HONAKER	12-444/37.4
12	ROBERT SCOTT STARKEY	4-7B/60
13	JOHN AUBREY LAMB	4-7B/5.3
14	STEPHEN E. & DONNA D. SMITH	4-7B/29.3
15	*BROAD RUN CEMETERY	4-7B/26
16	CHARLES E. BYRNE	4-7C/86
17	ALLEN C. & LILLY M. JACKSON	4-7C/73
18	FRANK L. & MARY ELLEN BRAGG	4-7C/68
19	ROBERT G. & ALISA G. GUM	4-7C/30.2
20	ROBERT G. & ALISA G. GUM	4-7C/31
21	ROBERT G. & ALISA G. GUM	4-7C/31.1
22	KEVIN B. & SHERI K. JERDEN	4-8C/1.1
23	KEVIN B. & SHERI K. JERDEN	4-8C/1.4
24	M. STEVEN & TRICIA A. JERDEN	4-8C/1.8
25	GREGORY C. & DEBRA L. ALDERSON	4-8C/1.6
26	JOHN L. BREEN	4-8C/1.3
27	JOHN L. BREEN	4-8C/1.5
28	ROGER G. RUSSELL	4-8C/1.7
29	ROGER G. RUSSELL	4-8C/1.2
30	WILLIAM H. TURNER	4-8C/2
31	WILLIAM R. & ESTYLEEN KINNEY (LIFE)	4-8C/2.2
32	WILLIAM H. TURNER	4-8C/2.1
33	WILLIAM H. TURNER	4-8C/6.4
34	JANICE L. OLDAKER	4-8C/6.2
35	LESTER B. & WINFRED M. BLEVINS	4-8C/6.3
36	LESTER B. & WINFRED M. BLEVINS	4-8C/6.1
37	HENRY A. & PATRICIA E. STRADER	4-8C/6

* - DENOTES PARCEL WITHIN 30 FEET OF PLANNED WELL BORE

	LESSOR	LEASE NO.	DIST-TM/PAR
A	J. B. GUSMAN ET AL	FK020606	20-444/11.2
B	J. A. HARDWAY ET AL	FK004424	12-444/26
C	J. Q. MUSSER	FK061781	
D	W. W. BRANNON ET UX	FK032708	
E	J. K. MUSSER ET UX	FK002243	12-444/26 12-444/29 12-444/29.1
F	KENNETH R. SIMONS ET AL O.B. FRASHUER ET UX	FK064201 FK064208	12-444/37.7 12-444/37.6 12-444/37.5 12-444/37.4
G	J. Q. MUSSER ET UX	FK002249	4-7B/60
H	GENE GLADDEN ET UX (FEE) J. C. CASTO ET AL	FK094174 FK064200	
J	S. G. HALL ET UX	FK014031	4-7B/5.3
K	ALDA V. HITT	FK077958	4-7B/29.3 4-7B/26 4-7C/86 4-7C/73
L	C. A. BAILY	CNX26831600	4-7C/68
M	J. H. BAILEY ET AL	Q102176000	4-7C/30.2
N	ALISA G. GUM LORI LEE CALDWELL GERALD W. RAMSBURG KARRIE DIANE SIMS DENISE C. CARSON KAREN K. HOBBS KATRINA L. WEST DAVID C. GARVIN	Q102118000 Q102123000 Q098757000 Q102112000 Q102117000 Q102122000 Q102121000 Q102119000	4-7C/31
P	KEVIN B. JERDEN ET UX	Q102115000	4-8C/1.1
Q	KEVIN B. JERDEN ET UX	Q097844000	4-8C/1.4
R	JOHN L. BREEN	HGII051	4-8C/1.5 4-8C/1.3
S	GREGORY ALDERSON ET UX	HGII100	4-8C/1.6
T	STEVEN M. JERDEN ET UX	HGII073	4-8C/1.8
U	MELISSA SIGLEY	HGII050	4-8C/1.2 4-8C/1.7
V	HUGH RAMSBURG	FK068456	4-8C/2 4-8C/2.2 4-8C/2.1 4-8C/6.4 4-8C/6.2 4-8C/6 4-8C/6.1 4-8C/6.3

SURFACE HOLE LOCATION (SHL)
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E:548191.97
 UTM 17-NAD83(FT)
 N:14216990.10
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 UTM 17-NAD83(FT)
 N:14205628.36
 E:1801417.32
 LAT/LON DATUM-NAD83
 LAT:39.116734
 LON:-80.432350

JANUARY 25, 2019



API WELL #: 47 33 05944
 STATE COUNTY PERMIT

WW-6A1
(5/13)

Operator's Well No. Nays 1209 S-8H

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"

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

4703805044

HG Energy II Appalachia, LLC 1209S-8H LEASE CHAIN												
TRACT #	LEGACY LEASE NUMBER	TAX MAP	LEASE NUMBER	GRANTOR/LESSOR	GRANTEE/LESSEE	ROYALTY	DEED BOOK	PAGE				
A	FK020606	17-20-0444-0011-0000, 17-20-0444-0011-0001, 17-20-0444-0011-0002, 17-20-0444-0011-0003, 17-20-0444-0012-0000, 17-12-0444-0013-0000, 17-12-0444-0014-0000, 17-12-0444-0021-0000, 17-12-0444-0021-0001, 17-12-0444-0022-0000, 17-12-0445-0001-0000, 17-12-0445-0002-0000, 17-12-0445-0009-0000, 17-12-0445-0010-0000, 17-12-0445-0011-0000	Q100370000	J.B. GUSMAN AND ADALINE GUSMAN	TREAT AND CRAWFORD	NOT LESS THAN 1/8	158	8				
				TREAT AND CRAWFORD	UNITED FUEL GAS COMPANY	ASSIGNMENT	226	359				
				UNITED FUEL GAS COMPANY	FAYETTE COUNTY GAS COMPANY	ASSIGNMENT	UNRECORDED					
				FAYETTE COUNTY GAS COMPANY	HOPE NATURAL GAS	ASSIGNMENT	201	3				
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY COMPANY	MERGER/NAME CHANGE	903	179				
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250				
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795				
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362				
				DOMINION TRANSMISSION, INC.	DOMINION EXPLORATION & PRODUCTION, INC.	ASSIGNMENT	1409	680				
				DOMINION TRANSMISSION, INC.	DOMINION EXPLORATION & PRODUCTION, INC.	ASSIGNMENT	1442	356				
				DOMINION EXPLORATION & PRODUCTION, INC.	DOMINION TRANSMISSION, INC.	ASSIGNMENT	1457	978				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM FARMOUT AGREEMENT	1522	33				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942				
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	692				
				DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS					
				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581				
				B	FK004424	17-20-0444-0005-0000 17-20-0444-0026-0000	Q100366000	J.A. HARDWAY AND JANE HARDWAY, HIS WIFE	SOUTH PENN OIL COMPANY	NOT LESS THAN 1/8	113	440
								SOUTH PENN OIL COMPANY	HOPE NATURAL GAS COMPANY	ASSIGNMENT	240	210
HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903					179				
CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136					250				
CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51					795				
CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58					362				
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM FARMOUT AGREEMENT	1522					33				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543					1235				
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576					125				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584					942				
NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600					660				
NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600					692				
DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS									
DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581								
C	FK061781	p/o 12-444-0026-0000	Q100499000	J.C. MUSSER ETAL	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	696	246				
				J.C. MUSSER ETAL	HOPE NATURAL GAS COMPANY	MODIFICATION	721	525				
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903	179				
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250				
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795				
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM OF FARMOUT AGREEMENT	1522	33				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	FIRST AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1524	491				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235				

