



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

Tuesday, August 28, 2018
WELL WORK PERMIT
Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD

PARKERSBURG, WV 26101

Re: Permit approval for RIDDLE 1301 S-3H
47-021-05794-00-00

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: RIDDLE 1301 S-3H
Farm Name: EMARY W. & JESSICA R. FRY
U.S. WELL NUMBER: 47-021-05794-00-00
Horizontal 6A New Drill
Date Issued: 8/28/2018

PERMIT CONDITIONS

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

CONDITIONS

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

PERMIT CONDITIONS

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

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

1) Well Operator: HG Energy II Appalachia, L.P. 494519932 Gilmer Dekalb Burnt House
Operator ID County District Quadrangle

2) Operator's Well Number: Riddle 1301 S-3H Well Pad Name: Riddle 1301

3) Farm Name/Surface Owner: Emary W. & Jessica R. Frymier Public Road Access: SR 47

4) Elevation, current ground: 1251' Elevation, proposed post-construction: 1237'

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target - Marcellus, Depth 6600' to 6640', Thickness - 40', Pressure - 4000#

8) Proposed Total Vertical Depth: 6625'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 17,146'

11) Proposed Horizontal Leg Length: 10,035'

12) Approximate Fresh Water Strata Depths: NA

13) Method to Determine Fresh Water Depths: No actual well data to estimate from 47-021-5249

14) Approximate Saltwater Depths: NA

15) Approximate Coal Seam Depths: NA

16) Approximate Depth to Possible Void (coal mine, karst, other): NA

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

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

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18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	N	J-55	94#	145' 420'	145' 420'	Drilled In
Fresh Water	13 3/8"	N	J-55	54.5#	1100'	1100'	CTS
Coal							
Intermediate	9 5/8"	N	J-55	40#	2650'	2650'	CTS
Production	5 1/2"	N	P-110	23#	17146'	17146'	CTS
Tubing							
Liners							

DM
47-021-5249

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	20"	20"	0.438"	2110		Class A	
Fresh Water	13 3/8"	17 1/2"	0.380"	2730		Class A	1.20
Coal							
Intermediate	9 5/8"	12 1/4"	0.395"	3950		Class A	1.20
Production	5 1/2"	8 1/2"	0.415"	14520		Class A	Lead Yield = 1.19, Tail Yield = 1.94
Tubing							
Liners							

PACKERS

Kind:				RECEIVED Office of Oil and Gas
Sizes:				MAY 24 2018
Depths Set:				WV Department of Environmental Protection

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 6,625'. Drill horizontal leg to estimated 10,035'. Stimulate and produce the Marcellus formation. Should an unanticipated void be encountered in the coal, a minimum of 20' of casing will be installed 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): 15.84 acres

22) Area to be disturbed for well pad only, less access road (acres): 3.74 acres

23) Describe centralizer placement for each casing string:

Conductor - NA
Surface Casing - Bow Springs (over collars) on first 2 joints then every third joint to 100' from surface
Intermediate Casing - Bow Springs (over collars) on first 12 joints, then every third joint to 100' from surface
Production Casing - 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 - NA
Surface Casing - 15.6 ppg PNE-1 + 3% bwoc CaCl₂ Excess Yield=1.20, CTS
Intermediate Casing - 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 Casing - 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

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25) Proposed borehole conditioning procedures:

Conductor - Once at casing setting depth, ensure hole is clean at TD
Surface Casing - Circulate & condition @ TD w/ Air. RIH w/ casing & fill w/ Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbls of 6% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.
Intermediate Casing - Circulate & condition @ TD w/ Air. RIH w/ casing & fill w/ Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbls of 6% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.
Production Casing - 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.

4702 05794

Riddle 1301 Well Pad (S-3H, S-4H, S-5H)
Cement Additives

Material Name **Material Type** **Material Description**
Premium NE-1 Portland Cement Premium NE-1 is a portland cement with early compressive strength properties.

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

Bentonite Extender Commonly called gel, it is a clay material used as a cement extender and to control excessive free water.

Ingredient name	%	CAS number
bentonite	90 - 100	1302-78-9
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

Ingredient name	%	CAS number
Calcium chloride	90 - 100	10043-52-4

Cello Flake Lost Circulation Graded (3/8 to 3/4 inch) cellophane flakes used as a lost circulation material.

Ingredient name	%	CAS number
No hazardous ingredient		

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.

Ingredient name	%	CAS number
Tributyl phosphate	90 - 100	126-73-8

Granulated Sugar Retarder Used to retard cement returns at surface. A proprietary product that provides expansive properties and improves bonding at low to moderate temperatures.

Ingredient name	%	CAS number
Sucrose	90 - 100	57-50-1

EC-1 Gas Migration Multi-purpose polymer additive used to control free fluid, fluid loss, rheology, and gas migration.

Ingredient name	%	CAS number
Calcium magnesium oxide	90 - 100	37247-91-9

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.

Ingredient name	%	CAS number
No hazardous ingredient		

Ingredient name	%	CAS number
Crystalline silica: Quartz (SiO2)	5 - 10	14808-60-7
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.

Ingredient name	%	CAS number
Organic acid salt	40 - 50	Trade secret.

S-5 Surfactant Used to water wet casing and formation to facilitate cement bonding.

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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Riddle 1301 S-3H
Marcellus Shale Horizontal
Gilmer County, WV

08/31/2018

Ground Elevation	1237'	Riddle 1301 S-3H SHL	741078.5N 2018308.9E						
Azm	158.557°	Riddle 1301 S-3H LP	739953.51N 2017991.26E						
WELLSBORE DIAGRAM		Riddle 1301 S-3H BHL	730612.79N 2021659.92E						
HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS
20'	20" 94# J-55	Conductor	0	120	AIR	Casing Drilled in with Dual Rotary Rig	N/A	Once at casing setting depth, ensure hole is clean at TD	Conductor casing = 0.438" wall thickness Burs=2110 psi
17.5'	13-3/8" 54.5# J-55 BTC	Surface Casing	0	1100	AIR	15.6 ppg PNE-1 + 3% bwoc CaCl 40% Excess Yield=1.20 / CTS	Bow Springs (over collars) on first 2 joints then every third joint to 100' from surface	Circulate & condition @ TD w/ Air. RHM w/ casing & fill w/ Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbls of 8% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.	Surface casing = 0.380" wall thickness Burs=2730 psi
12.25'	9-5/8" 40# J-55 BTC	Big Lime Big Injun Weir Berea Storage Intermediate Casing	2127 2182 2442 2597 0	2182 2272 2537 2593 2680	AIR (to 100' above storage) then Salt Polymer mud through "storage"	Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl 40% Excess / Tail: 15.6 ppg PNE-1 + 2.5% bwoc CaCl 2.5% Excess. 1.20 Yield, CTS	Bow Springs (over collars) on first 12 joints then every third joint to 100' from surface	Circulate & condition @ TD w/ Air. RHM w/ casing & fill w/ Fresh Water. Calculate a minimum of 1 hole volume, plus 30 bbls of 8% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.	Intermediate casing = 0.385" wall thickness Burs=3520 psi
6.5' Vertical	5-1/2" 23# R-110 HC CDC H-TQ	Warren Baltimore Riley Benson Alexander Cashbaqua Middlesex Genesee Tully Hamilton Marcellus TMD / TVD	3504 3902 4612 4662 5172 6337 6357 6457 6492 6497 6600 6610 6626	3544 3929 4622 4669 5297 6367 6467 6482 6497 6600 6610 6626	AIR and/or 9.0ppg SOBM	Lead: 14.5 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc ECI + 0.75 gal/wk FPI3L + 0.3% bwoc MPA170 Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/wk FPI3L + 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. Run 1 spiral centralizer every 3 joints from the 1st 5.5' long joint to the top of the curve.	Once on bottom/TD with casing, circulate at max allowable pump rate for at least 2x bottoms up or until returns and pump pressures indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping cement.	Production casing = 0.415" wall thickness Burs=14520 psi None actual centralizer schedules may be changed due to hole conditions
8.5' Lateral		Onondaga	6940	6626	11.5ppg-12.5ppg SOBM				

