



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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Tuesday, November 9, 2021
PERMIT MODIFICATION APPROVAL
Horizontal 6A / Re-Work

HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD

PARKERSBURG, WV 26101

Re: Permit Modification Approval for MND 1 AHS
47-051-01810-00-00

Lateral Extension

HG ENERGY II APPALACHIA, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: MND 1 AHS
Farm Name: CNX GAS COMPANY, LLC ET AL
U.S. WELL NUMBER: 47-051-01810-00-00
Horizontal 6A Re-Work
Date Modification Issued: 11/9/2021

Promoting a healthy environment.

11/12/2021



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

October 19, 2021

WV DEP
Division of Oil & Gas
Attn: Cragin Blevins
601 57th Street
Charleston, West Virginia 25304

*CK# 028708
\$5,000*

RE: MND1 AHS Request for Permit Revision – (47-051-01810)
Clay District, Marshall County, West Virginia
Request for Modification Due to Acquiring Additional Leases

Dear Mr. Blevins -

Per our discussions, enclosed are revised forms (survey plat, mylar, WW-6B, casing schematic, and WW6A-1) for the requested MND1 AHS well work permit revision. Also included is a check to cover the cost of requesting a modification for an existing permit. We ask the permit be modified to reflect additional leases acquired to lengthen the lateral.

Please let me know if you have any questions or require additional information. I can be reached at (304) 420-1119 or dwhite@hgenergyllc.com.

Very truly yours,

Diane White

Diane C. White

Enclosures

cc: Barry Stollings – DEP State Inspector

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Environmental Protection

11/12/2021

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

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

2) Operator's Well Number: MND1 AHS Well Pad Name: MND1

3) Farm Name/Surface Owner: Murray Energy Corp Public Road Access: County Highway 88/8

4) Elevation, current ground: 1150' Elevation, proposed post-construction: 1150' (pad constructed)

5) Well Type (a) Gas X Oil Underground Storage
Other

(b) If Gas Shallow X Deep
Horizontal X

6) Existing Pad: Yes or No Yes

MSDK 10/25/2021

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus 6262' - 6309', 55' Thick, 4204 psi

8) Proposed Total Vertical Depth: 6,290'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 15,959'

11) Proposed Horizontal Leg Length: 8,426'

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OCT 29 2021

12) Approximate Fresh Water Strata Depths: 538', 801', 898', 947'

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

WV Department of
Environmental Protection

14) Approximate Saltwater Depths: None

15) Approximate Coal Seam Depths: 704' - 709'

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

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

(a) If Yes, provide Mine Info: Name: Wells are located in abandoned area of McElroy Mine
Depth: 692' to seam base
Seam: Pittsburgh #8
Owner: Consol Mining Company, LLC

WW-6B
(04/15)

API NO. 47- 051 - 01810
 OPERATOR WELL NO. MND1 AHS
 Well Pad Name: MND1

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"	New	J-55	94	40' "Already grouted in"	40'	CTS
Fresh Water	13 3/8"	New	J-55 BTC	54.5	1100'	1100'	40% excess yield = 1.18, CTS
Coal							
Intermediate	9 5/8"	New	J-55 BTC	40	2600'	2600'	40% excess, Yield = 1.2, CTS
Production	5 1/2"	New	P-110 HP	20	15959'	15959'	10% excess, yield = 1.34, CTS
Tubing							
Liners							

MDIC 10/25/2021

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"	26"	0.438	2110		Type 1, Class A	CTS
Fresh Water	13 3/8"	17.5"	0.380	2730		Type 1, Class A	40% excess, yield = 1.18, C
Coal							
Intermediate	9 5/8"	12 1/4"	0.395	3950		Type 1, Class A	40% excess, yield = 1.2, C
Production	5 1/2"	8 1/2"	0.361	14360	10000	Type 1, Class A	10% excess, yield = 1.34, C
Tubing							
Liners							

PACKERS

Kind:				RECEIVED Office of Oil and Gas
Sizes:				OCT 29 2021
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 6,290 feet. Drill horizontal leg to estimated 8426' lateral length, 15,959' TMD. Hydraulically fracture and stimulate and be capable of producing from the Marcellus Formation. Should we encounter an unanticipated void in the coal, we will install a minimum of 20' of casing below the void but not more than 100' below the void, set a basket and grout to surface.

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

The stimulation will be 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 10,000 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 9.0 (already built)

22) Area to be disturbed for well pad only, less access road (acres): 7.6 (already built)

23) Describe centralizer placement for each casing string:

Conductor - N/A
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.

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

Conductor - Already grouted in
Surface Casing - *15.6 ppg Class A Neat 94#s/40% Excess/Yield=1.18 / CTS*
Intermediate Casing - *15.6 ppg Class A 94#s/1% Calcium BWOC - 40% Excess/Yield=1.2 / CTS*
Production Casing - *Class A 14.8 ppg/Yield 1.34D255 - 0.4% BWOB Fluid Loss/D198 - 0.55% BWOB Retarder/D047 - 0.02 gal / sack Anil Foam/D208 - 0.05% BWOB Viscosifier/10% Excess*

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.

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*Note: Attach additional sheets as needed.