				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	660
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	692
				DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS	
				DOMINION TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF	1601	581
				W.W. BRANNON AND ADDIE BRANNON	THE PHILADELPHIA COMPANY	NOT LESS THAN 1/8	185	107
				THE PHILADELPHIA COMPANY	PITTSBURGH AND WEST VIRGINIA GAS COMPANY	DEED	236	111
				PITTSBURGH AND WEST VIRGINIA GAS COMPANY	HOPE NATURAL GAS COMPANY	AGREEMENT	267	55
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903	179
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM FARMOUT AGREEMENT	1522	33
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	FIRST AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1524	491
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	600
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	692
				DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS	
				DOMINION TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581
				J.K. MUSSER AND LAURA R. MUSSER, HIS WIFE	F.E. WILLIAMSON AND COMPANY	NOT LESS THAN 1/8	111	519
				F.E. WILLIAMSON AND COMPANY	THE CARTER OIL COMPANY	ASSIGNMENT	118	428
				THE CARTER OIL COMPANY	SOUTH PENN OIL COMPANY	ASSIGNMENT	128	262
				SOUTH PENN OIL COMPANY	HOPE NATURAL GAS COMPANY	ASSIGNMENT	240	210
				THE CARTER OIL COMPANY	HOPE NATURAL GAS COMPANY	ASSIGNMENT	203	73
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903	179
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM OF FARMOUT AGREEMENT	1522	33
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	FIRST AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1524	491
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	660
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	692
				DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS	
				DOMINION TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581
				J.C. MUSSER ETAL	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	696	246
				J.C. MUSSER ETAL	HOPE NATURAL GAS COMPANY	MODIFICATION	721	525
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903	179
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM OF FARMOUT AGREEMENT	1522	33
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	FIRST AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1524	491
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125

		0008, 12-444-0037- 0009		CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	660
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	692
				DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS	
				DOMINION TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581
				J.Q.MUSSER AND ROSA MUSSER	HOPE NATURAL GAS	NOT LESS THAN 1/8	111	522
				HOPE NATURAL GAS	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903	179
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY, LLC	MEMORANDUM FARMOUT AGREEMENT	1522	33
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY, LLC	FIRST AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1524	491
							(HARRISON)1543 (LEWIS) 684	1235 57
				CNX GAS COMPANY, LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)		
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY, LLC AND NOBLE ENERGY, NC.	PARTIAL ASSIGNMENT (32%)	(HARRISON)1576 (LEWIS) 712	125 848
							(HARRISON)1584 (LEWIS) 717	942 1
				CNX GAS COMPANY, LLC	NOBLE ENERGY, INC.	ASSIGNMENT		
							(HARRISON)1600 (LEWIS) 722	660 139
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	692
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT		
				DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS	
							(HARRISON)1601 (LEWIS) 723	581 499
				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT		
							(LEWIS) 723	527
				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	AMENDED AND RESTATED PARTIAL ASSIGNMENT		
				J.C. CASTO AND GEORGIA CASTO, HIS WIFE; WALTER B. CASTO AND EDITH CASTO, HIS WIFE, ANDREW M. CASTO AND JOSEPHINE CASTO, HIS WIFE	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	723	389
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903	179
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM FARMOUT AGREEMENT	1522	33
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	660
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	692
				DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS	

p/o 17-12-0444-0029-0000,
p/o 17-12-0444-0030-0000,
p/o 17-12-0444-0003-0001,
p/o 21-04-007B-0005-0004,
p/o 21-04-007B-0060-0000