LP @ 6625' TVD / 7111' MD

8.5" Hole - Cemented Long String
5.1/2" 23# R-110 HC CDC H-TQ

+4.10035' H. Lateral

TD @ +16625' TVD
+/-7146' MD

4702103794

WW-9
(4/16)

4702105794

API Number 47 - _____
Operator's Well No. Riddle 1301 S-3H

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) Ellis Fork Quadrangle Burnt House 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

DM

Will a pit be used? Yes No

If so, please describe anticipated pit waste: NA

Will a synthetic liner be used in the pit? Yes No If so, what ml.? _____

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number TBD - At next anticipated well)
- Off Site Disposal (Supply form WW-9 for disposal location) ✓
- Other (Explain _____)

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

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

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

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

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

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

-Landfill or offsite name/permit number? See Attached

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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 2th day of May, 2018

Cassidy A. Boardman Notary Public

My commission expires 7/31/2022



HG Energy II Appalachia, LLC

Proposed Revegetation Treatment: Acres Disturbed 15.84 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

Pre-seed and mulch all disturbed areas as soon as possible. Maintain E&S controls through the drilling and completion process as per regulations.

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: [Signature]

Comments: Preseed & Mulch Any Disturbed Areas

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Title: 006 Inspector [Signature] Date: 5-18-18

Field Reviewed? () Yes () No

Cuttings Disposal/Site Water

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Cuttings -Haul off Company:

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

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

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

Disposal Locations:

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

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

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

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

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

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

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

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

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

Brooke County Landfill Permit # SWF-103-97 / WV 0109029
Rd 2 Box 410
Collfers, WV 26035
304-748-0014

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

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

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

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

Water Haul off Companies:

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

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

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

Nuverra Environmental Solutions
 11942 Veterans Memorial Highway
 Masontown, WV 26542

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

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

Disposal Locations:

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

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

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

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

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

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

Equipment Transport
 1 Tyler Court
 Carlisle, PA 17015

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

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

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

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

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

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

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

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

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

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

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

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

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

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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WV Department of
Environmental Protection

08/31/2018

4702,05794

HG Energy II Appalachia, LLC

Site Safety Plan

**Riddle 1301 Well Pad
15675 WV Highway 47 W
Burnthouse, Gilmer County, WV**

April 2018: Version 1

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

HG Energy II Appalachia, LLC.

5260 Dupont Road

Parkersburg, WV 26101

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08/31/2018

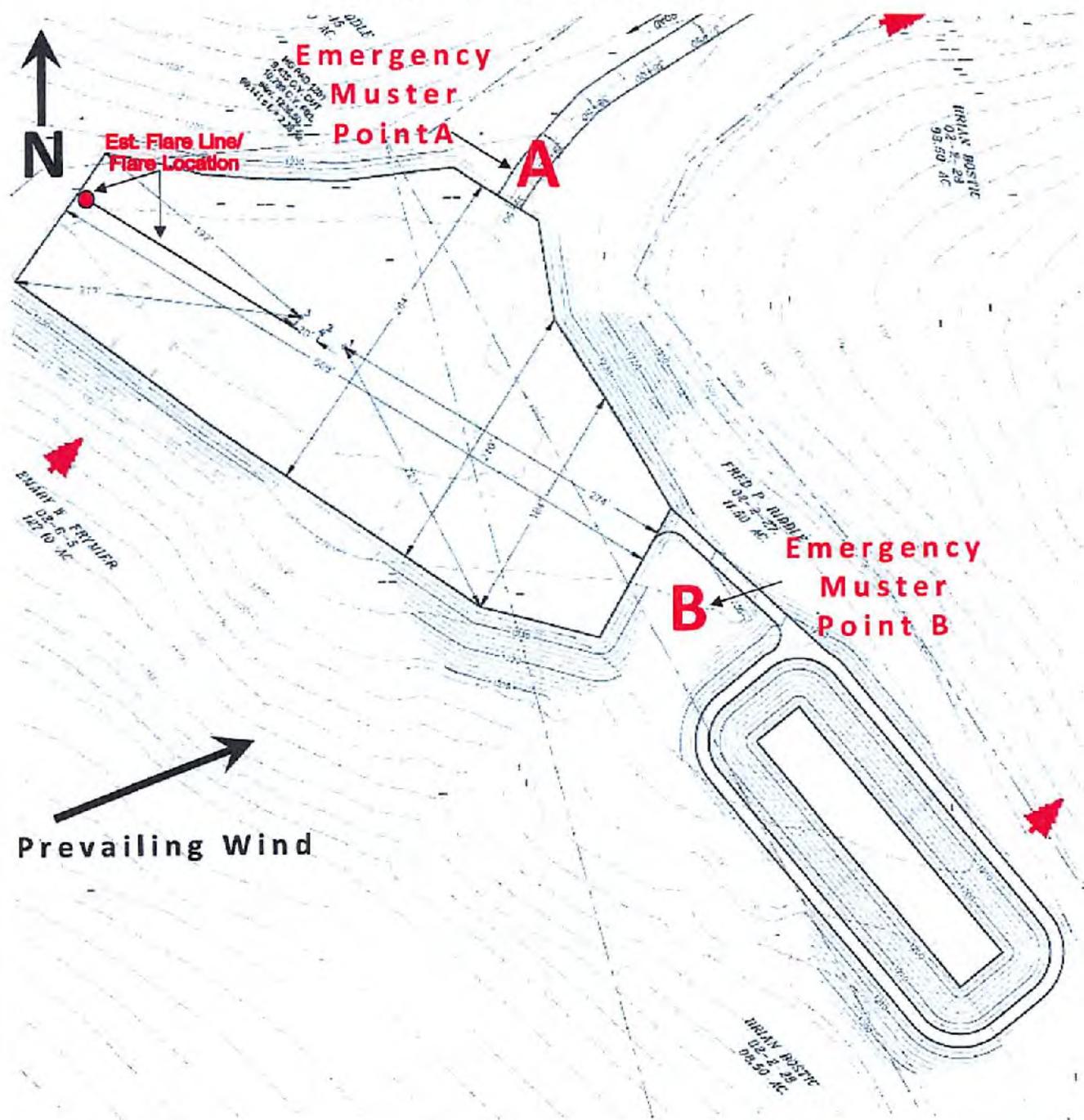
first Responder Agencies

→ depending on location - MHHS
maybe closer ~~than~~ than SWJMH

→ ? Flare operations

wording.