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MND1AHS
Marcellus Shale Horizontal
Marshall County, WV

Ground Elevation		1150'	MND1AHS SHL		494217.95N 1642179.94E
Azm		325°	MND1AHS LP		495763.91N 1644154.38E
WELLBORE DIAGRAM			MND1AHS BHL		502664.21N 1639322.77E

HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS
26"	20" 94# J-55	Conductor	0	40	AIR	*Already Grouted in*	N/A	Once at casing setting depth, ensure hole is clean at TD	Conductor casing = 0.438" wall thickness Burst=2110 psi
		Conductor already set							
17.5"	13-3/8" 54.5# J-55 BTC	Fresh Water	538', 801'	898', 947'	AIR	15.6 ppg Class A Neat 94#/sk 40% Excess Yield=1.13 / CTS	Bow Springs (over collars) on first 2 joints then every third joint to 100' from surface	Circulate & condition @ TD w/ Air. R/H 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.	Surface casing = 0.380" wall thickness Burst=2730 psi
		Surface Casing	0	1100					
		Coal(s)	704'-709'						
12.25"	9-5/8" 40# J-55 BTC	Big Lime / Big Injun	1742' / 1832'	1832' / 1922'	AIR	15.6 ppg Class A 94#/sk 1% Calcium BWCC - 40% Excess Yield=1.2 / CTS	Bow Springs (over collars) on first 12 joints, then every third joint to 100' from surface	Circulate & condition @ TD w/ Air. R/H 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 = 0.395" wall thickness Burst=3950 psi
		Pecono / Price	1922	2075					
		5th Sand / Weir	2164	2177					
		Intermediate Casing	0	2600					
8.75" Vertical		Speechey	3369	3302	AIR and/or 9.0ppg SOBM		Run 1 spiral centralizer every 5 joints from the top of the curve to surface.		
		Java	4778	4889					
		Pipe Creek	5015	5102					
8.75" / 8.5" Curve	5-1/2" 20# P-110 HP CDC HTQ	Angola	4978	5200	Air then 11.5ppg- 12.5ppg SOBM	Class A 14.8 ppg Yield 1.34 D255 - 0.4% BWOB Fluid Loss D198 - 0.55% BWOB Retarder D047 - 0.02 gal / sack Anti Foam D208 - 0.05% BWOB Viscosifier 10% Excess	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 = 0.361" wall thickness Burst=14,360 psi Note: Actual centralizer schedules may be changed due to hole conditions
		Rheinstreet	5719	6002					
		Cashaqua	6002	6075					
		Middlesex	6075	6104					
		West River	6104	6168					
		Burkett	6196	6187					
		Tully	6187	6222					
8.5" Lateral		Hamilton	6222	6282	11.5ppg- 12.5ppg SOBM				
		Marcellus	6262	6309					
		TMD / TVD	15959	6290					
		Onondaga	6309						

LP @ 6290' TVD / 7633' MD
 8.5" Hole - Cemented Long String
 5-1/2" 20# P-110 HP CDC HTQ
 +/-8426' ft Lateral
 TD @ +/-6290' TVD +/-15959' MD

X=centralizers

6,870' to Top Hole

39° 52' 30"

9,844' to Bottom Hole

725' to Bottom Hole
80° 45' 00"