Q100652000

21-04-007B-0060-0000

Q100974000

J	FK014031	21-04-007B-0005-0000; 21-04-007B-0005-0001; 21-04-007B-0005-0002; 21-04-007B-0005-0003; 21-04-007B-0005-0004; 21-04-007B-0005-0005; 21-04-007B-0005-0006; 21-04-007B-0005-0007; 21-04-007B-0031-0000; p/o 21-04-007B-0035-0000; p/o 21-04-007B-0035-0004; p/o 21-04-007B-35-0005	Q100258000	DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581				
				S.G. HALL AND EMMA HALL, HIS WIFE	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	68	130				
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	294	89				
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	425	127				
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	WVSOS					
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS					
				DOMINION TRANSMISSION INC.	CNX GAS COMPANY LLC	MEMORANDUM OF FARMOUT AGREEMENT	672	154				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	684	57				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	712	848				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	717	1				
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722	170				
				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	723	499				
				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	AMENDED AND RESTATED PARTIAL ASSIGNMENT	723	527				
				SOUTH PENN OIL COMPANY	SOUTH PENN NATURAL GAS COMPANY	ASSIGNMENT (OIL)	156	570				
				SOUTH PENN NATURAL GAS COMPANY	SOUTH PENN OIL COMPANY	ASSIGNMENT (OIL)	234	323				
				PENNZOIL COMPANY	PENNZOIL UNITED, INC.	ASSIGNMENT (OIL)	307	359				
				PENNZOIL UNITED	PENNZOIL COMPANY	MERGER/NAME CHANGE	WVSOS					
				PENNZOIL COMPANY	PENNZOIL PRODUCTS COMPANY	ASSIGNMENT	460	139				
				PENNZOIL PRODUCTS COMPANY	PENNZOIL EXPLORATION AND PRODUCTION COMPANY	ASSIGNMENT	551	627				
				K	FK077958	21-04-007B-0026-0000; 21-04-007B-0028-0000; 21-04-007B-0028-0001; 21-04-007B-0028-0002; 21-04-007B-0029-0000; 21-04-007B-0029-0001; 21-04-007B-0029-0002; 21-04-007B-0029-0003; 21-04-007B-0029-0004; 21-04-007B-0029-0005; 21-04-007B-0029-0006; 21-04-007B-0029-0007; 21-04-007B-0029-0009; 21-04-007B-0029-0010; 21-04-007B-0029-0011; 21-04-007B-0029-0012; 21-04-007B-0029-0013; 21-04-007B-0029-0014; 21-04-007B-0029-0015;	Q100740000	ALDA V. HITT, WIDOW	R.E. BEERY AND VICTOR BALDINI, PARTNERS DBA BITNER FUEL COMPANY	NOT MORE THAN 1/8	208	462
R.E. BEERY AND VICTOR BALDINI, PARTNERS DOING BUSINESS AS THE BITNER FUEL COMPANY, AND FLKOIRENCE BALDINI, WIFE OF VICTOR BALDINI	R.E. BEERY	ASSIGNMENT	295					580				
EARL BEERY, DECONSTA E. SMITH, JR. AND MARK P. HITT, EXECUTORS AND TRUSTEES UNDER THE LAST WILL AND TESTAMENT OF ROBERT E. BEERY, DECEASED	CONSOLIDATED GAS SUPPLY CORPORATION	ASSIGNMENT	312					80				
CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	425					127				
CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	WVSOS									
CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS									
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM OF FARMOUT AGREEMENT	672					154				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	684					57				
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	712					848				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	717					1				
NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722					170				
DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	723					499				
DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	AMENDED AND RESTATED PARTIAL ASSIGNMENT	723					527				
L	268316000	04-07C-0060-0000 04-07C-0060-0001 04-07C-0058-0000 04-07C-0055-0000 04-07C-0032-0000 04-07C-0064-0000 04-07C-0059-0000 04-07C-0068-0000	CNX268316000					C.A. BAILEY AND M.C. BAILEY, HER HUSBAND, AND EMMA GOLDSMITH	CARNEGIE NATURAL GAS COMPANY	NOT LESS THAN 1/8	73	371
								CARNEGIE NATURAL GAS COMPANY	CARNEGIE PRODUCTION COMPANY	ASSIGNMENT	558	550
				CARNEGIE PRODUCTION COMPANY	EQUITABLE PRODUCTION-EASTERN STATES, INC.	MERGER	WVSOS					
				EQUITABLE PRODUCTION-EASTERN STATES, INC.	ETBG-APOLLO DIVISION, A DIVISION OF ET BLUE GRASS COMPANY	ASSIGNMENT OF OPERATING RIGHTS	572	371				
				EQUITABLE PRODUCTION-EASTERN STATES, INC.	EQT PRODUCTION COMPANY	MERGER	WVSOS					
				EQT PRODUCTION COMPANY	CNX GAS COMPANY, LLC	TERM ASSIGNMENT	687	382				
				CNX GAS COMPANY LLC	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	737	8				

M	21-04-007C-0030.0002	Q102176000 Title# 255787000	J. H. BAILEY ETAL	JAMES F. SCOTT	NOT LESS THAN 1/8	369	449			
			JAMES F. SCOTT	George R. Gobson	ASSIGNMENT	378	159			
			George R. Gibson ET UX	Randall Gibson	ASSIGNMENT	489	623			
			George R. Gibson ET UX	EMAX OIL COMPANY	ASSIGNMENT	489	623			
			George R. Gibson ET UX	Randall Gibson	ASSIGNMENT	489	625			
			George R. Gibson ET UX	EMAX OIL COMPANY	ASSIGNMENT	489	623			
			JAMES F. SCOTT	SCOTT OIL COMPANY	MERGER/NAME CHANGE	WVSOS				
			SCOTT OIL COMPANY	EMAX OIL COMPANY	ASSIGNMENT	486	162			
			EMAX OIL COMPANY, GEORGE R GIBSON, RANDALL GIBSON, AND RICHARD C. GIBSON	CABOT OIL AND GAS CORPORATION	ASSIGNMENT	513	82			
			JAMES F. SCOTT	CABOT OIL AND GAS CORPORATION	ASSIGNMENT	515	147			
			JAMES F. SCOTT	CABOT OIL AND GAS CORPORATION	QUIT CLAIM ASSIGNMENT	558	99			
			EMAX OIL COMPANY	CABOT OIL AND GAS CORPORATION	ASSIGNMENT	558	92			
			CABOT OIL AND GAS CORPORATION	ENERVEST APPALACHIA L P	ASSIGNMENT	558	249			
			ENERVEST APPALACHIA L P	CGAS PROPERTIES L P	ASSIGNMENT	621	590			
			CGAS PROPERTIES L P	CNX GAS COMPANY LLC	ASSIGNMENT	681	314			
			CNX GAS COMPANY, LLC	NOBLE ENERGY, INC.	ASSIGNMENT	717	1			
			NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722	139			
NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722	170						
N	21-04-007C-0031-0000	Q102121000, Q102119000, Q102118000, Q102123000, Q102120000, Q098757000, Q102122000, Q102117000	KATRINA L WEST	CNX GAS COMPANY LLC	NOT LESS THAN 1/8	704	563			
			DAVID C GARVIN	CNX GAS COMPANY LLC	NOT LESS THAN 1/8	704	555			
			ALISA G GUM	CNX GAS COMPANY LLC	NOT LESS THAN 1/8	704	551			
			LORI LEE CALDWELL	CNX GAS COMPANY LLC	NOT LESS THAN 1/8	704	571			
			KARRIE DIANE SIMS	CNX GAS COMPANY LLC	NOT LESS THAN 1/8	704	559			
			GERALD W RAMSBURG	CNX GAS COMPANY LLC	NOT LESS THAN 1/8	700	24			
			KAREN K HOBBS	CNX GAS COMPANY LLC	NOT LESS THAN 1/8	707	567			
			DENISE C CARSON	CNX GAS COMPANY LLC	NOT LESS THAN 1/8	704	547			
			CNX GAS COMPANY, LLC	NOBLE ENERGY, INC.	ASSIGNMENT	717	1			
			NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722	139			
			NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722	170			
			P	21-04-008C-0001-0001	Q102115000	KEVIN B JERDEN ET UX	CNX GAS COMPANY LLC	NOT LESS THAN 1/8	604	234
						CNX GAS COMPANY, LLC	NOBLE ENERGY, INC.	ASSIGNMENT	717	1
						NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722	139
NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT				722	170			
Q	21-04-008C-0001-0004	Q097844000	KEVIN B. JERDEN AND SHERI K. JERDEN, HUSBAND AND WIFE	CNX GAS COMPANY, LLC.	NOT LESS THAN 1/8	692	409			
			CNX GAS COMPANY, LLC	NOBLE ENERGY, INC.	ASSIGNMENT	717	1			
			NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722	139			
			NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722	170			
R	21-04-008C-0001-0005, 21-04-008C-0001-0003	HGII051	JOHN L BREEN	HG ENERGY II APPALACHIA, LLC	NOT LESS THAN 1/8	734	702			
S	21-04-008C-0001-0006	HGII100	GREGORY ALDERSON ET UX	HG ENERGY II APPALACHIA, LLC	NOT LESS THAN 1/9	735	292			
T	21-04-008C-0001-0008	HGII073	STEVEN M JERDEN ET UX	HG ENERGY II APPALACHIA, LLC	NOT LESS THAN 1/10	735	842			
U	21-04-008C-0001-0002, 21-04-008C-0001-0007	HGII050	MELISSA SIGLEY	HG ENERGY II APPALACHIA, LLC	NOT LESS THAN 1/11	734	694			
V	FK068456	FK068456	HUGH RAMSBURG AND FLOE RAMSBURG, HIS WIFE	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	255	543			
			HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	294	89			
			CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	425	127			
			CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	WVSOS				
			CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS				
			DOMINION TRANSMISSION, INC.	CONSOL ENERGY HOLDINGS LLC XVI	ASSIGNMENT	651	318			
			CONSOL ENERGY HOLDINGS XVI	DOMINION EXPLORATION AND PRODUCTION, INC.	MERGER/NAME CHANGE	UNRECORDED				
			DOMINION EXPLORATION AND PRODUCTION, INC.	DOMINION TRANSMISSION, INC.	ASSIGNMENT	651	137			
			DOMINION EXPLORATION AND PRODUCTION, INC.	CONSOL ENERGY HOLDINGS LLC	MERGER/NAME CHANGE	UNRECORDED				
			CONSOL ENERGY HOLDINGS XVI	CNX GAS COMPANY LLC	MERGER/NAME CHANGE	UNRECORDED				