Appendix B: Mapping, Plots, and Siting
Plan View Map – (38-8 5.7.b.1)

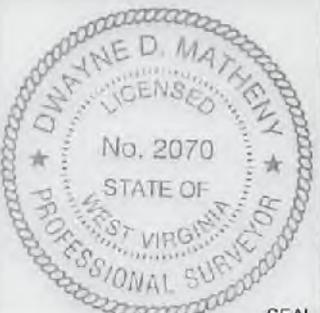


HG Energy II Appalachia, LLC
Well No. Riddle 1301 S-3H

Notes:
 Well No. Riddle 1301 S-3H
 WVSPC NAD 1927
 Top Hole Coordinates
 N: 741,078.49' E: 2,018,303.85'
 Landing Point Coordinates
 N: 739,953.51' E: 2,017,991.26'
 Bottom Hole Coordinates
 N: 730,612.79' E: 2,021,659.92'

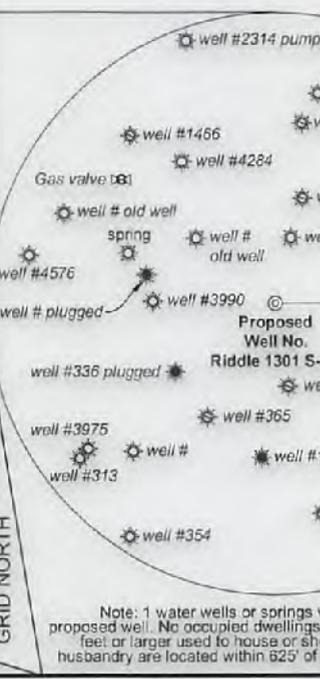
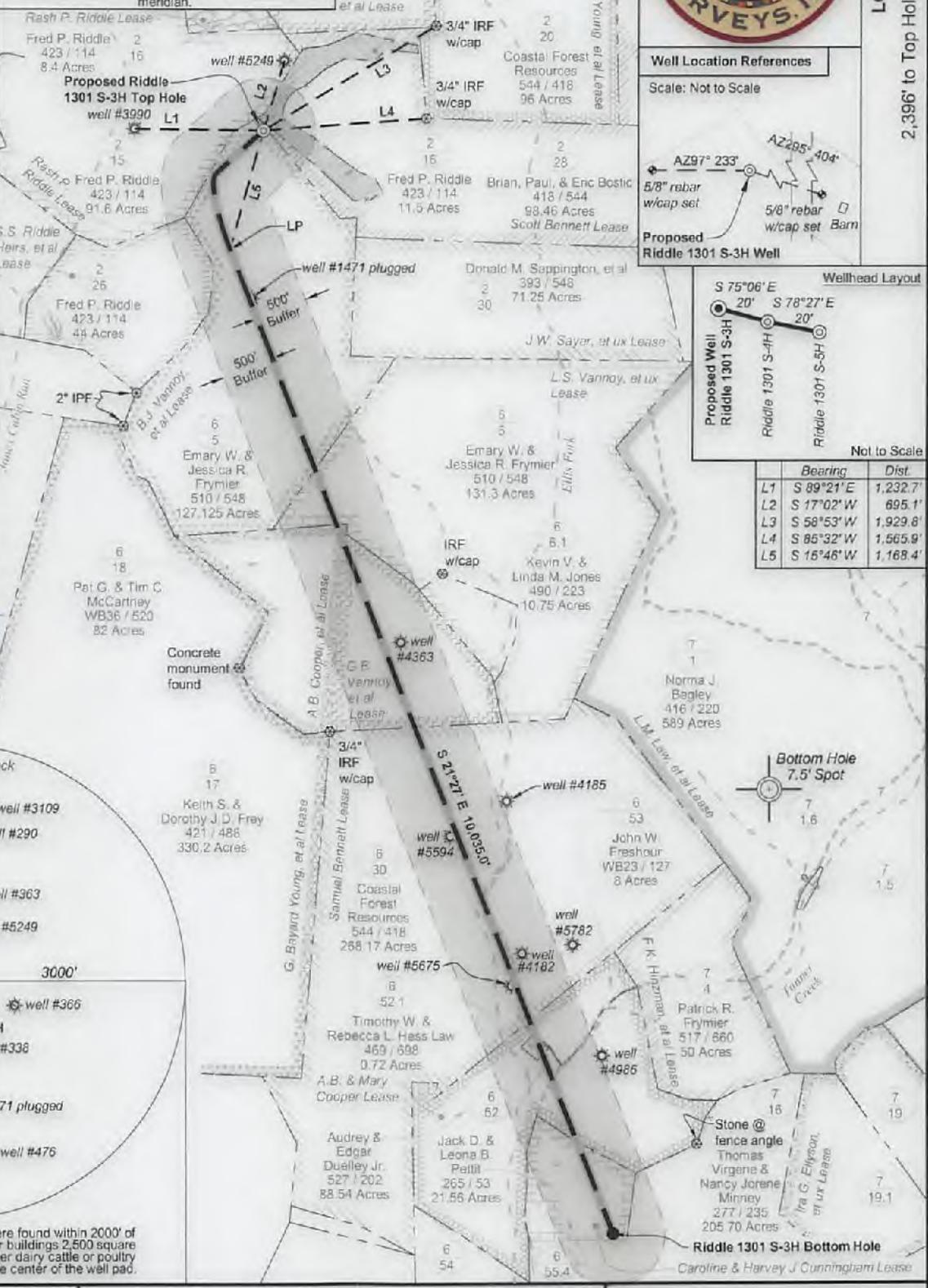
Notes:
 Well No. Riddle 1301 S-3H
 West Virginia Coordinate System of 1927, South Zone
 based upon Differential GPS Measurements.
 Top Hole coordinates Bottom Hole coordinates
 Latitude: 39°02'06.31" Latitude: 39°00'22.84"
 Longitude: 80°56'07.98" Longitude: 80°55'25.63"
UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,320,681.680m N: 4,317,493.181m
 E: 605,692.739m E: 506,613.778m
 Plat orientation and corner and well references
 are based upon the grid north meridian.
 Well location references are based upon the magnetic
 meridian.

- Legend**
- ⊙ Proposed gas well
 - ⊛ Well Reference, as noted
 - ⊙ Monument, as noted
 - ⊙ Existing Well, as noted
 - ⊙ Existing Plugged Well, as noted
 - ⊙ Digitized Well, as noted
 - Creek or Drain
 - Existing Road
 - Surface boundary (approx.)
 - Interior surface tracts (approx.)



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 rules issued and prescribed by the Department of Environmental Protection.