9,129' to Top Hole

WELL: MND1 AHS Coordinates

WV SPC North (NAD 27)
SURFACE LOCATION
N - 494,217.9
E - 1,642,179.9

LANDING POINT
N - 495,793.9
E - 1,644,154.4

BOTTOM HOLE
N - 502,684.2
E - 1,639,322.8

UTM NAD 83 (mtr)
SURFACE LOCATION
N - 4,411,134.3
E - 519,309.0

BOTTOM HOLE
N - 4,413,692.9
E - 518,395.6

LAT/LONG (NAD 83)
SURFACE LOCATION
39.850009°
80.774286°

BOTTOM HOLE
39.873082°
80.784891°

See Detail 1

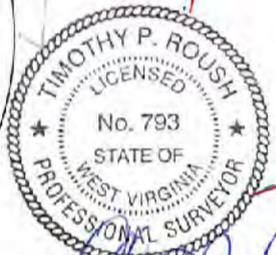
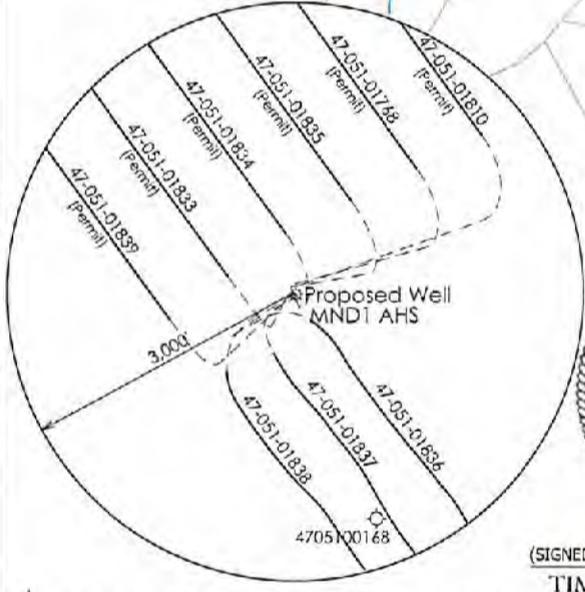
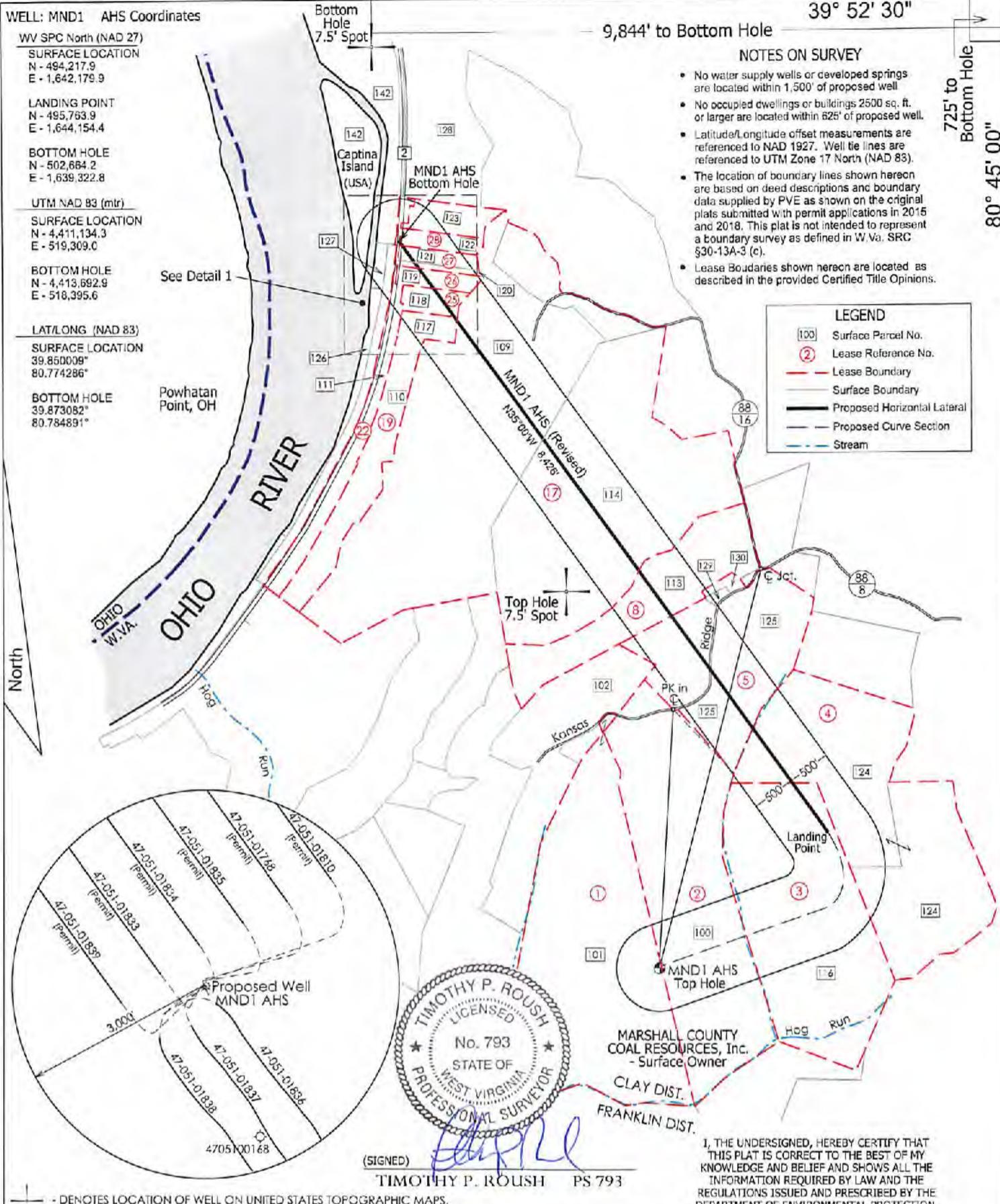
Powhatan Point, OH

NOTES ON SURVEY

- No water supply wells or developed springs are located within 1,500' of proposed well
- No occupied dwellings or buildings 2500 sq. ft. or larger are located within 825' of proposed well.
- Latitude/Longitude offset measurements are referenced to NAD 1927. Well tie lines are referenced to UTM Zone 17 North (NAD 83).
- The location of boundary lines shown hereon are based on deed descriptions and boundary data supplied by PVE as shown on the original plats submitted with permit applications in 2015 and 2018. This plat is not intended to represent a boundary survey as defined in W. Va. SRC §30-13A-3 (c).
- Lease Boundaries shown hereon are located as described in the provided Certified Title Opinions.