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21-04-008C-0006-0004

DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	AMENDMENT TO ASSIGNMENT	658	715
CNX GAS COMPANY LLC	DOMINION TRANSMISSION, INC.	AMENDMENT TO ASSIGNMENT	658	728
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM OF FARMOUT AGREEMENT	672	154
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	684	57
NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	737	8



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

03/29/2019

4703305944

January 29, 2019

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

RECEIVED
Office of Oil and Gas
FEB 05 2019
WV Department of
Environmental Protection

RE: Drilling Under Roads – Nays 1209 S-8H
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

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

Date of Notice Certification: 01/25/2019

API No. 47- _____
Operator's Well No. Nays 1209 S-8H
Well Pad Name: Nays 1209

Notice has been given:

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

State: West Virginia
County: Harrison
District: Union
Quadrangle: West Milford 7.5'
Watershed: West Fork

UTM NAD 83 Easting: 548192.0
Northing: 4333347.2
Public Road Access: Kincheloe Run Road / SR35
Generally used farm name: Nays

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WV Department of Environmental Protection

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

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

WW-6AC
(1/12)

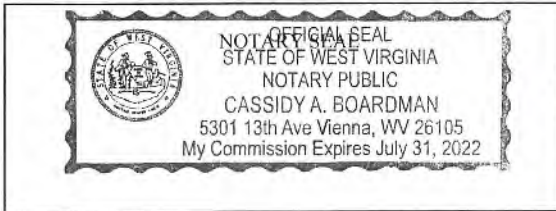
Certification of Notice is hereby given:

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

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

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

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Subscribed and sworn before me this 25th day of January, 2019
Cassidy A. Boardman Notary Public
My Commission Expires 7/31/2022

WV Department of
Environmental Protection

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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

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

Date of Notice: 01/23/2019 **Date Permit Application Filed:** 02/08/19

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

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Office of Oil and Gas
FEB 05 2019
WV Department of
Environmental Protection

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

Application Notice WSSP Notice E&S Plan Notice Well Plat Notice is hereby provided to:

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

Name: _____
Address: _____

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

Name: _____
Address: _____

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

COAL OWNER OR LESSEE
Name: NA
Address: _____

COAL OPERATOR
Name: NA
Address: _____

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

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

*Please attach additional forms if necessary

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

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

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Office of Oil and Gas
FEB 05 2019
WV Department of Environmental Protection

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/HorizontalPermits/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- _____ - **03/29/2019**
OPERATOR WELL NO. Nays 1209 S-8H
Well Pad Name: Nays 1209

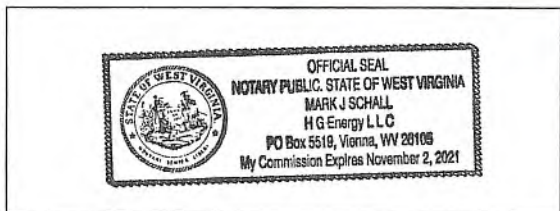
Notice is hereby given by:

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 depprivacyofficer@wv.gov.



Subscribed and sworn before me this 23rd day of January, 2019.

[Signature] _____ Notary Public

My Commission Expires 11/2/2021

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WV Department of
Environmental Protection

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

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

Date of Notice: 1/16/19 **Date of Planned Entry:** 1/23/19

Delivery method pursuant to West Virginia Code § 22-6A-10a

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

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

Notice is hereby provided to:

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

COAL OWNER OR LESSEE
 Name: _____
 Address: _____

MINERAL OWNER(S)
 Name: See Attached List
 Address: _____

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Office of Oil and Gas

FEB 05 2019

WV Department of
Environmental Protection

*please attach additional forms if necessary

Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.147988 / 80.442296</u>
County: <u>Harrison</u>	Public Road Access: <u>SR 19</u>
District: <u>Union</u>	Watershed: <u>West Fork</u>
Quadrangle: <u>West Milford 7.5'</u>	Generally used farm name: <u>Nays</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: <u>HG Energy II Appalachia, LLC</u>	Address: <u>5260 Dupont Road</u>
Telephone: <u>304-420-1109</u>	<u>Parkersburg, WV 26101</u>
Email: <u>dwhite@hgenergyllc.com</u>	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.