Dwayne D. Matheny
 Dwayne D. Matheny, P.S. 2070



FILE NO: 11-19-D-18
 DRAWING NO: Riddle 1301 S-3H Well Plat
 SCALE: 1" = 1500'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: CORS, Harrisville, WV

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

DATE: May 8 20 18
 OPERATOR'S WELL NO. Riddle 1301 S-3H
 API WELL NO
 47 - 021 - 05714
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: 1,237' WATERSHED: Ellis Fork
 DISTRICT: Dekalb Fred P. Riddle, COUNTY: Putnam
 SURFACE OWNER: Emary W. & Jessica R. Frymier ACREAGE: 127.125 / 11.50
 ROYALTY OWNER: B. J. Vannoy; S. S. Riddle, et al LEASE NO: 260204000 260352000 ACREAGE: 127.125 / 11.50
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ 6,625' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 17,147' MD

WELL OPERATOR: HG Energy II Appalachia, LLC DESIGNATED AGENT: Diane C. White
 ADDRESS: 5260 Dupont Road ADDRESS: 5260 Dupont Road
 Parkersburg, WV 26101 Parkersburg, WV 26101

47 02 05794

**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

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Environmental Protection

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Environmental Protection

HG Energy II Appalachia, LLC
Riddle 1301 S-3H Lease Chains

4702105794

Land Tracking #	DTI Lease Number	HG Lease Number	OLS Number	MRID	Original Lessor	Original Lessee	Agreement Type	Royalty	Book	Page
10	RN071887	250352-000	25465000	02-0006-0005-0000	Deahoe J. Vannoy, by Isaac J. Vannoy, Attorney in Fact, Isaac F. Vannoy and Catherine J. Vannoy, his wife; Janet Vannoy and R.J. Riley, her husband; Paul M. Vannoy and Lucile J. Vannoy, his wife; Anna Lee Jones, Committed to Asa B. Vannoy, incompetent	Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Dominion Transmission, Inc. CNX Gas Company LLC Noble Energy, Inc. Noble Energy, Inc.	Oil And Gas Lease Merger/Name Change Assignment Merger/Name Change Merger/Name Change Sublease Agreement Partial Assignment Assignment Assignment	NOT LESS THAN 1/8	DB 216 DB 229 DB 342 WV SOS WV SOS DB 518 DB 526 DB 551 DB 551	177 286 930 483 540 1 575
21	RN049656	202020-000	254617000	plb 02-0006-0016-0010	A.B. Cooper and May Cooper, his wife	Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Dominion Transmission, Inc. CNX Gas Company LLC Noble Energy, Inc. Noble Energy, Inc.	Oil And Gas Lease Merger/Name Change Assignment Merger/Name Change Merger/Name Change Sublease Agreement Partial Assignment Assignment	NOT LESS THAN 1/8	DB 134 DB 229 DB 342 WV SOS WV SOS DB 518 DB 526 DB 551 DB 551	89 286 930 483 540 1 575
21	RN059931	259951-000	254637000	02-0006-0052-0000, 02-0006-0052-0001, 02-0006-0053-0000	A.B. Cooper and May Cooper, his wife	Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Dominion Transmission, Inc. CNX Gas Company LLC Noble Energy, Inc. Noble Energy, Inc.	Oil And Gas Lease Merger/Name Change Assignment Merger/Name Change Merger/Name Change Sublease Agreement Partial Assignment Assignment	NOT LESS THAN 1/8	DB 163 DB 229 DB 342 WV SOS WV SOS DB 518 DB 526 DB 551 DB 551	89 286 930 483 540 1 575
13.5	RN232290	259804-000	254557000	plb 02-0006-0018-0000	George B. Vannoy and Della Vannoy, his wife R.G. Gillespie The Freehold Oil & Gas Company R.G. Gillespie Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Dominion Transmission, Inc. CNX Gas Company LLC Noble Energy, Inc. Noble Energy, Inc.	R.G. Gillespie The Freehold Oil & Gas Company Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Dominion Transmission, Inc. CNX Gas Company LLC Noble Energy, Inc. Noble Energy, Inc.	Oil And Gas Lease Assignment Assignment Assignment Merger/Name Change Assignment Merger/Name Change Merger/Name Change Sublease Agreement Partial Assignment Assignment Assignment	NOT LESS THAN 1/8	DB 58 DB 76 DB 72 DB 87 DB 229 DB 342 WV SOS WV SOS DB 518 DB 526 DB 551 DB 551	484 188 88 327 286 930 483 540 1 575
14	RN073296	259824-000	254654000	02-0006-0006-0000, 02-0006-0006-0001	L.S. Vannoy and Mary J. Vannoy, his wife R.G. Gillespie The Freehold Oil & Gas Company R.G. Gillespie Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Dominion Transmission, Inc. CNX Gas Company LLC Noble Energy, Inc. Noble Energy, Inc.	Hope Natural Gas Company The Freehold Oil & Gas Company Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Dominion Transmission, Inc. CNX Gas Company LLC Noble Energy, Inc. Noble Energy, Inc.	Oil And Gas Lease Assignment Assignment Assignment Merger/Name Change Assignment Merger/Name Change Merger/Name Change Sublease Agreement Partial Assignment Assignment Assignment	NOT LESS THAN 1/8	DB 58 DB 76 DB 72 DB 87 DB 229 DB 342 WV SOS WV SOS DB 518 DB 526 DB 551 DB 551	482 188 88 327 286 930 483 540 1 575
55	TBD	TBD	254620000	02-0006-2055-2004	Harvey J. Cunningham	Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Dominion Transmission, Inc. CNX Gas Company LLC Noble Energy, Inc. Noble Energy, Inc.	Oil And Gas Lease Assignment Assignment Assignment Assignment Partial Assignment Assignment Assignment	LESS THAN 1/8	DB 558	509
16	RN5930*	259848-000	254814000	02-06-0030-0000	Samuel Bennett, widower Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Dominion Transmission, Inc. Consol Energy Holdings LLC, XVI Consol Gas Company	Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Dominion Transmission, Inc. Consol Energy Holdings LLC, XVI Consol Gas Company CNX Gas Company, LLC	Oil And Gas Lease Merger/Name Change Assignment Assignment Merger/Name Change Assignment Merger/Name Change Merger/Name Change	NOT LESS THAN 1/8	DB 103 DB 229 DB 342 WV SOS WV SOS DB 493 WV SOS DB 459	504 256 930 301 301 413

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Environmental Protection

Land Tracking #	DTI Lease Number	HG Lease Number	QLS Number	M/P/D	Original Lessor	Original Lessee	Agreement Type	Royalty	Book	Page
					CNA Gas Company LLC	Noble Energy, Inc.	Partial Assignment		DB 525	540
					CNA Gas Company LLC	Noble Energy, Inc.	Assignment		DB 551	1
					Noble Energy, Inc.	HG Energy II Appalachia LLC	Assignment		DB 551	575

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WV Department of
Environmental Protection

08/31/2018



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

4702 05794

May 21, 2018

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

RE: Drilling Under Roads – Riddle 1301 S-3H
Dekalb District, Gilmer 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

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Office of Oil and Gas
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WV Department of
Environmental Protection

08/31/2018

WW-6A
(9-13)