LEGEND

- 100 Surface Parcel No.
- ② Lease Reference No.
- Lease Boundary
- Surface Boundary
- Proposed Horizontal Lateral
- Proposed Curve Section
- Stream



(SIGNED) *Timothy P. Roush*
TIMOTHY P. ROUSH PS 793

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

FILE NO. _____
SCALE: 1" = 1,500'
MINIMUM DEGREE OF ACCURACY: Sub-Meter
PROVEN SOURCE OF ELEVATION: DGPS Survey



WEST VIRGINIA
Department of Environmental Protection
Office of Oil and Gas
601 57th Street
Charleston, West Virginia 25301

DATE: October 21, 2021
WELL NAME: MND1 AHS
API WELL NO.: 47-051-01810 MOD
State: County: RECEIVED Permit

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

LOCATION: ELEVATION 1,150' WATERSHED Hog Run - Ohio River
DISTRICT: Clay COUNTY: Marshall QUADRANGLE: Powhatan Point 7.5'
SURFACE OWNER: Marshall County Coal Resources, Inc. ACREAGE: 128.32 Ac.
OIL & GAS ROYALTY OWNER: HG Energy II Appalachia, LLC LEASE ACREAGE: 128.32 Ac. LEASE NO. _____
PROPOSED WORK: DRILL CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE PLUG OFF OLD FORMATION ___
PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD Plat - Revised BHL and TVD
PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ TARGET FORMATION Marcellus Shale ESTIMATED DEPTH 6,290' TVD
15,959' TMD

WELL OPERATOR: HG Energy II Appalachia, LLC ADDRESS: 5260 DuPont Road Parkersburg, WV 26101
DESIGNATED AGENT: Diane White ADDRESS: 5260 DuPont Road Parkersburg, WV 26101
PAGE 1 OF 2

11/12/2021

6,870' to Top Hole

39° 52' 30"

9,844' to Bottom Hole

725' to Bottom Hole
80° 45' 00"

9,129' to Top Hole

WELL: MND1 AHS Coordinates

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E - 1,642,179.9

LANDING POINT
N - 495,763.9
E - 1,644,154.4

BOTTOM HOLE
N - 502,664.2
E - 1,639,322.8

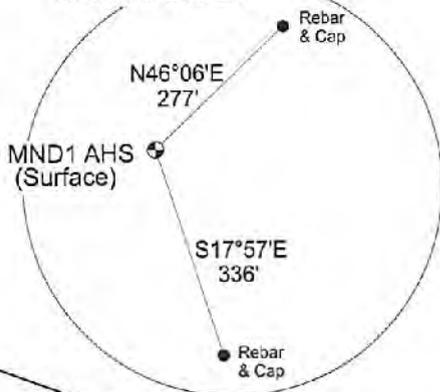
UTM NAD 83 (mtr)
SURFACE LOCATION
N - 4,411,134.3
E - 519,309.0

BOTTOM HOLE
N - 4,413,692.9
E - 518,396.6

LAT/LONG (NAD 83)
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39.850009°
80.774288°

BOTTOM HOLE
39.873082°
80.784891°

WELL REFERENCES

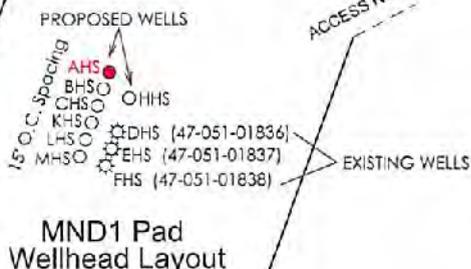


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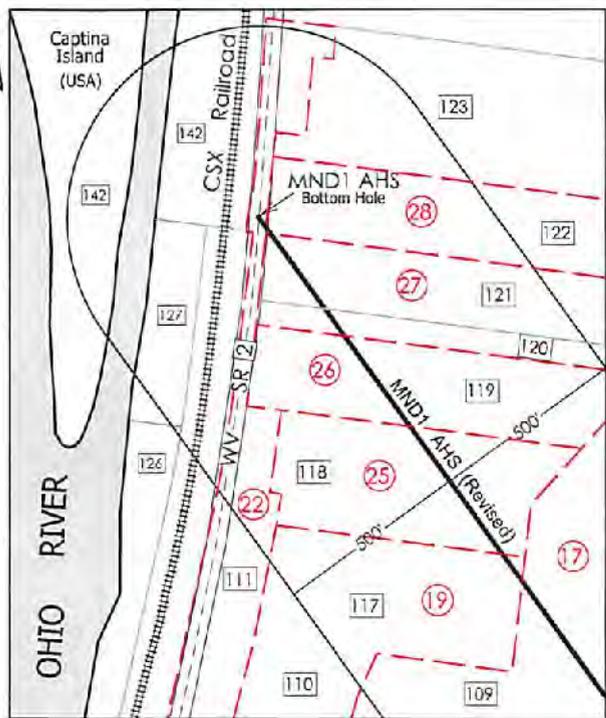
1	HG ENERGY II APPALACHIA, LLC	TMP 04-14-10
2	HG ENERGY II APPALACHIA, LLC	TMP 04-14-09
3	HG ENERGY II APPALACHIA, LLC	TMP 04-14-08
4	EUGENE C. & ELIZABETH A. ESTEP	TMP 04-13-02
5	WENDELL B. & CAROLYN S. RINE	TMP 04-14-07
8	MOUNTAINEER NATURAL GAS CO.	TMP 04-07-18
17	PAUL J. & JULIE D. MAIDENS	TMP 04-07-14; 07-17
19	NYLA J. BELL	TMP 04-07-15
22	NYLA J. BELL	TMP 04-07-16
25	RITA A. BERRY	TMP 04-07-15.02
26	EDWARD & LOIS PETERS	TMP 04-07-15.10
27	DONALD CHICHILO	TMP 04-07-15.01; 15.07
28	RANDOLPH BRUNNER	TMP 04-07-15.05