WW-6A3
(1-12)

1209S - 8H

Page 1 Continued

Mineral Owners

Alicia Darlene Simons Casuccio
166 Darlene Drive
Corapolis, PA 15108

Alisa Carol Garvin Gum
1101 Broad Run Road
Jane Lew, WV 26378

Allen Dale Baker
700 Timothy Drive
Frankfort, KY 40601

Ann Covington
1401 Torrey Pines Dr
Columbia, MO 65203-4825

Appalachian Royalties Inc.
PO Box 1917
Clarksburg, WV 26302

Barbara Jane White
21 Hudson Ave
Ocean View, DE 19970

Big Chief Drilling & Production Co
PO Box 329
Weston, WV 25452

Blackrock Enterprises, LLC
PO Box 342
Salem, WV 26426

Buckner W. Hornor
486 Irish Hill Rd
Hopkinton, NH 03229

Burl Edward Allen
947 Broad Run Road
Jane Lew, WV 26378

Carmelita Gaines Yukevich
530 Scott Hall Road
Burgettstown, PA 15021

Charles E Garton Nonmarital Trust
3482 Littleburg Rd
Bluefield, WV 24701

Charles E. Garton-Non-Marital Trust
421 Main Ave
Weston, WV 26452

Christ the King Catholic Church
1504 Grosscup Ave
Dunbar, WV 25064

David C. Garvin
300 Riverside Dr.
Allegan, MI 49010

David H.Ramsburg
PO Box 894
Jane Lew, WV 26378

David H.Ramsburg II
PO Box 894
Jane Lew, WV 26378

Dawn Ford Cramer
71618 Gast Station Shippey Road
St. Clairsville, OH 43950

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Page 1 Continued

Mineral Owners

Deana Diane Roush ✓
8 Silk Oak Street Lake
Placid, FL 33852

Deborah A. Stutler ✓
126 Grey Feather Lane
Sagle, ID 83860

Deborah Nay Stutler ✓
9967 WV Route 185
New Milton, WV 26411

Deborah S. Goldsmith ✓
13224 N 31st Way
Phoenix, AZ 85032

Denise Carol Ramsburg Carson ✓
2516 Copley Road
Weston, WV 26452

Derrick J. Ramsburg ✓
PO Box 894
Jane Lew, WV 26378

Dewaine T. Norris ✓
1869 Sierra Drive
Marietta, GA 30062

Diane LaPosta ✓
6700 Blake Pledger Court North
Fort Myers, FL 33917

Dollena Joy Barber ✓
1820 South Contention Lane
Cottonwood, AZ 86326

Donald G. Carder ✓
5060 Churchville Road
Camden, WV 26338

Donald R. Reynolds ✓
PO Box 607
Jane Lew, WV 26378

Donald R. Wilson ✓
212 NE 56th St
Oak Island, NC 28465-4919

Donald Reed Baker ✓
5575 New Glendale Road
Elizabethtown, KY 47201

Donald W. Higgins ✓
PO Box 1465
Weston, WV 26452

Dorothy Bryant ✓
13430 Coppermine Road Apt. 230
Herndon, VA 20171-4486

Dorsey B. King, Jr. ✓
1446 Hildreth Road
Buckhannon, WV 26201

Dwight L. Musser ✓
433 20th Street
Dunbar, WV 25064

Dwight L. Musser ✓
PO Box 597
Scott Depot, WV 22560

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Mineral Owners

Eleanor Lou Dotson
109 Loretta Ave
Follensbee, WV 26037

Erin Harrington Duffy
& Hugh Michael Duffy
97 Steele Road W
Hartford, CT 06119

Evelyn F. Beeghley
1572 McNaughten Road
Columbus, OH 43232

Gerald E. Allen
432 20th Street
Dunbar, WV 25064

Gloria Rose Pauley
5521 West Pea Ridge Road
Huntington, WV 25705

Gregory Kevin Harrington
& Clair Kearney Harrington
1805 E. 16th Street, Unit B
Austin, TX 78702

Holy Trinity Catholic Church
2219 22nd St
Nitro, WV 25143

Jacqueline McLaughlin
1033 Loveberry Run Road
Weston, WV 26452

Elizabeth Raye Musser
137 Wilson Lane
Liberty, WV 25124

Evelyn B. McDonald
1565 Two Lick Road
Jane Lew, WV 26378

Frank L. Bragg and Mary Ellen Bragg
945 Broad Run Rd
Jane Lew, WV 26378

Gerald Ramsburg
285 Parkview Dr
Bridgeport, WV 26330

Gregory C. & Debra L. Alderson
1235 Broad Run Rd
Jane Lew, WV 26378

Helen L. Golden
1766 Geelick Road
Weston, WV 26452

Irene Arbogast & Fred Arbogast
945 Broad Run Road
Jane Lew, WV 26378

Jacqueline Musser McGhee
53 Hillhouse Lane
Ringgold, GA 30736

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Mineral Owners

*Jaqueline McLaughlin
1033 Loveberry Run Rd.
Weston, WV 26452*

James Christopher Heater
1119 Highland Ave.
Vandergrift, PA 15690

James R. Kettering Jr.
PO Box 511
Fairmont, WV 26555-0511

James Robert Layfield
3658 Travertine Dr
Lancaster, SC 29720

James Y. Hornor and Jean S. Hornor
5002 Esmond Lane
Castle Rock, CO 80108-9027

Janine R. Goff
PO Box 1977
Middleburg, FL 32050

Jeannie McCormick
1652 Lost Creek Roomins Mill Road
Lost Creek, WV 26385

Jerry Lee Simons
236 Riverdale Road
Clarksburg, WV 26301

Joan Musser Massucci
24325 Cardinal Place Lake
Forrest, CA 92630

John E. Corkrean Trust
2515 Winona Ave
Leesburg, FL 34748

John Henry McWhorter
5392 Duck Creek Road
Lost Creek, WV 26385

John I. Nye
PO Box 1365
Weston, WV 26452

John L. Breen
PO Box 784
Jane Lew, WV 26378

John R. Gibbs
4979 Peggy Ann Drive
New Franklin, OH 44319

K Kendall & Margaret Gaines Living Trust
12401 Gayton Road Apt #449
Henrico, VA 23238