API NO. 47- 4702105794
OPERATOR WELL NO. Riddle 1301 S-3H
Well Pad Name: Riddle 1301

**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: 7/17/2018 **Date Permit Application Filed:** 5/21/18

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

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

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

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

SURFACE OWNER(s)

Name: Fred Riddle
Address: 12579 Staunton Tpk
Smithville, WV 26178

Name: Paul & Brian Bostic
Address: 840 Irish Heights Drive
Summersville, WV 26851

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

Name: Shane Gregg
Address: 173 Wright Hollow
Auburn, WV 26325

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: Fred Riddle
Address: 12579 Staunton Tpk
Smithville, WV 26178

COAL OWNER OR LESSEE

Name: NA
Address: _____

COAL OPERATOR

Name: NA
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: NA
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: Dominion Energy Transmission
Address: 2397 Davisson Run Road
Clarksburg, WV 26301

*Please attach additional forms if necessary

08/31/2018

WW-6A
(8-13)

API NO. 47- _____
 OPERATOR WELL NO. Riddle 1301 S-3H
 Well Pad Name: Riddle 1301

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/office-of-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 one 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

08/31/2018

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

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

Date of Notice: 5/17/2018 Date Permit Application Filed: 5/21/18

Notice of:

- PERMIT FOR ANY WELL WORK CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

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

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

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

SURFACE OWNER(s)
Name: Fred Riddle
Address: 12579 Staunton Tpke
Smithville, WV 26178

Name: Paul & Brian Bostic
Address: 840 Irish Heights Drive
Summersville, WV 26651

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Shane Gragg
Address: 173 Wright Hollow
Auburn, WV 26325

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)
Name: Fred Riddle
Address: 12579 Staunton Tpke
Smithville, WV 26178

COAL OWNER OR LESSEE
Name: NA
Address: _____

COAL OPERATOR
Name: NA
Address: _____

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

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

*Please attach additional forms if necessary

WW-6A
(8-13)

4702 + 05794
API NO. 47-
OPERATOR WELL NO. Riddle 1301 S-3H
Well Pad Name: Riddle 1301

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

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

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

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Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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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.**

WW-6A
(8-13)

4702105794
API NO. 47- _____
OPERATOR WELL NO. Riddle 1301 S-3H
Well Pad Name: Riddle 1301

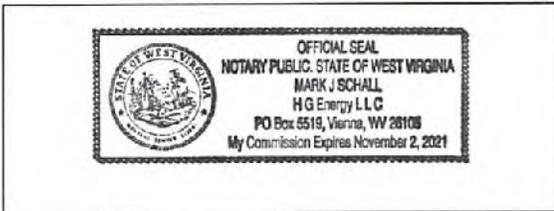
Notice is hereby given by:

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

Address: 5260 Dupont Road
Facsimile: _____

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 17th day of May, 2018.

Mark J Schall

Notary Public

My Commission Expires 11/2/2021

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WW-6A
(8-13)

Riddle 1301 S-3H

Page 1 Continued

Additional Surface Owners to be Noticed:

Emary Frymier
840 Ellis Fork Road
Coxs Mills, WV 26342

Karen Smittle
12 Turtle Creek Drive
Morgantown, WV 26505

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4702 05794

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: 4-27-18 Date of Planned Entry: 5-04-18

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: Fred P Riddle
 Address: 12579 Staunton Tpke
Smithville, WV 26178

Name: Paul & Brian Bostic
 Address: 840 Irish Heights Drive
Summersville, WV 26851

Name: Emary Frymier
 Address: 840 Ellis Fork Road
Coxs Mills, WV 26342

COAL OWNER OR LESSEE

Name: NA
Address: _____

MINERAL OWNER(s)

* Name: Fred P Riddle
 Address: HC 68, Box 27
Smithville, WV 26178

*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>39.035172</u>
County: <u>Harrison</u>	Public Road Access: <u>80.935381</u>
District: <u>Union</u>	Watershed: <u>Middle West Fork Creek</u>
Quadrangle: <u>West Milford 7.5'</u>	Generally used farm name: <u>Danny Lee & Alicia A Stichel</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 5th 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.

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Notice is hereby given by:

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

Address: 5280 Dupont Road
Parkersburg, WV 26101
 Facsimile: 304-863-5172

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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.

08/31/2018

* Listed twice on the WW-6A3, sent one certified notice

WW-6A3(1-12)Riddle 1301 S-3HPage 2 of 3Surface Owner

Karen Smittle
12 Turtle Creek Drive
Morgantown, WV 27508

Mineral Owners

Theodore N Riddle
2173 Lake Washington Road
Washington, WV 26101

Douglas Edward Riddle
3581 Sweetwater Circle
Corona, CA92882

Don E Riddle
2173 Lake Washington Road
Washington, WV 26181

Anita J Riddle Scott
2173 Lake Washington Road
Washington, WV 26181

Trustees of Diocese of Episcopal
Church of WV
PO Box 1508
Parkersburg, WV 26101

Robert W. Bickel
407 Chester Drive
Moorestown, NJ 08057

Mary Ellen Bickel Cross
616 Newbern Court
Burlington, NC 27215

Emily Bukey Schneider
425 Glencrest Drive
Solana, CA 92075

Mineral Owners

Jack E & Brenda Kay McCartney
786 Newberne Rd
Coxs Mills, WV 26342

* Emary W. Frymier & Jessica R. Frymier
840 Ellis Rork Road
Coxs Mills, WV 26342

* Karen Smittle
12 Turtle Creek Drive
Morgantown, WV 26508

John Patterson
23 Meadowbrook Road
Williamsville, NY 14221

Michael E. Patterson
4639 Farmington Court
Indianapolis, IN 46254

Sara E. Eloge
3132 Sunset Drive
Charlotte, NC 28209

Michael C. Patterson
3136 Selwyn Avenue
Charlotte, NC28209

Betty B. Takacs
2771 East West Lane
Quinton, VA 23141

* Listed twice on WW-6A3 - sent one certified notice

08/31/2018

WW-6A3(1-12)Riddle 1301 S-3HPage 3 of 3Mineral Owners

Michael J Algeo
173 W Gregory Road
Central Point, OR 97502

John William Currey II
4 Cherryridge Drive
Shinnston, WV 26431

Marcia Lynn Jones
4 Cherryridge Drive
Shinnston, WV 26431

Linda LaVaughn Osbourn
4 Cherryridge Drive
Shinnston, WV 26431

Melissa Ann Rice
4 Cherryridge Drive
Shinnston, WV 26431

Jack E & Brenda Kay McCartney
786 Newberne Road
Coxs Mills, WV 26342

Kevin V & Linda M Jones
PO Box 430
Grantsville, WV 26147

Rodney C. Windom
202 E. Main St
Harrisville, WV 26362

Lynn B. Cooper Jr. & Patty J. Cooper
Joint Tenants with Right of Survivorship
210 Castle Springs Rd
Anderson, SC 29621