SURFACE PARCEL TABLE

100	Marshall County Coal Resources, Inc.	TMP 04-14-09
101	Marshall County Coal Resources, Inc.	TMP 04-14-10
102	Robert E. Tschappat Sr. et ux.	TMP 04-14-06
109	Paul J. & Julie D. Maidens	TMP 04-07-14
110	W.Va. Department of Highways	TMP 04-07-15
111	State Road Commission	TMP 04-07-16
113	Carmella Faye & Michael Rose	TMP 04-07-18
114	Paul J. & Julie D. Maidens	TMP 04-07-17
116	Marshall County Coal Resources, Inc.	TMP 04-14-08
117	W.Va. Department of Highways	TMP 04-07-15.03
118	W.Va. Department of Highways	TMP 04-07-15.02
119	W.Va. Department of Highways	TMP 04-15-10
120	W.Va. Department of Highways	TMP 04-07-15.07
121	W.Va. Department of Highways	TMP 04-07-15.01
122	W.Va. Department of Highways	TMP 04-07-15.05
123	W.Va. Department of Highways	TMP 04-07-15.06
124	Eugene C. & Elizabeth A. Estep	TMP 04-13-02
125	Wendell B. & Carolyn S. Rine	TMP 04-14-07
126	Jim Arritt et al.	TMP 04-07-15.09
127	Black Gold Group	TMP 04-07-15.06
128	John T. Wilson Jr.	TMP 04-06-07
129	Lloyd Rutan - Life Est.	TMP 04-07-18.01
130	Raymond Rutan	TMP 04-07-18.02
142	U.S.A.	TMP 04-06-07.1



Top Hole 7.5' Spot



DETAIL 1 Scale: 1"=500'



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

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Department of Environmental Protection
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601 57th Street
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DATE: October 21, 2021
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API WELL NO.: 47 - 051 - 01810 Mod
State: West Virginia County: Boone Permit

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PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,290' TVD
15,959' TMD

WELL OPERATOR: HG Energy II Appalachia, LLC
ADDRESS: 5260 DuPont Road
Parkersburg, WV 26101

DESIGNATED AGENT: Diane White
ADDRESS: 5260 DuPont Road
Parkersburg, WV 26101

11/12/2021

6,870' to Top Hole

39° 52' 30"

9,844' to Bottom Hole

725' to Bottom Hole

80° 45' 00"