Karen Kay Hobbs
1241 E Jefferson Pike
Murfreesboro, TN 37130

Karrie Diane Sims
6833 Wagon Oak Dr
Charlotte, NC 28212

Katrina Lynne West
73 Kooter Lane
Shinnston, WV 26431

Kevin B. Jerden and Sheri K. Jerden
1217 Broad Run Road
Jane Lew, WV 26378

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Mineral Owners

Lee Gregory
1846 Powell Drive #106
Fort Myers, FL 33917

Leslie Christine Crumit
116 S. Florence St
Clarksburg, WV 26301

Leslie G Robinson
2108 Pettigrew St
Sullivans Island, SC 29482-0307

Letitia Alkire
65 Oak Street
Salem, WV 26426

Linda S. Harris
326 Township Road 1167
Proctorville, OH 45669

Lori Henry
12 Deerfield Road
South Burlington, VT 05403

Lori Lee Caldwell
16177 Aura Lane
Bokeelia, FL 33922

Lynda Law Harrison Wilson
2641 Paden Place
Birmingham, AL 35226

M & R Investments, LLC
100 Corporate Ridge Suite 100
Birmingham, AL 35242

Margaret Ann McEndree
15391 Gates Street
Doylestown, OH 44230

Mary H. Balmer
619 Ohio Ave
Eustis, FL 32726-5121

Mary Jane Lewis
146 E Main St
Clarksburg, WV 26301

Mary Katherine Gum
PO Box 321
Jane Lew, WV 26378

Mary Lou Buck
2207 Park Ave
Parkersburg, WV 26101

Marylyn K. Wolf
1500 Norfolk Street North
St. Petersburg, FL 33710

Marylyn K. Wolf
3492 South Oakdale Terrace
Inverness, FL 34452

Mathew Gaines & Lauren L Harrington
802 N 20th Street
Philadelphia, PA 19130

Melissa A. Sigley
c/o Roger G. Russell
1331 Broad Run Rd
Jane Lew, WV 26378

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Mineral Owners

Michael Ross ✓
PO Box 880
Glenville, WV 26351

Michael Ross ✓
PO Box 219
Coalton, WV 26257

Michelle A. Goldsmith ✓
604 Pringle Ave, Space 116
Galt, CA 95632

Nardella Energy, LLC ✓
309 John Street
Clarksburg, WV 26301

Patricia A. Moody ✓
121 Pricetown Road
Weston, WV 26452

Patricia Butcher ✓
1633 Fuller Road
Colorado Springs, CO 80920

Patricia Byrnes ✓
24012 Pear Tree Circle
Plainfield, IL 60544

Paul Allen Hornor Jr. ✓
161 Cooing Dove Drive 9
Bridgeport, WV 26330-6749

Paula E Freeman ✓
42023 Shadow Creek Ave
Gonzales, LA 70737

Paula Freeman ✓
789 Elck City Road
Jane Lew, WV 26378

Paula M Weller ✓
114 Kulps Rd
Barto, PA 19504

Paula Marie Weller ✓
114 Kulps Road
Barto, PA 19504-8848

Phyllis Anne Taylor ✓
187 River View Drive St
Albans, WV 25177

Phyllis Kay Beare ✓
PO Box 388
Jane Lew, WV 26378

Ralph L. & Judith A. Cole ✓
939 Broad Run Road
Jane Lew, WV 26378

Raymond J. Grimes ✓
226 Branch Rd
Monroe Twp, NJ 08831

Richards Resources ✓
608 Independence Road
Salem, WV 26426

Robert E. Donaldson ✓
858 Stevens Lane
Bloomfield, KY 40008

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Robert Lee Simon
13905 SW 74th Ave
Miami, FL 33158

Roberta M Green
410 Masters Dr
Cross Junction, VA 22625

Roberta M. Donaldson
7725 Heights Drive
Louisville, KY 40291

Roberta M. Green
789 Oak City Road
Jane Lew, WV 26378

Roberta Robinson
Rt 5 Box 100
Salem, WV 26426

Rock Garton
81 Hickory Drive
Jane Lew, WV 26378

Salvation Army
301 Tennessee Ave
Charleston, WV 25302

Savin Lumber Company
190 Vineyard Drive
Weston, WV 26452

Scott Winn
12151 San Marino Ave NW
Uniontown, OH 44685

Sharon Sue Garrison
PO Box 388
Jane Lew, WV 26378

Sharron Lipton
113 Regency Cir
Anderson, SC 29625

Shirley A Christian
6089 Pond View Dr
Birdsboro, PA 19508

Shirley Murphy
828 Laurel Park Road
Clarksburg, W 26301

Shirley Murphy and Keith Murphy
828 Laurel Park Road
Clarksburg, WV 26301

Steven M. & Tricia A. Jerden
2809 Valley Chapel Rd
Weston, WV 26452

Sunny Glen Oil & Gas
95 Sunny Glen Lane
Salem, WV 26426

Susan G. England
3006 Little Dale Road
Akron, OH 44319

Teresa H. Patino
24092 Pear Tree Circle
Plainfield, Illinois 60544

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Mineral Owners

Teresa H. Patino
624 Fawell Court
Naperville, IL 60565

Terry Lynn Wimer
12 River Street
Glennville, WV 26351

Theodore A. Nay
346 Gooseman Road
Jane Lew, WV 26378

Thomas H. Wilson
1412 Western Ave
Morgantown, WV 26505-2148

Trio Petroleum Corp
PO box 880
Glennville, WV 26351

Walter G. Krauss
923 Waterside Lane
Bradenton, FL 34209

WV Minerals Inc
PO Box 5044
Fairmont, WV 26555

Terrie L. Titus & Brian Scott Titus
1376 Broad Run Road
Jane Lew, WV 26378

Terry Wayne Simons
1104 North 20th St
Clarksburg, WV 26304

Thomas F. Norris
188 Montauck Dr
Richmond Hills, GA 31324

Thomas W. Starkey & Martha S. Starkey
1507 Zachs Run Rd
Mount Clare, WV 26408

Waco Oil & Gas Company, Inc.
PO Box 880
Glennville, WV 26351

William Donaldson
1360 York Road
Clarksville, TN 37042

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HG Energy II Appalachia, LLC not noticed via certified mail.