Mineral Owners

Geneva M Anderson, Trustee
1509 Bentwood Drive
Sun City Center, FL 33573

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4702 05794

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

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

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

Date of Notice: 05/09/2018 **Date Permit Application Filed:** 05/15/2018

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

HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

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

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

Name: Fred Riddle
Address: 12579 Staunton Tpke
Smithville, WV 26178

Name: Paul & Brian Bostic
Address: 840 Irish Heights Drive
Summersville, WV 26651

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: 505592.7
County: Gilmer Northing: 4320681.7
District: Dekalb Public Road Access: SR 47
Quadrangle: Burnt House Generally used farm name: Fred P. Riddle
Watershed: Ellis 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: Diana White *Diane White*
Address: 5260 Dupont Road
Parkersburg, WV 26101
Telephone: 304-420-1119
Email: dwhite@hgenergyllc.com
Facsimile: 304-420-1119

Oil and Gas Privacy Notice:

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

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**WW-6A4
(1/12)**

Riddle 1301 S-3H

Page 1 Continued

Surface Owners to be Noticed Continued:

Emary Frymier
840 Ellis Fork Road
Coxs Mills, WV 26342

Karen Smittle
12 Turtle Creek Drive
Morgantown, WV 26104

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Environmental Protection 05/31/2018

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

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

Date of Notice: 05/10/2018 Date Permit Application Filed: 05/15/2018

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

CERTIFIED MAIL RETURN RECEIPT REQUESTED HAND 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: Fred Riddle
Address: 12579 Staunton Tpke
Smithville, WV 26178

Name: Paul & Brian Bostic
Address: 840 Irish Heights Drive
Summersville, WV 26651

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: West Virginia UTM NAD 83 Easting: 505592.7
County: Gilmer Northing: 4320691.7
District: Dekalb Public Road Access: SR 47
Quadrangle: Burnt House Generally used farm name: Fred P. Riddle
Watershed: Ellis Fork

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 *Suzanne White*
Telephone: 304-420-1119
Email: cwhite@hgenergyllc.com

Address: 5260 Dupont Road
Parkersburg, WV 26105
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.

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WW-6A5
(1/12)

Riddle 1301 S-3H

Page 1 Continued

Surface Owners to be Noticed Continued:

Emary Frymier
840 Ellis Fork Road
Coxs Mills, WV 26342

Karen Smittle
12 Turtle Creek Drive
Morgantown, WV 26104

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

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

May 18, 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 Riddle 1301 Well Pad, Ritchie County
 S-3H Well Site

Dear Mr. Martin,

This well site will be accessed from Permit #06-2018-0340 issued to HG Energy II Appalachia for access to the State Road for a well site located off of WV 47 in Ritchie County.

The operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton, P.E.
 Regional Maintenance Engineer
 Central Office O&G Coordinator

Cc: Diane C. White
 HG Energy II, LLC
 CH, OM, D-3
 File

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 Office of Oil and Gas
 MAY 24 2018
 WV Department of
 Environmental Protection

4702 05794

List of Frac Additives by Chemical Name and CAS #**Riddle 1301 Well Pad (S-3H, S-4H, S-5H)**

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

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Office of Oil and Gas

MAY 24 2018

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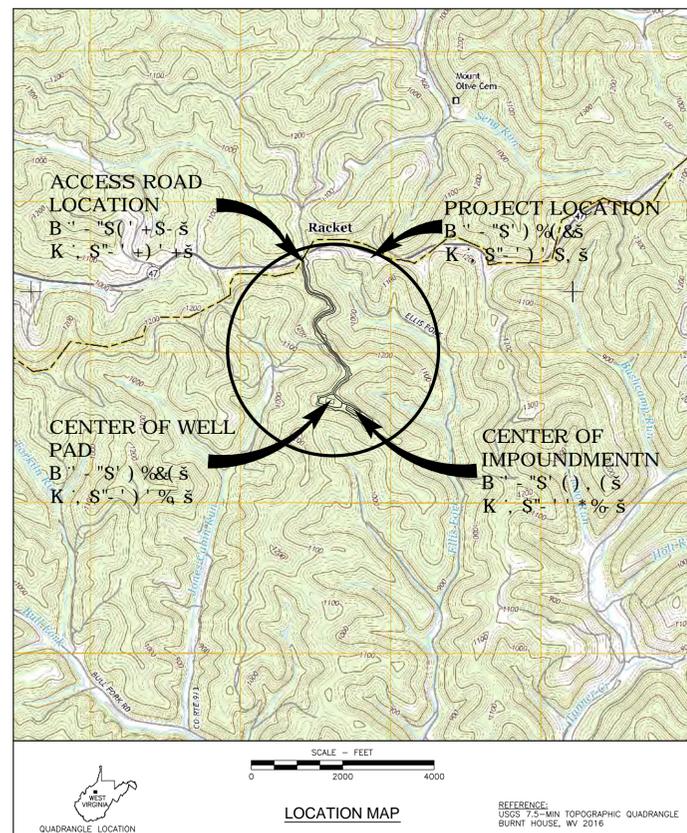
CONSTRUCTION IMPROVEMENT PLANS WITH EROSION AND SEDIMENT CONTROLS HG WELL PAD 1301



DeKALB DISTRICT GILMER COUNTY WEST VIRGINIA

CONSTRUCTION SEQUENCE

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



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

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

Estimated Gross Material Balance (CY)			
Final Development - Gravel Option			
	Cut	Fill	Stockpile
Pad	12,620	7,880	4,740
Road	7,280	19,890	-12,610
Impoundment	24,630	2,020	22,610
Totals	44,530	29,790	14,740
Soil Adjustment for Aggregate Import:			
Pad			1,290
Total Site Balance:			16,030
Stripped Topsoil (Limit of Disturbance)			7,462
Est. Swell Factor (20%)			1,492
Est. Topsoil Stockpile Volume (Loose CY)			8,954
Minimum Total Stockpile Capacity Required (C.Y.)			24,984
Notes:			
1. Material balance for est. gross earthwork quantities only.			
2. Topsoil est. volume based on 12 inches average depth.			
3. Material balance and aggregate quantities based on estimates and may not be representative of actual quantities.			
4. Estimates do not reflect contractor pay volumes.			
Estimated Gravel Quantities (Placed CY)			
		Access Road	Pad
Gravel Quantities	8" Soil Cement	2,055	2,280
	3" Crusher Run	--	850
Top Coat Chip & Seal (Placed SY)		9,210 s.y.	--
Estimated Compost Filter Sock Length (LF)		4,442	2,423
Estimated Access Road Limit of Disturbance (Acres)			8.720
Estimated Well Pad Limit of Disturbance (Acres)			3.833
Estimated Impoundment & Stockpile Limit of Disturbance (Acres)			3.323
Estimated Total Limit of Disturbance (Acres)			15.876

SHT. NO.	SHEET TITLE
1	TITLE SHEET
2-5	SITE LAYOUT PLANS
6	PAD & IMPOUNDMENT SECTIONS
7-9	ACCESS ROAD SECTIONS
10-11	GENERAL NOTES
12-15	DETAILS
16	RESTORATION PLAN
17	PROPERTY MAP