9,129' to Top Hole

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See Detail 1

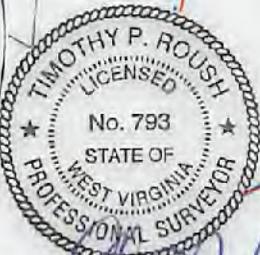
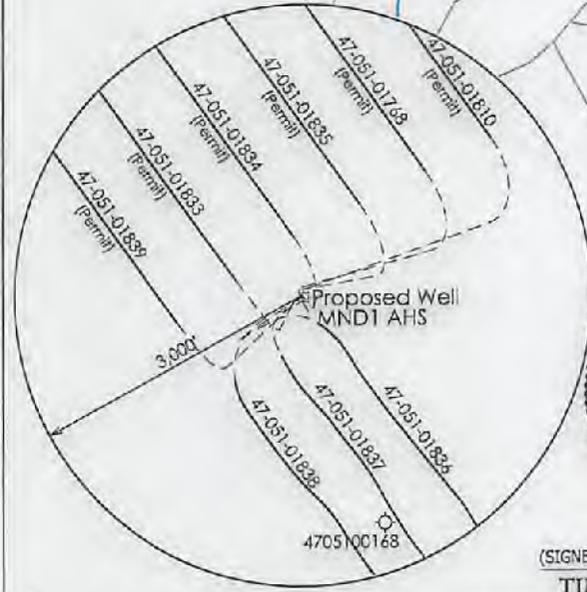
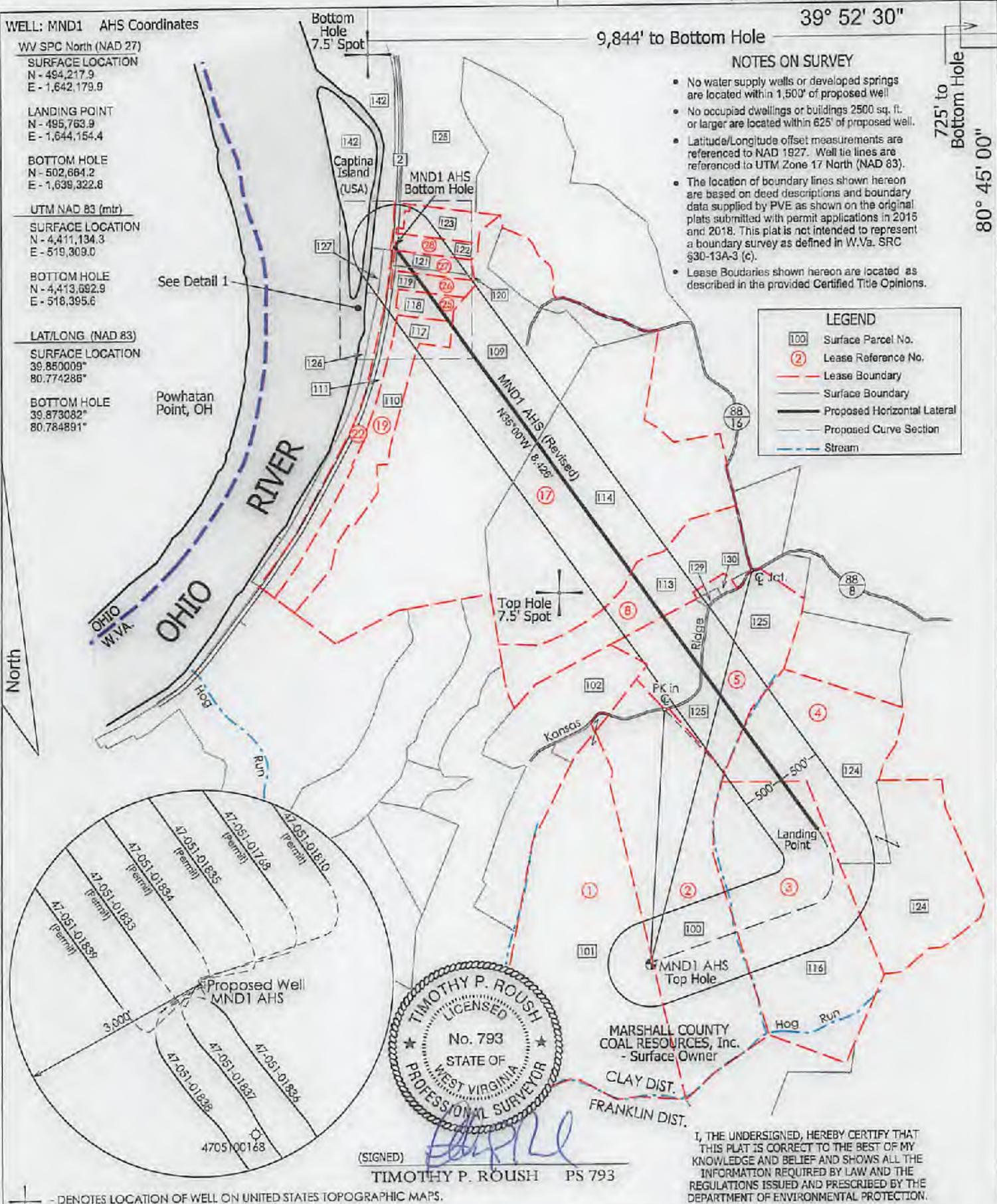
Powhatan Point, OH

NOTES ON SURVEY

- No water supply wells or developed springs are located within 1,500' of proposed well.
- No occupied dwellings or buildings 2500 sq. ft. or larger are located within 625' of proposed well.
- Latitude/Longitude offset measurements are referenced to NAD 1927. Well tie lines are referenced to UTM Zone 17 North (NAD 83).
- The location of boundary lines shown hereon are based on deed descriptions and boundary data supplied by PVE as shown on the original plats submitted with permit applications in 2015 and 2018. This plat is not intended to represent a boundary survey as defined in W.Va. SRC §30-13A-3 (c).
- Lease Boudaries shown hereon are located as described in the provided Certified Title Opinions.

LEGEND

- 100 Surface Parcel No.
- 2 Lease Reference No.
- Lease Boundary
- Surface Boundary
- Proposed Horizontal Lateral
- Proposed Curve Section
- Stream



(SIGNED) TIMOTHY P. ROUSH PS 793

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+ DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

FILE NO. _____
 SCALE: 1" = 1,500'
 MINIMUM DEGREE OF ACCURACY: Sub-Meter
 PROVEN SOURCE OF ELEVATION: DGPS Survey



WEST VIRGINIA
 Department of Environmental Protection
 Office of Oil and Gas
 601 57th Street
 Charleston, West Virginia 25301

DATE: October 21, 2021
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 API WELL NO.: 47 - 051 - 01810 MOD
 State County Permit

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

11/12/2021

LOCATION: ELEVATION 1,150' WATERSHED Hog Run - Ohio River
 DISTRICT: Clay COUNTY: Marshall QUADRANGLE: Powhatan Point 7.5'
 SURFACE OWNER: Marshall County Coal Resources, Inc. ACREAGE: 128.32 Ac.