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: 10/29/2018 **Date Permit Application Filed:** 11/09/2018

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

HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

RECEIVED
Office of Oil and Gas

FEB 05 2019

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: 548192.0
County: Harrison Northing: 4333347.2
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
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: 10/31/2018 **Date Permit Application Filed:** 11/09/2018

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

CERTIFIED MAIL HAND *
RETURN RECEIPT REQUESTED DELIVERY

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

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

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

Name: _____
Address: _____

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>548192.0</u>
County: <u>Harrison</u>		Northing: <u>4333347.2</u>
District: <u>Union</u>	Public Road Access: <u>Kincheloe Run Road/ SR35</u>	
Quadrangle: <u>Audra 7.5'</u>	Generally used farm name: <u>Cone</u>	
Watershed: <u>Elk Creek</u>		

This Notice Shall Include:

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

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

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

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Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at 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.

WV Department of
Environmental Protection



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

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

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

November 1, 2018

Jill M. Newman
 Deputy Commissioner

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

Subject: DOH Permit for the Nays 1209 Well Pad, Harrison County
 S-8H 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

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

WV Department of
 Environmental Protection

List of Frac Additives by Chemical Name and CAS #

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

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

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

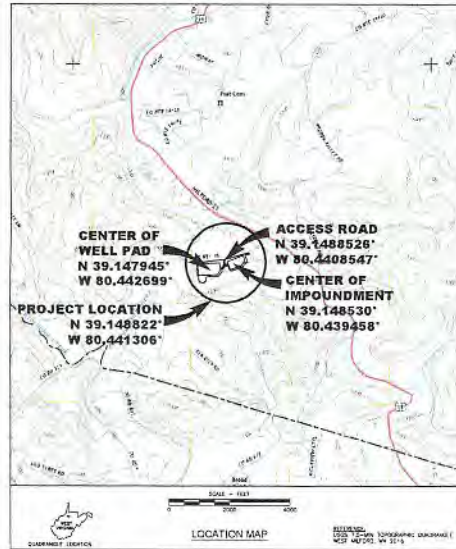
**APPROVED
WVDEP OOG**

10/16/2018

UNION DISTRICT
HARRISON COUNTY
WEST VIRGINIA

CONSTRUCTION SEQUENCE

- 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.
- 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.
- 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.
- Land Clearing and Grading - Implement clearing and grading only after all downslope E&S BMPs have been constructed and stabilized.
- 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.
- 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.
- Upon completion of pad grading, compact the pad to grade and begin placement of pad soil cement.
- Final Stabilization, Topsoiling, Trees and Shrubs - After construction is completed, install stabilization BMPs including permanent seeding, mulching and rripap, 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		
Pad	18,751	37,330
Impoundment	47,964	14,737
Road	148	304
Trench	68,823	67,660
Soil Adjustment for Aggregate Import		2,330
Pad		131 Cu.
Total Site Balance:		
Stripped Topsoil (Limit of Disturbance)		14,087
Est. Swell Factor (20%)		2,811
Est. Topsoil Stockpile Volume (Loose CY)		16,898
Minimum Total Stockpile Capacity, Resources (CY)		17,619

- NOTES:
- Material balance for est. gross earthwork quantities only.
 - Topsoil est. volume based on 8 inches average depth.
 - Material balance and aggregate quantities based on estimates and may not be representative of actual quantities.
 - Estimates do not reflect contractor pay volumes.

Estimated Gravel Quantities (Based on)		
Gravel Quantities	# 564 Cement	264
	# 2 Coarser Run	2,361
Top Coat Chip & Seal (Based on)		2,777 sq. yd.
Estimated Concrete (Based on)		3,480
Estimated Total Lbs of Disturbance (Acres)		17,426
Estimated Impoundment Limit of Disturbance (Acres)		5,840
Estimated Well Pad & Road Limit of Disturbance (Acres)		11,677
Well Pad Pre-Construction Erosion (ft)		10.0

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 LOT
HG ENERGY II APPALACHIA, LLC	20-444-11.2	95.00 AC.	17,426 AC.
TOTAL LIMIT OF DISTURBANCE			17,426 AC.

1209 PAD & IMPOUNDMENT ENTRANCE	LATITUDE	LONGITUDE
	N 39.1488026	W 80.4458547

WELL #	EAST	LONG.
N-1M	N 39.147888	W 80.441458
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 39.148082	W 80.443467
N-6H	N 39.148021	W 80.443454
N-7H	N 39.148029	W 80.443239
N-8H	N 39.147980	W 80.443298
N-9H	N 39.147948	W 80.443294
N-10H	N 39.148570	W 80.443362
N-11H	N 39.148111	W 80.443305
N-12R	N 39.148152	W 80.443208

THIS DRAWING IS REPRESENTED TO BE A FINAL SHEET AND ONLY REFERRED TO THE PROJECT FOR REVISIONS. THE DRAWING SHALL BE KEPT ON FILE BY THE CLIENT. ANY CHANGES TO THIS DRAWING SHALL BE MADE BY THE CLIENT. ANY CHANGES TO THIS DRAWING SHALL BE MADE BY THE CLIENT. ANY CHANGES TO THIS DRAWING SHALL BE MADE BY THE CLIENT.

REVISION	DATE	DESCRIPTION
1	5/21/18	ADDED PROPERTY MAP, MODIFIED THE SET COMMENTS.
2	2/15/18	NO CHANGE NEEDED, ADDED EROSION QUANTITIES, ADDED STOCKPILE.
3	5/12/18	IMPOUNDMENT REVISION, ADJUSTED SITE BALANCE AND STOCKPILE.
4	7/22/18	MODIFICATIONS PER DEP COMMENTS.
5	10/21/18	IMPLEMENTATION CHANGES PER DEP COMMENTS, REVISION SET DATE, ADDED SETTING.
6	10/12/18	MODIFICATIONS TO MARK PER DEP COMMENTS, ADDED WITHIN LABELS.