	LATITUDE	LONGITUDE
ACCESS ROAD ENTRANCE	N 39.043709	W 80.937537

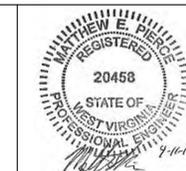
WELL #	LATITUDE	LONGITUDE
3H	N 39.035172	W 80.935381
4H	N 39.035158	W 80.935314
5H	N 39.035147	W 80.935244

RECORD OWNER	RECORD LOT #	RECORD AREA OF LOT	AREA WITHIN LOD
JOY E. GRAGG	02-2-2	75.88 AC.	6.335 AC.
BRIAN, PAUL & ERIC BOSTIC	02-2-28	98.46 AC.	0.825 AC.
FRED P. RIDDLE	02-2-16	8.40 AC.	0.418 AC.
FRED P. RIDDLE	02-2-15	91.60 AC.	0.649 AC.
FRED P. RIDDLE	02-2-27	11.50 AC.	5.818 AC.
EMARY W. & JESSICA R. FRYMIER	02-6-5	127.125 AC.	1.831 AC.
TOTAL LIMIT OF DISTURBANCE			15.876 AC.

08/31/2018

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REVISION	DATE	DESCRIPTION
3	06/22/2018	MOUNTABLE BERM REVISIONS PER DEP COMMENTS
2	06/14/2018	REVISIONS PER DEP COMMENTS
1	05/04/2018	REVISE PROPERTY LINES & OWNERS



TITLE SHEET
HG WELL PAD 1301
DeKALB DISTRICT
GILMER COUNTY, WEST VIRGINIA

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

APPROVED	MEP 04/11/2018
CHECKED	MEP 04/05/2018
DRAWN	MFR 04/04/2018
PROJECT No.	4000-PA007575

DRAWING NUMBER
PA007575-001
SHEET 1

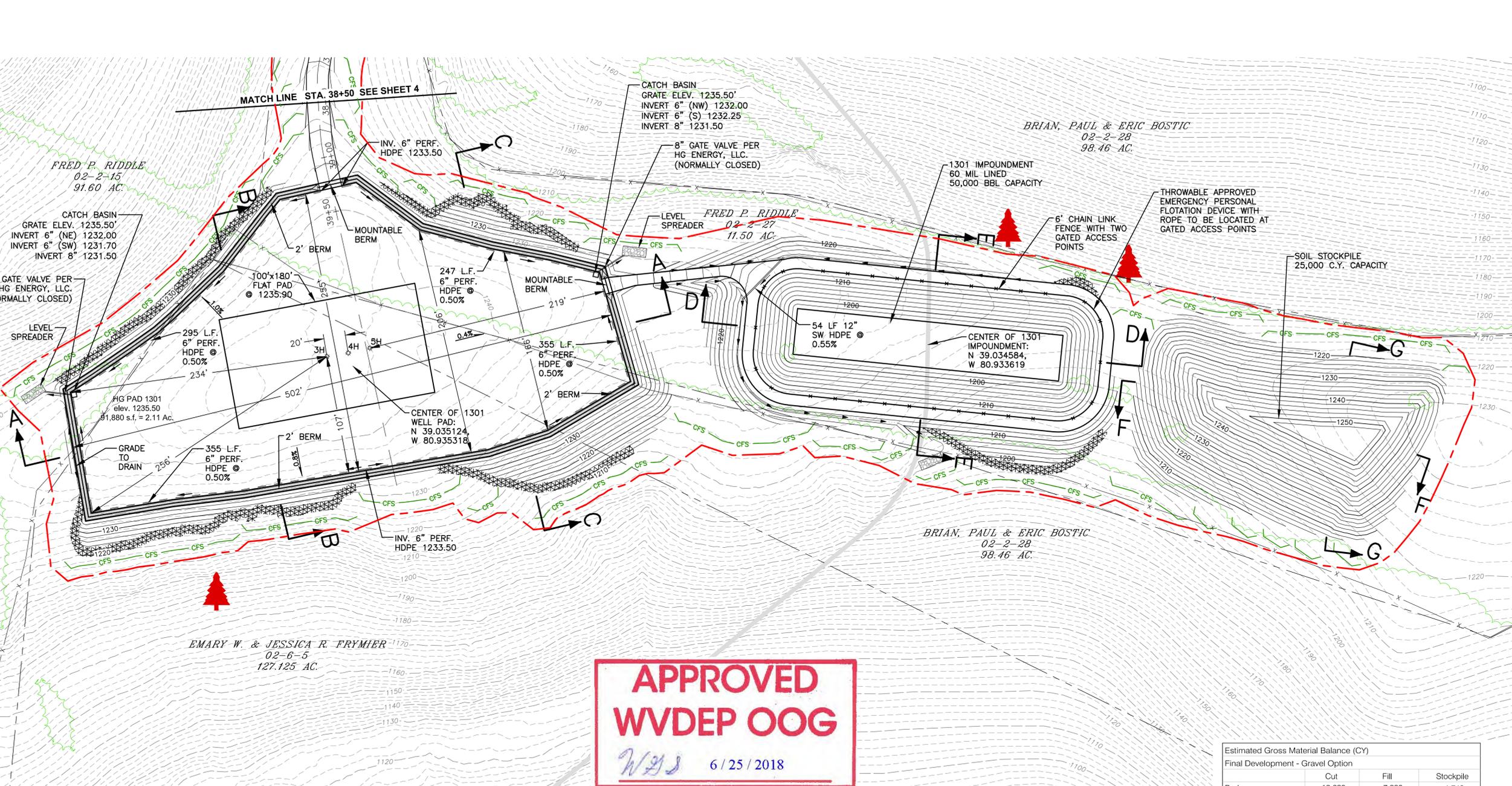


CALL BEFORE
YOU DIG!

Dial 811 or
800.245.4848
Miss Utility of West Virginia

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

S:\PROJECT FILES\4000-PA007575 PAD 1301 DEP REVISIONS.DWG,6/22/2018 11:59 AM



LEGEND

- ROCK CHECK DAM
- RIPRAP APRON
- ACCESS ROAD/PAD CHANNEL
- CFS COMPOST FILTER SOCK 8" UNLESS OTHERWISE NOTED
- 3CFS STACKED COMPOST FILTER SOCK 8"
- APPROXIMATE LIMITS OF DISTURBANCE
- APPROXIMATE PROPERTY LINE
- EXISTING FENCE LINE
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED FINAL GRADE INDEX CONTOUR
- PROPOSED FINAL GRADE INTERMEDIATE CONTOUR
- LIMITS OF BLUE MOUNTAIN MAPPING
- EXISTING TREE LINE
- POTENTIAL ROOST TREE
- SECTION (SEE SHEET 6)
- TOE BENCH (SEE DETAIL)