OIL & GAS ROYALTY OWNER: HG Energy II Appalachia, LLC LEASE ACREAGE: 128.32 Ac. LEASE NO. _____

PROPOSED WORK: DRILL CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE PLUG OFF OLD FORMATION ___
 PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD Plat - Revised BHL and TVD
 PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ TARGET FORMATION Marcellus Shale ESTIMATED DEPTH 6,290' TVD
 15,959' TMD

WELL OPERATOR: HG Energy II Appalachia, LLC
 ADDRESS: 5260 DuPont Road
 Parkersburg, WV 26101

DESIGNATED AGENT: Diane White
 ADDRESS: 5260 DuPont Road
 Parkersburg, WV 26101

6,870' to Top Hole

39° 52' 30"

9,844' to Bottom Hole

725' to Bottom Hole

80° 45' 00"

9,129' to Top Hole

WELL: MND1 AHS Coordinates

WV SPC North (NAD 27)

SURFACE LOCATION
N - 494,217.9
E - 1,642,179.9

LANDING POINT
N - 495,763.9
E - 1,644,154.4

BOTTOM HOLE
N - 502,864.2
E - 1,639,322.8

UTM NAD 83 (mtr)

SURFACE LOCATION
N - 4,411,134.3
E - 519,309.0

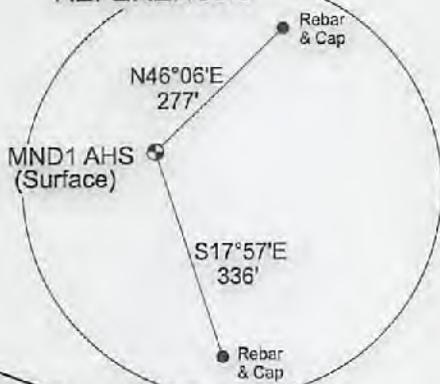
BOTTOM HOLE
N - 4,413,692.9
E - 518,395.5

LAT/LONG (NAD 83)

SURFACE LOCATION
39.850008°
80.774286°

BOTTOM HOLE
39.873082°
80.784891°

WELL REFERENCES



LEASE TABLE

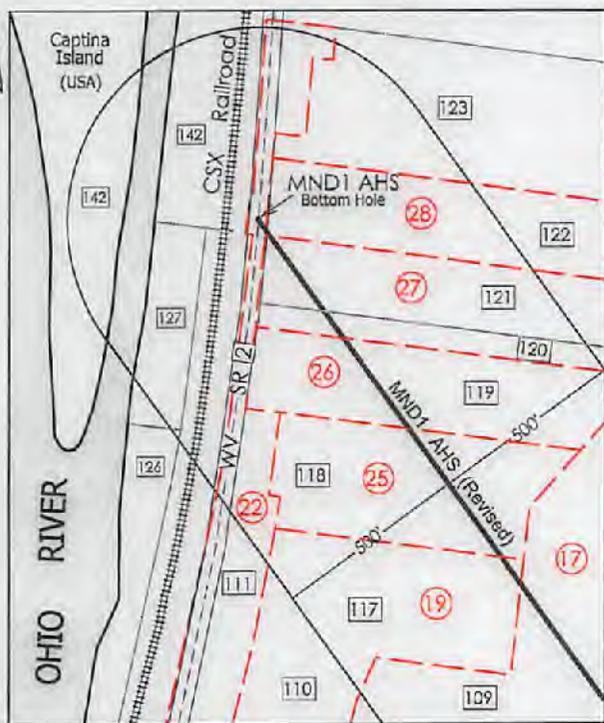
Table with 3 columns: Lease Number, Leaseholder Name, and Lease Term. Includes entries like HG ENERGY II APPALACHIA, LLC and EUGENE C. & ELIZABETH A. ESTEP.

SURFACE PARCEL TABLE

Table with 3 columns: Parcel Number, Parcel Owner Name, and Lease Term. Includes entries like Marshall County Coal Resources, Inc. and Robert E. Tschappat Sr. et ux.



Top Hole 7.5' Spot



DETAIL 1 Scale: 1"=500'



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

(SIGNED) TIMOTHY P. ROUSH PS 793

FILE NO. _____
SCALE: 1" = 1,500'
MINIMUM DEGREE OF ACCURACY: Sub-Meter
PROVEN SOURCE OF ELEVATION: DGPS Survey



WEST VIRGINIA
Department of Environmental Protection
Office of Oil and Gas
601 57th Street
Charleston, West Virginia 25301

DATE: October 21, 2021
WELL NAME: MND1 AHS
API WELL NO.: 47 - 051 - 01810 MOD
State County Permit

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

11/12/2021

LOCATION: ELEVATION 1,150' WATERSHED Hog Run - Ohio River
DISTRICT: Clay COUNTY: Marshall QUADRANGLE: Powhatan Point 7.5'
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PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____ TARGET FORMATION Marcellus Shale ESTIMATED DEPTH 6,290' TVD
15,959' TMD

WELL OPERATOR: HG Energy II Appalachia, LLC DESIGNATED AGENT: Diane White
ADDRESS: 5260 DuPont Road ADDRESS: 5260 DuPont Road
Parkersburg, WV 26101 Parkersburg, WV 26101 PAGE 2 OF 2

WW-6A1
(3/13)