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

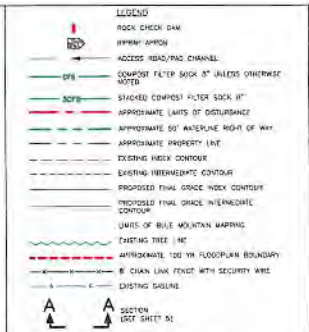
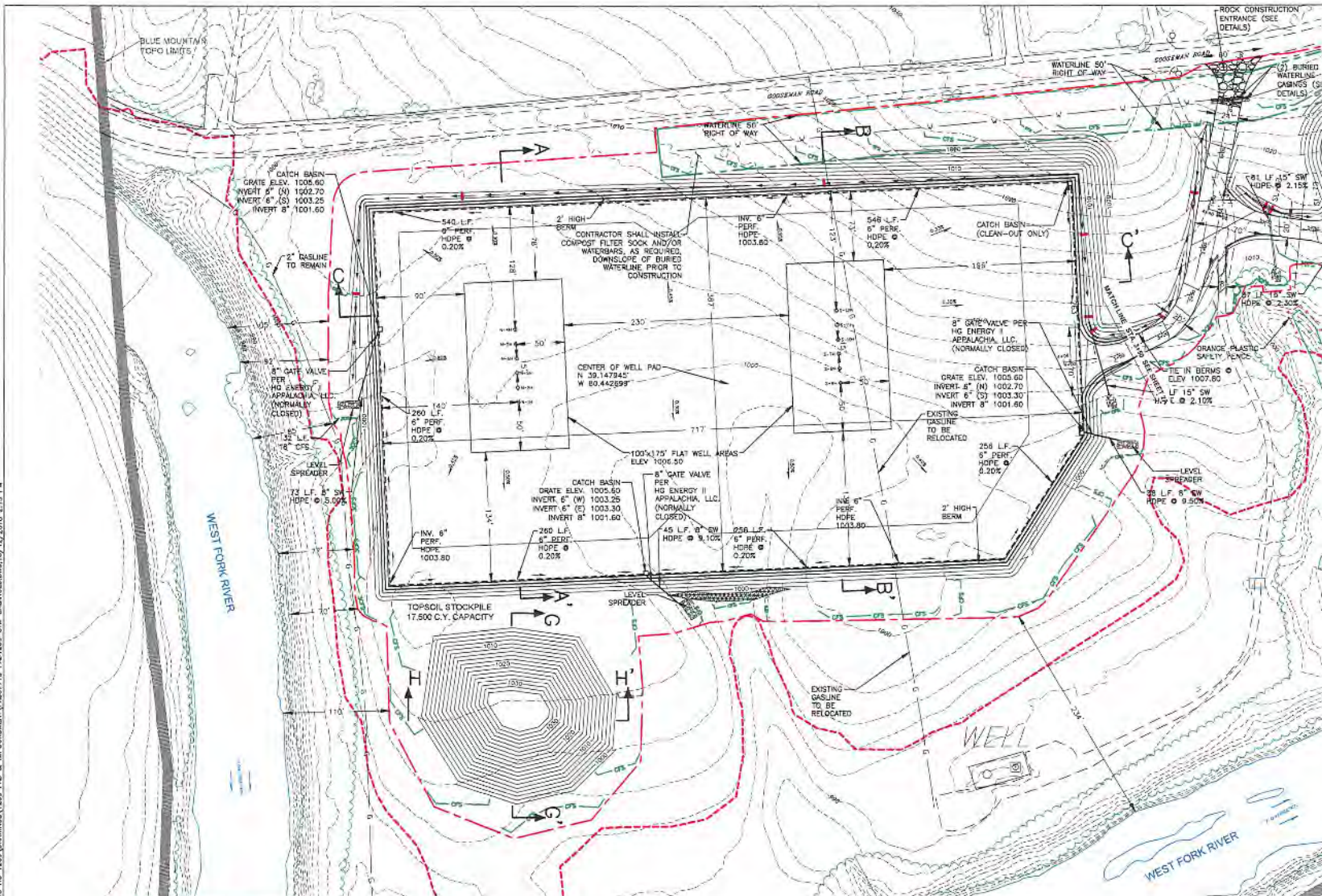
PREPARED FOR
HG ENERGY II APPALACHIA, LLC
PARKERSBURG, WEST VIRGINIA

APPROVED	MEP 05/22/2018	
CHECKED	MEP 05/22/2018	
DRAWN	DAW 05/09/2018	Penn E&R Environmental & Remediation, Inc. 111 RYAN COURT, PITTSBURGH, PA 15205 412-722-1222
PROJECT NO.	4000-20007715	
DRAWING NUMBER	PA007715-001	
SHEET	1	

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

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

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- NOTES**
1. REFER TO THE SHEET WITH THE CONSTRUCTION NOTES AND DETAILS.
 2. CONTRACTOR SHALL CONTACT WEST VIRGINIA UTILITIES ASSISTANCE SERVICES (WVUAS) TO OBTAIN A CONSTRUCTION PERMIT FOR ANY EXISTING UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OTHER REGULATORY REQUIREMENTS PRIOR TO BEGINNING WORK AT THE SITE. THE SITE SHALL BE COMPLETED IN ACCORDANCE WITH ANY APPLICABLE PERMITS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OTHER REGULATORY REQUIREMENTS PRIOR TO BEGINNING WORK AT THE SITE. THE SITE SHALL BE COMPLETED IN ACCORDANCE WITH ANY APPLICABLE PERMITS.
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APPROVED WVDEP OOG
 7/10 10/16/2018

REVISIONS

NO.	DATE	DESCRIPTION
1	5/21/18	ISSUE PERMIT AND APPROVATION PER CIVIL DIVISION
2	3/26/18	ADD IMPACTS PERMITS AND IMPROVE DRAINAGE AND STORMWATER
3	8/12/18	IMPROVEMENTS PER CIVIL DIVISION
4	7/27/18	IMPROVEMENTS PER CIVIL DIVISION
5	10/27/18	ADD IMPACTS PERMITS AND IMPROVE DRAINAGE AND STORMWATER
6	10/12/18	IMPROVEMENTS PER CIVIL DIVISION

SCALE - FEET
 0 50 100 150

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

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

APPROVED: WEP 05/23/2018
 DRAWN: WEP 05/23/2018
 CHECKED: WEP 05/23/2018
 PROJECT NO.: 4000-1960715

Penn E&R
 Environmental & Remediation, Inc.
 111 RYAN COURT, PITTSBURGH, PA 15205
 412-222-1222

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

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 www.call811.com