- WEST VIRGINIA GENERAL NOTES:**
- REFERENCE THIS SHEET WITH THE CONSTRUCTION NOTES AND DETAILS.
 - CONTRACTOR SHALL CONTACT WEST VIRGINIA UTILITIES PROTECTION SERVICES (811) A MINIMUM OF 3 DAYS PRIOR TO EXCAVATION WORK. UTILITIES MUST BE IDENTIFIED AND EITHER RELOCATED OR PROTECTED BY CONTRACTOR PRIOR TO BEGINNING WORK AT THE SITE.
 - SITE SHALL BE CONSTRUCTED IN ACCORDANCE WITH WELL DRILLING PERMIT. CONTRACTOR RESPONSIBLE TO OBTAIN ALL OTHER ANCILLARY PERMITS/APPROVALS REQUIRED TO CONSTRUCT SITE INCLUDING BUT NOT LIMITED TO FEDERAL, STATE, AND LOCAL REQUIREMENTS.
 - NO GEOTECHNICAL OR SLOPE STABILITY ANALYSIS WAS PERFORMED FOR THIS SITE. CONTRACTOR IS RESPONSIBLE TO CONSTRUCT PROPER TOE AND BONDING MEASURES BASED ON FIELD CONDITIONS TO PREPARE SURFACES FOR FILL PLACEMENT ON STEEP SLOPES. PENN E&R IS NOT RESPONSIBLE FOR SLIPS, SLIDES, OR EARTH MOVEMENT RESULTING FROM CONSTRUCTION.
 - ESTABLISH EROSION AND SEDIMENTATION CONTROL BMPs PRIOR TO EARTHWORK. SITE CONSTRUCTION SHALL FOLLOW WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL DATED MAY 2012.
 - CLEAR AND GRUB WORK AREA, REMOVE AND STOCKPILE AVAILABLE TOPSOIL FROM LIMIT OF DISTURBANCE TO A LOCATION DESIGNATED BY HG ENERGY II APPALACHIA, LLC.
 - NO EMBANKMENT FILL SHALL BE PLACED ON FROZEN MATERIAL. FILL MATERIAL SHALL BE FREE OF ORGANICS, LARGE ROCKS, FROZEN SOIL OR OTHER OBJECTIONABLE MATERIAL.
 - CUT/FILL SLOPES SHALL BE CONSTRUCTED TO A MAXIMUM SLOPE OF 2H:1V UNLESS NOTED OTHERWISE.
 - FILL MATERIAL SHALL BE PLACED IN LIFTS OR LAYERS OVER THE LENGTH OF THE FILL. LIFT THICKNESS OF THE SOIL SHALL BE AS THIN AS THE SUITABLE RANDOM EXCAVATED MATERIAL WILL PERMIT, TYPICALLY, 6-12 INCHES THICK. THE SIZE OF ROCK LIFTS SHALL NOT EXCEED 36 INCHES. THE ROCK SHALL NOT BE GREATER IN ANY DIMENSION THAN 36 INCHES. COMPACTION SHALL BE OBTAINED BY COMPACTION EQUIPMENT, SHEEP'S FOOT OR PAD ROLLER, DEPENDING ON MATERIAL, WITH COMPACTION TO VISIBLE NON-MOVEMENT OF THE EMBANKMENT MATERIAL. COMPACTION EFFORT SHALL NOT EXCEED OPTIMUM MOISTURE LIMITS. EACH LIFT SHALL BE COMPACTED TO A STANDARD PROCTOR DENSITY OF AT LEAST 95% BEFORE BEGINNING THE NEXT LIFT. QC TESTING SHALL BE PERFORMED AT A RATE OF 2 TESTS/ACRE/LIFT.
 - CONTRACTOR SHALL CONSTRUCT ACCESS ROAD IN ACCORDANCE WITH DETAILS PROVIDED. ADDITIONAL COVER MATERIAL PLACEMENT REQUIRED IN AREA OF UTILITY LINES.
 - CONTRACTOR SHALL COORDINATE MATERIAL MANAGEMENT (EXCESS CUT/FILL, TOPSOIL STOCKPILES, GRAVEL SOURCING) WITH HG ENERGY, LLC PRIOR TO MOBILIZATION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER EROSION AND SEDIMENT CONTROLS, BOTH ON SITE AND OFF SITE.
 - ALL SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS ARE STABILIZED AND THE VEGETATIVE GROUND COVER HAS ACHIEVED A UNIFORM 70% GROWTH. ANY AREAS NOT ACHIEVING A 70% VEGETATIVE COVER SHALL BE RESEEDED AND MULCHED WITHIN 24 HOURS OF DETECTION.
 - SECONDARY CONTAINMENT SHALL BE PROVIDED DURING DRILLING PROCESS. A LINER AND MAT SYSTEM WITH BERM SHALL BE INSTALLED PRIOR TO DRILLING AND WATER INSIDE SECONDARY CONTAINMENT SHALL BE DISPOSED OFFSITE IN ACCORDANCE WITH WV REGULATIONS.
- REFERENCE:**
- TOPOGRAPHY OBTAINED FROM BLUE MOUNTAIN AERIAL MAPPING ON 10/19/2017. DATE OF PHOTOGRAPHY 03/18/2016.
 - WETLANDS AND STREAMS ARE SHOWN BASED ON FIELD LOCATIONS DELINEATED BY AJAY ENVIRONMENTAL CONSULTING ON 02/26/2018, AND LOCATED USING GPS FIELD LOCATION METHODS THAT IS POST-PROCESSED TO SUB-METER ACCURACY (TYPICAL).
 - PROPERTY INFORMATION PROVIDED BY HG ENERGY II APPALACHIA, LLC

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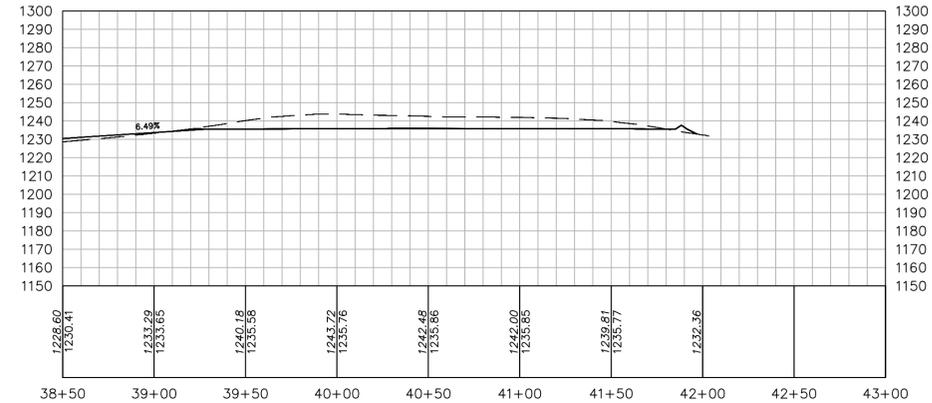
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4H	N 39°02'06.57"	W 80°56'07.13"
5H	N 39°02'06.53"	W 80°56'06.88"



20458

STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

SCALE - FEET
0 50 100 150

SITE LAYOUT
HG WELL PAD 1301
DeKALB DISTRICT
GILMER COUNTY, WEST VIRGINIA

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

APPROVED MEP 04/11/2018
CHECKED MEP 04/05/2018
DRAWN MFR 04/04/2018
PROJECT No. 4000-PA007575

DRAWING NUMBER
PA007575-001
SHEET 5

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