Operator's Well No. _____

**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 Lease Chains **

**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

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

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

HG Energy II Appalachia, LLC
MND1 AHS Lease Chains

PLAT LEASE NO.	PLAT LEASE NAME	HG Lease Number	MPID	Original Lessor	Original Lessee	Royalty	Book	Page
1	HG Energy II Appalachia, LLC	1) 623175	04-0014-0010-0000-0000	Noble Energy, Inc.	HG ENERGY II APPALACHIA, LLC	Fee	39	1
2	HG Energy II Appalachia, LLC	2) 623177	04-0014-0009-0000-0000	Noble Energy, Inc.	HG ENERGY II APPALACHIA, LLC	Fee	39	1
3	HG Energy II Appalachia, LLC	3) 623173	04-0014-0008-0000-0000	Noble Energy, Inc.	HG ENERGY II APPALACHIA, LLC		39	1
4	Eugene C. & Elizabeth A. Estep	4) HGII02042	04-0013-0002-0000-0000	Eugene Estep	HG ENERGY II APPALACHIA, LLC	Not less than 1/8	1122	370
5	Wendell B. & Carolyn S. Rine	5) HGII01930	04-0014-0007-0000-0000	Wendell B. Rine and Carolyn S. Rine	HG ENERGY II APPALACHIA, LLC	Not less than 1/8	1120	270
8	Mountaineer Natural Gas Co.	8) HGII170	04-0007-0018-0000-0000	Mountaineer Natural Gas Co.	HG ENERGY II APPALACHIA, LLC	Not less than 1/8	1041	320
17	Paul J. & Julie D. Maidens	8) Q082524000	04-0007-0014-0000-0000, 04-0007-0017-0000-0000	Paul J. Maidens, et ux	Noble Energy, Inc. HG ENERGY II APPALACHIA, LLC	Not less than 1/8	826	90
				NOBLE ENERGY INC			39	1
19	Nyla J. Bell	19) Q080080000	04-0007-0015-0003-0000	Nyla J. Bell, widow	Noble Energy, Inc. HG ENERGY II APPALACHIA, LLC	not less than 1/8	813	251
				NOBLE ENERGY INC			39	1
22	Nyla J. Bell	22) Q085360000	04-0007-0016-0000-0000	Nyla J. Bell, widow	Noble Energy, Inc. HG ENERGY II APPALACHIA, LLC	Not less than 1/8	839	568
				NOBLE ENERGY INC			39	1
25	Rita A. Berry	25) TH47051.065.1	04-0007-0015-0002-0000	Rita A. Berry	TH Exploration, LLC	not less than 1/8	851	267
				Eric M. Gordan and Janice Gordan	TH Exploration, LLC HG ENERGY II	not less than 1/8	866	324
				TH Exploration, LLC	APPALACHIA, LLC		41	392
26	Edward & Lois Peters	25) Q076174000	04-0007-0015-0010-0000	Edward and Lois Peters	Noble Energy, Inc. HG ENERGY II APPALACHIA, LLC	not less than 1/8	801	82
				NOBLE ENERGY INC			39	1
27	Donald Chichilo	27) Q074934000	04-0007-0015-0007-0000, 04-0007-0015-0001-0000	Donald Chichilo	Noble Energy, Inc. HG ENERGY II APPALACHIA, LLC	not less than 1/8	794	329
				NOBLE ENERGY INC			39	1
28	Randolph Brunner	28) Q078676000	04-0007-0015-0005-0000	Randolph Brunner	Noble Energy, Inc. HG ENERGY II APPALACHIA, LLC	not less than 1/8	808	299
				NOBLE ENERGY INC			39	1

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Office of Oil and Gas

OCT 29 2021

WV Department of
Environmental Protection



Stansberry, Wade A <wade.a.stansberry@wv.gov>

Fwd: Expedited H6A Modification Well Work Permit (MND 1 Pad)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov>

Wed, Nov 10, 2021 at 9:46 AM

To: "Knitowski, Gayne J" <e026012@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org>

Thank you,

Wade A. Stansberry**Environmental Resource Specialist 3****West Virginia Department of Environmental Protection****Office of Oil & Gas****601 57th St. SE****Charleston, WV 25304****(304) 926-0499 ext. 41115****(304) 926-0452 fax****Wade.A.Stansberry@wv.gov**

----- Forwarded message -----

From: **Stansberry, Wade A** <wade.a.stansberry@wv.gov>

Date: Wed, Nov 10, 2021 at 9:33 AM

Subject: Expedited H6A Modification Well Work Permit (MND 1 Pad)

To: Diane White <dwhite@hgenergyllc.com>, Taylor, Joseph D <joseph.d.taylor@wv.gov>, Emily Westfall <ewestfall@wvassessor.com>

I have attached a copy of the newly issued well [permit](#) numbers . This will serve as your copy.If you have any questions, then [please](#) contact us here at the Office of Oil and Gas.

47-051-01768

47-051-01810

47-051-01833

47-051-01834

47-051-01835

47-051-01839

47-051-02416

Thank you,

Wade A. Stansberry**Environmental Resource Specialist 3****West Virginia Department of Environmental Protection****Office of Oil & Gas****601 57th St. SE****Charleston, WV 25304****(304) 926-0499 ext. 41115****(304) 926-0452 fax****11/12/2021**

Wade.A.Stansberry@wv.gov

7 attachments

-  **47-051-01768 - mod.pdf**
1346K
-  **47-051-01834 - mod.pdf**
1339K
-  **47-051-01810 - mod.pdf**
1373K
-  **47-051-01833 - mod.pdf**
1350K
-  **47-051-01835 - mod.pdf**
1352K
-  **47-051-01839 - mod.pdf**
1327K
-  **47-051-02416 - mod.pdf**
1334K

11/12/2021